







Cool Roof Rating Program

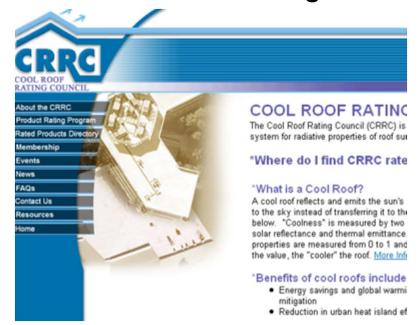


What is the CRRC?

3rd Party Rating System for Roofing Products



Educational Resource on Cool Roofing



CRRC Mission:

To implement and communicate fair, accurate, and credible radiative energy performance rating systems for roof surfaces.

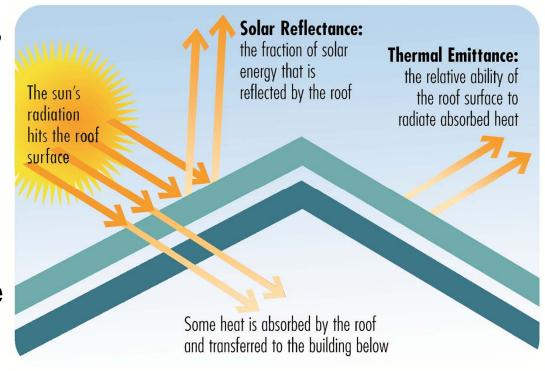


How Does the CRRC Rate a Cool Roof?

CRRC only measures **surface** properties:

- Solar Reflectance
- Thermal Emittance

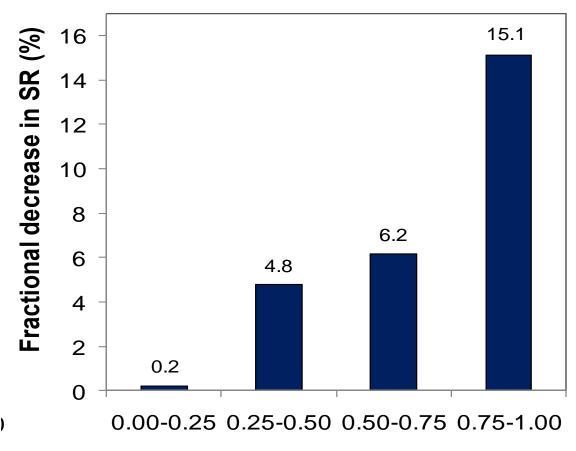
Rated on a scale from 0 to 1, where the higher the value, the more reflective or emissive.





Initial vs Aged Ratings





Range of initial SR



Testing Laboratories

CRRC product ratings are conducted by Accredited Independent Testing Laboratories

- ISO Certified
- Lab Training Required
- Independent from a supplier or roofing product company
- Annual Round Robin Quality Assurance Testing





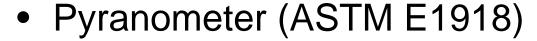


CRRC Test Methods

Solar Reflectance

- Reflectometer (ASTM C1549)
- CRRC-1 Test Method 1













CRRC Test Methods

Thermal Emittance

- Emissometer
 (ASTM C1371)
- Slide Method
- ConsideringAZ Technology

Temp/Tesa 2000 (ASTM E408)

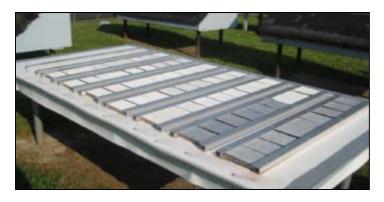




Weathering Farms

Product aging conducted at Accredited Test Farms

- ISO Certified
- Independent from a supplier or roofing product company



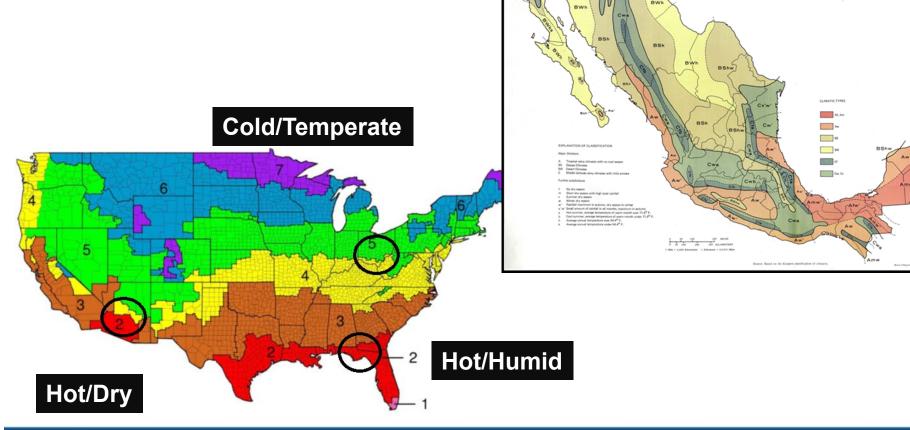


- Products aged for 3 years
- 3 climate zones across the US
- Exposed at steep or low slope angles



Considering Climate

CLIMATE





Product Rating Process

Manufacturers send samples to a test lab for Initial Testing





3 Year Aging at the 3 Test Farm Locations

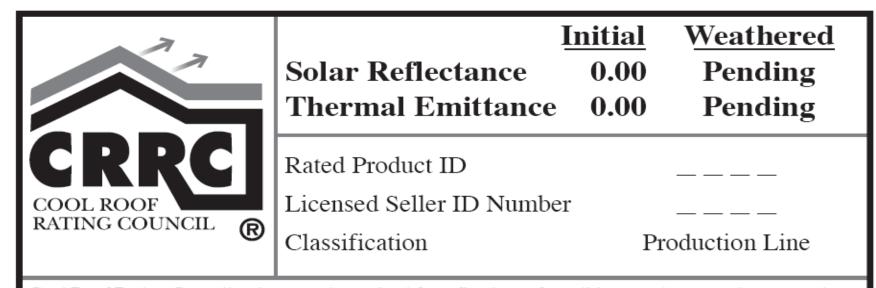


Aged Testing at a Test Lab





The CRRC Label



Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.

Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.



Rated Products Directory

RRC			
ROOF NG COUNCIL			
the CRRC at Rating Program Products Directory Members News ne a Member	Rated Produ (last updated 20 Ap Keywords:	cts Directory [show all products] r 2007 16:04 EDT)	Directory of Rated Products About California Title 24 About USGBC's LEED
to I to Us Roof Links	Product Type:	All Selected: Built-up Roofing (incld asphalt and coal tar pitch) Factory-Applied Coating Field-Applied Coating Metal Modified Biltumen Shingles or Shakes Single-Ply-Thermoplastic (includes TPO, PVC, etc)	
	Product Sold To:	Single-Ply-Thermoset (includes EPDM, Hypalon) ☐ Tile or Slate ☐ Other Other All Markets ○ End-User ○ Roofing Manufacturer	

http://www.coolroofs.org/products/search.php



Rated Products Directory



Directory of Rated Products

Rated Products Directory: Search Results [new search] [artet transfer views]

(last updated 13 May 2011 16:18 CDT) Showing Search Results for ALL PRODUCTS.

select " from products order by company_mame asc
previous) 1 2 3 8 1 8 7 8 9 15 11 12 13 15 15 16 17 18 19 20 21 22 23 24 25 25 27 28 29 20 31 32 33 34 35 20 37 38 39 40 41 42 43 46 45 45 47 48 49 50 51 52 53 54 55 56 57 10 59 60 61 62 60 67 67 71 72 73 75 75 77 70 79 60 61 62 60 60 67 60 67 60 67 60 67 60 67 60 67 67 71 72 73 75 75 75 77 70 79 60 61 62 60 67 60 6

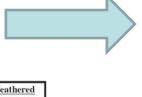
CRRC	Manufacturer Information			Color		Solar Reflect		t. Therm Emit.		ser 🕅		Slope
Prod. ID	(sorted+)	Brand	Model	Category	Product Type	init	3.yr	init	2.92	init	lur.	Application
1080-0001	3M Frank Klink (851-733-0999)	Scatchacte	Poly-Tech CSM 658	Bright White	Field-Applied Coating	0.85	pending	0.09	pendin	g 107	pendin	Lsw/Steep
980-0062	3M Frank Kink (651-733-009)	Scatchiole	Poly-Tech UV 662	Bright White	Field-Applied Coating	0.82	pending	0.09	pende	0 103	pendin	Law/Steep
1986-0064	A-1 Grit Company Harold Newman (951-782-0102)	Arctic White	Granule size: #11. Tested over a white adhesive. Manufacturer recommends 100% granule coverage for proper performance.		Other - Aggregate for use in roofing products	0.73	pending	0.92	pendin	91	pendin	Low
986-0005	A-1 Grit Company Harold Resiman (951-782-0102)	Gacer.White	3/6 inch aggregate. Tested over black asphalf with a maximum solar reflectance of 0.05. Manufacturer recommends 100% granule coverage for proper performance.	Bright White	Other - Other Aggregate for use in Roefing Products	0.70	pending	0.05	pendin	0 85	pendin	Low
986-0001	A-1 Grit Company Harold Newman (951-782-0102)	Mes.Post	#11 size granule. Tested over a white adhesive. Manufacturer recommends 100% granule coverage for proper performance.	Bright White	Other - Aggregate for use in rooting products	0.77	pending	0.93	pende	9 96	pendin	Law
966-0003	A-1 Grit Company flaroid Newman (951-782-0102)	Webs.C	7/16 inch aggregate. Tested over a white adhesive. Manufacturer recommends 105% granule coverage for proper performance.		Other - Aggregate for use in rooting products	0.61	pending	0.79	pendin	g 70	pending	Law
062-0001	Ace Coating Company Inc. Ben Heibrunn (619-697-3300)	Alpha 8	505		Field-Applied Coating	0.84	0.72	0.79	0.88	104	88	Low
728-0001	Advanced Coating Systems, Inc. Steve McGuinness (678-445-0040)	Energy Seal Coatings	Acu-Shirid	Bright White	Field-Applied Coating	0.09	0.81	0.09	0.87	113	101	Law/Steep
726-0062	Advanced Coating Systems, Inc.	Energy Seal Costnips	Acu-Shirid Ceranic	Bright White	Field-Applied Coating	0.06	0.78	0.09	0.87	100	97	Law/Steep



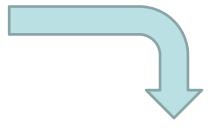
Supporting Code Compliance

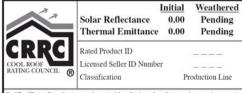












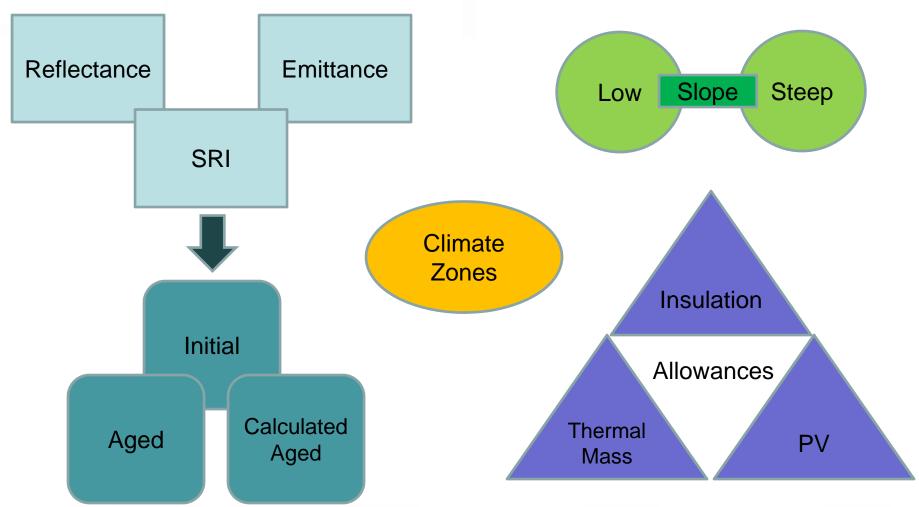
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Defining a Cool Roof





California Energy Code

Slope Type	Minimum 3 year Aged Solar Reflectance	Minimum Thermal Emittance	Minimum Solar Reflectance Index (SRI)
Low Slope	0.55	0.75	64
Steep Slope < 5 pounds/ft²	0.20	0.75	16
Steep Slope ≥ 5 pounds/ft²	0.15	0.75	10

If CRRC 3-year aged Reflectance values are not yet available, the CEC derives the aged value using $R_{aged} = 0.2 + 0.7[R_{initial} - 0.2]$



Resources

CRRC-1 Standard

Dictates how to prepare and test roofing products

http://coolroofs.org/documents/CRRC-1Standard-finalANSI.pdf

CRRC Program Manual

Dictates protocol for operating the CRRC Rating Program

http://coolroofs.org/documents/CRRC-1_Program_Manual_04142011.pdf

CRRC Website

Educational resource on cool roofing information

http://coolroofs.org/links.html









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