ANSI, Codes & Programs Update

Membership Meeting

June 13, 2013

The Need for the CRRC-1 Standard

- Independent (of the CRRC Product Rating Program)
- Consensus-based development
- Mandatory language
- Does not prescribe proprietary policies, products or actions

CRRC-1 Standard

- CRRC-1 Standard was updated December 2012
  - Can be used by the national model codes and standards developers
- CRRC-1 Program Manual continues to reference the CRRC-1 Standard

Markets

- International Code Council:
  - International Energy Conservation Code
  - International Residential Code - Energy
  - International Green Construction Code

Markets

- American Society of Heating Refrigerating and Air-conditioning Engineers (ASHRAE)
  - Standard 90.1 (Commercial Energy)
  - Standard 90.2 (Residential Energy)
  - Standard 189.1 (Green Standard)

Markets

- Jurisdictions, US and foreign
- Government agencies
- Voluntary green, sustainable and/or high performance programs (e.g. LEED, GBI, ULE, ICC-ES, IAPMO, etc.)

Impacts

The following entities are able to retain their current reference to the CRRC-1 “Roof Product Program”:

- US EPA Energy Star Roof Program
- California Energy Commission
- City of Philadelphia, Cool Roof Provisions

Current Status

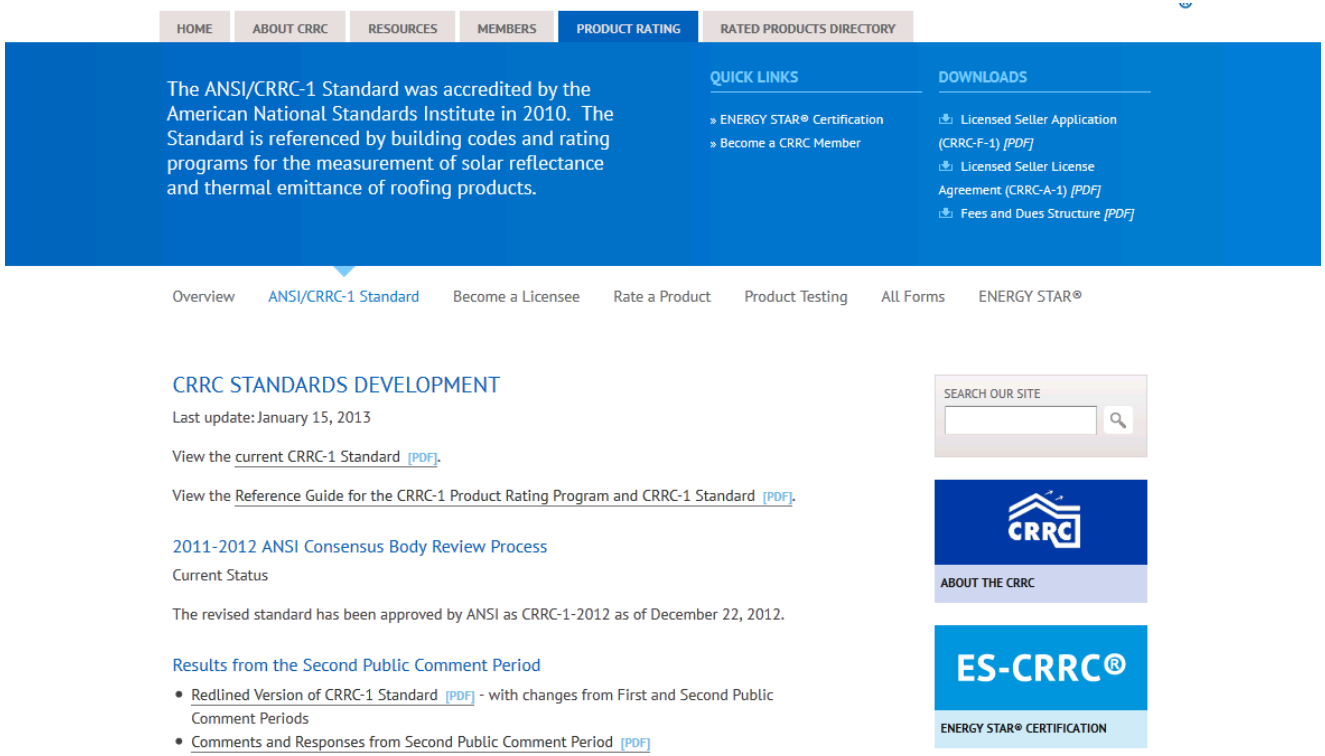
- Standard has undergone another public review and ANSI review
- Approved by ANSI on December 22, 2012.
- Updated several provisions as a result of CRRC research and other national laboratory research

Consensus Body Members

First	Last	Company	Member Type
Rick	Olson	Tile Roofing Institute	Producer
Richard	Snyder	CertainTeed Corporation	Producer
Dwayne	Wacenske	Firestone Building Products LLC	Producer
Joseph	Schwetz	Sika Sarnafil	Producer
Jonathan	Humble	American Iron and Steel Institute	Producer
Chris	Salazar	Karnak Corporation	Producer
Steve	Thorsell	ICC-ES	User
David	Yarbrough	R&D Services	User
Peyton	Collie	Sheet Metal and Air Conditioning Contractors' National Association	User
Mark	Graham	National Roofing Contractors Association	User
Stewart	Relyea	Intertek - Middleton	User
Ted	Michelsen	Michelsen Technologies, LLC	User
Mike	Ennis	SPRI	User
Hugo	Destaillats	Lawrence Berkeley National Laboratory	General interest
Andre	Desjarlais	Oak Ridge National Laboratory	General interest
Phillip	Smith	FM Approvals	General interest

For More Info

Visit the ANSI webpage on the CRRC site



http://coolroofs.org/product-rating/ansi-crrc-1-standard

ASHRAE Standard 90.1 (Commercial Energy)

- ASHRAE 90.1-2010 was published in November 2010
- CRRC-1 Product Rating Program is referenced
  - CRRC-1 Standard is included in the 2011 Addenda
- Mandatory prescriptive cool roof requirements:

Minimum 3-year aged SR	Minimum 3-year aged TE	Minimum 3-year aged SRI
0.55	0.75	64

ASHRAE Standard 189.1 (High Perform. Green)

- Published in January 2011
- 75% of roof surface of buildings in climate zones 1-3 = covered with cool roofing
  - Surfaces covered in renewable energy systems or green roofs do not count towards total

Roof Slope	Minimum Initial SRI	Or
≤ 2:12	78	ENERGY STAR
>2:12	29	

ASHRAE Standard 189.1 (High Perform. Green)

- Exceptions
  - A non-cool roof can be used if simulation shows that the roof demonstrates at least 2% less annual energy cost and CO_2 production than a qualifying cool roof
  - Roofs over parking or semi-heated spaces must have minimum SRI of 29
    - New concrete without added pigment can assume and SRI of 35 without measurement

ASHRAE Standard 189.1 (High Perform. Green)

- 189.1-2011 edition only references individual ASTM test methods
- Standard 189.1 committee has addenda which recognizes CRRC-1 Standard for the 189.1-2014 edition. Followed suit of 90.1 addenda

International Energy Conservation Code

- IECC-2012 edition contains cool roof provisions, but only ASTM test methods
- IECC 2013 code cycle, CRRC proposed introduction of CRRC-1 Standard
- First code hearing, approved. Awaiting second code hearing results
- See www.iccsafe.org

International Green Construction Code

- 2012 IgCC published March 27, 2012
- The language references the CRRC-1 Standard, and also the ASTM test methods
- IgCC 2014 code cycle CRRC will update standard
- See www.iccsafe.org for more info

International Green Construction Code

- 75% of roof surface of buildings in climate zones 1-3 are to be covered with green or cool roofing
  - Surfaces covered in solar thermal collectors or PV systems do not count towards total.

Roof Slope	Minimum Aged SR	Minimum Aged TE	Minimum Aged SRI
≤ 2:12	0.55	0.75	60
> 2:12	0.30	0.75	25

CALGreen Building Standards Code

- 2010 CALGreen Code requirements effective January 1, 2011
- Applicable to all building types
- State jurisdictions can adopt
  - Tier 1(SBD requirements), or
  - Tier 2 (15% > than SBD)

CALGreen Building Standards Code

Tier 1 Cool Roof Requirements

Roof Slope	Roof Weight	Climate Zone	Minimum 3-year SR	Thermal Emittance	SRI
≤ 2:12	N.A.	13 & 15	0.55	0.75	64
> 2:12	< 5 lbs./ft^2	10-15	0.2	0.75	16
	≥ 5 lbs./ft^2	1-16	0.15	0.75	10

CALGreen Building Standards Code

Tier 2 Cool Roof Requirements

Roof Slope	Roof Weight	Climate Zone	Minimum 3-year SR	Thermal Emittance	SRI
≤ 2:12	N.A.	2, 4, 6-15	0.65	0.85	78
> 2:12	N.A.	2, 4, 6-15	0.23	0.85	20

CALGreen Building Standards Code

- Exceptions for thermal mass construction projects of 25 lb/ft^2
- 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 Energy Code

- 2013 version approved May 31, 2012
- Effective January 1, 2014
- New prescriptive standards
- New insulation tradeoff for prescriptive

CA Title 24 Energy Code

- Prescriptive standard for **low-slope** products
  - Non-residential buildings in all CZ
  - High-rise residential buildings and hotels and motels in CZ 2-15

Title 24 Version	Minimum 3 year Aged SR	Minimum TE	Minimum SRI
2008	0.55	0.75	64
2013	0.63	0.75	75

CA Title 24 Energy Code

- Prescriptive standard for **steep-slope** products
  - Non-residential buildings in all CZ
  - High-rise residential buildings and hotels and motels in CZ 2-15

Title 24 Version	Minimum 3 year Aged SR	Minimum TE	Minimum SRI
2013	0.20	0.75	16

Future Work

- The 2012 edition of the CRRC-1 Standard has been submitted for inclusion/updating:
  - ASHRAE Standard 90.1 (Commercial Energy Code)
  - ASHRAE Standard 189.1 (High Performance Green Standard)
  - ICC-International Energy Conservation Code
  - ICC-International Green Constr. Code

Existing References

- The CRRC-1 Product Rating Program and the CRRC-1 Standard are coordinated so that there is no need for existing jurisdictions, who reference the CRRC-1 Product Rating Program, to modify the technical provisions of their adopted code

Existing References

- The Program will reference the Standard
- However, the Standard will NOT reference the Program. The Standard will remain independent from the Program
- The reference date of the Program by the jurisdiction may need to be updated when appropriate

Questions