



Design and Operation of a Cool Roof Rating System



By

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CRRC Board Of Director



What is the CRRC?

3rd Party Rating System for Roofing Products

Educational Resource on Cool Roofing

SOLAR REFLECT.		THERM EMIT.		SRI	
Init	3 yr	Init	3 yr	Init	3 yr
0.84	0.71	0.90	0.92	106	88
0.83	0.70	0.89	0.91	104	86
0.84	0.75	0.89	0.91	106	93

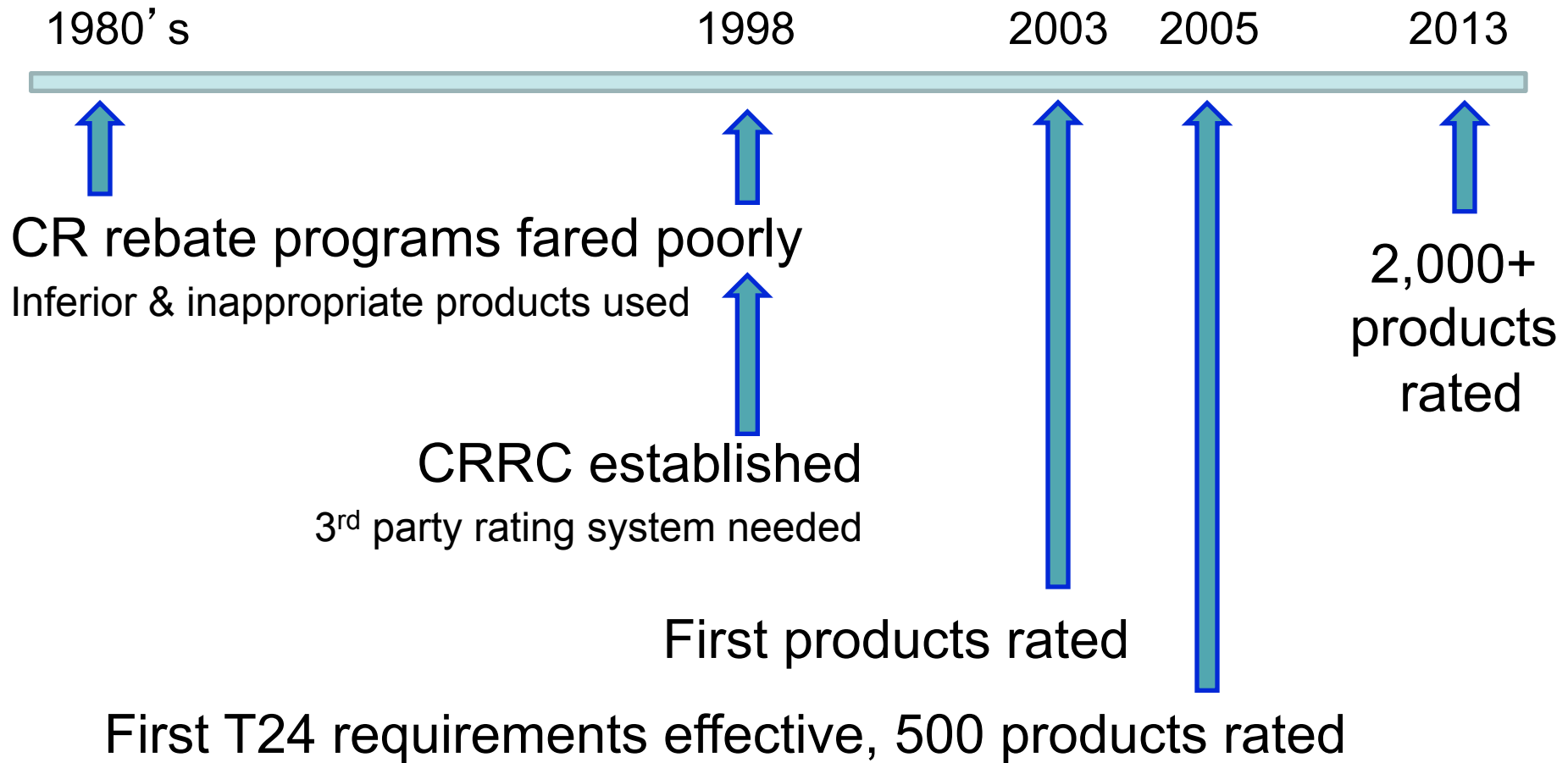


CRRC Mission:

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



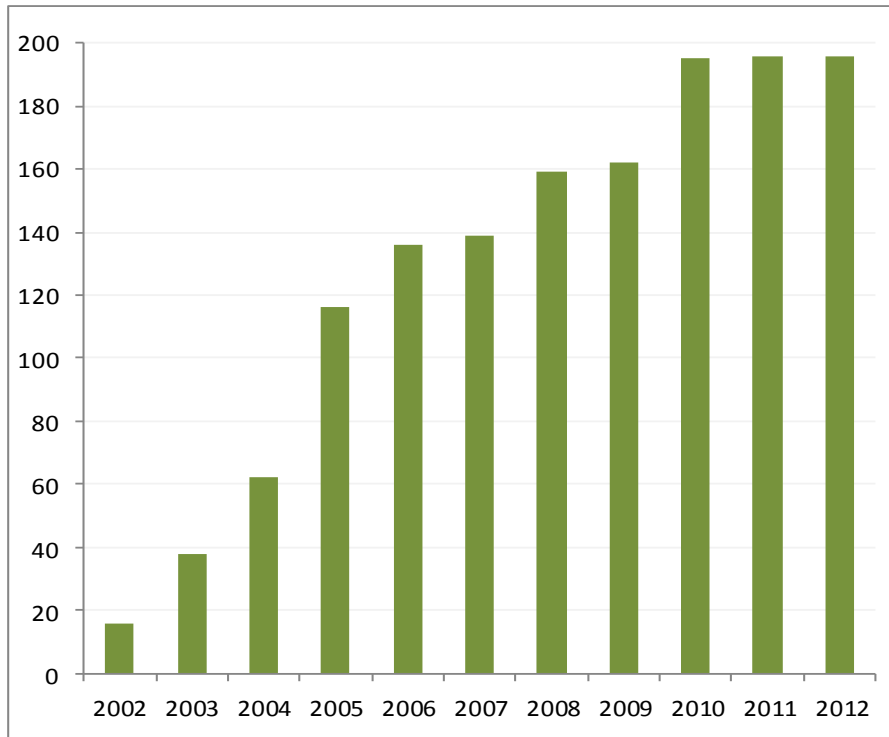
Evolution of the CRRC



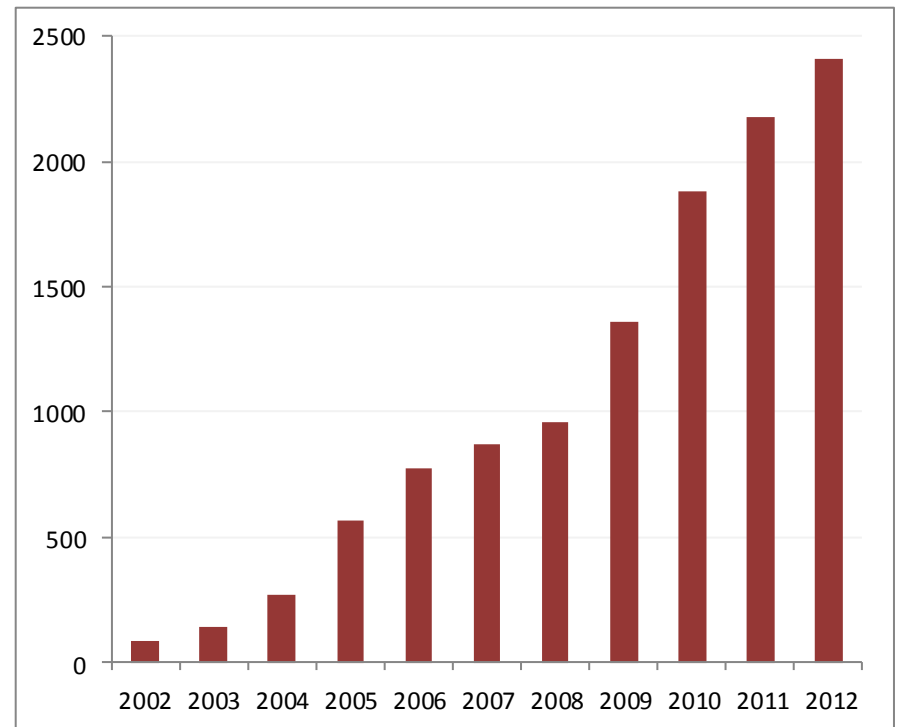


Rating Program Growth

Licenses 196



Products 2,410





CRRC Founding Partners

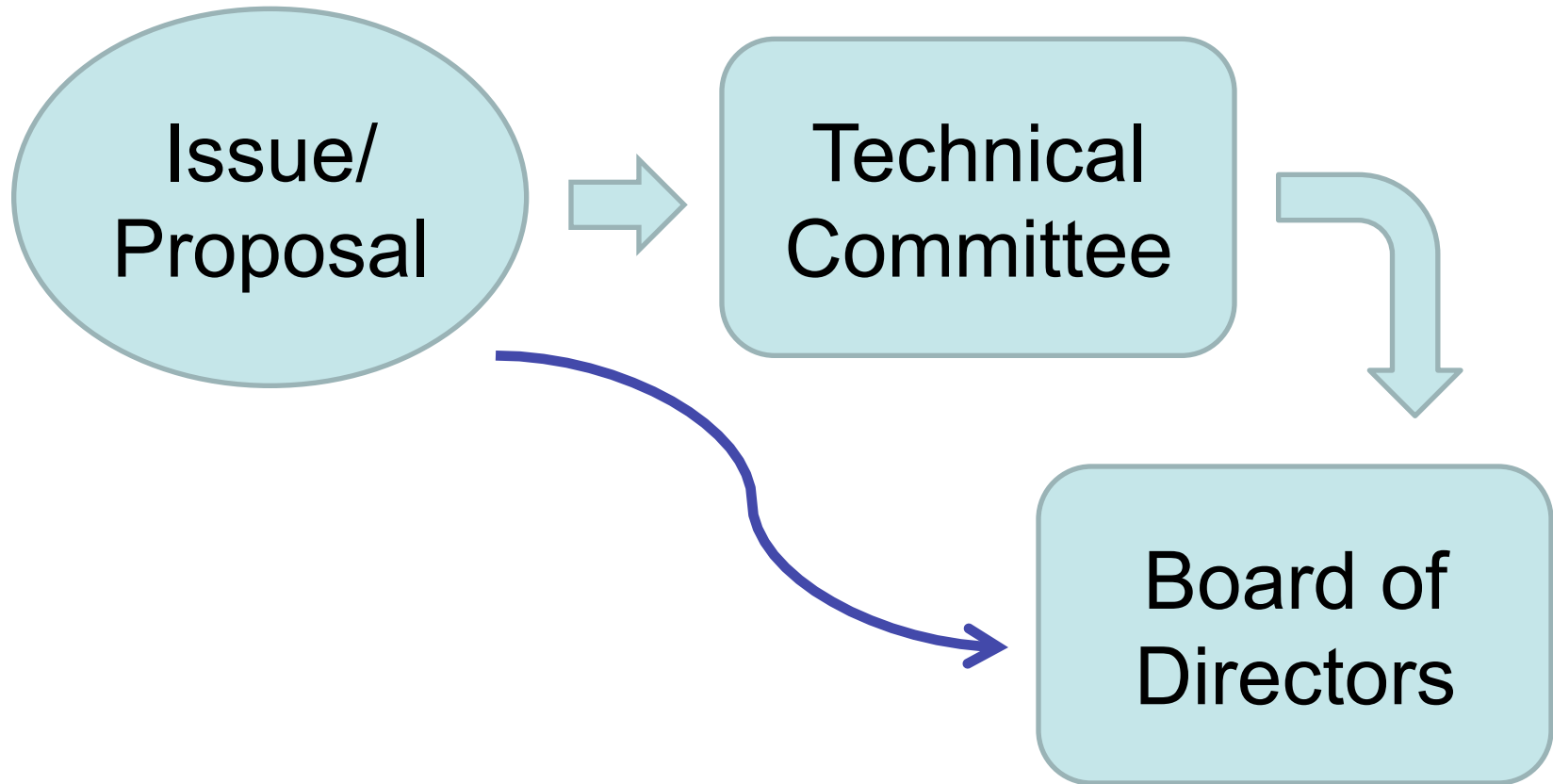


& Key Industry Manufacturers





CRRC Decision Making





Membership

200+ Members

- Class A (70%)

Manufacturers, distributors, trade associations

- Class B (30%)

Roofing contractors, government agencies, testing laboratories, test farms, code bodies, energy service companies

ANNUAL MEMBERSHIP DUES ³	
CLASS A	
Manufacturer	\$700
Distributor	\$700
Trade Association (representing Class A members)	\$1200
CLASS B	
Sustaining Member	\$2500
Member	\$50



Licensees & Rated Products

Manufacturers must become licensed to rate their products on the CRRC Directory.

ANNUAL FEES FOR LICENSED SELLERS AND OTHER MANUFACTURERS	
LICENSED SELLER FEE ¹	
Roofing Product Sales > \$10 Million	\$6000
Roofing Product Sales \$1-10 Million	\$4000
Roofing Product Sales <\$1 Million	\$1500
Factory-Coated Product Sellers	\$1000

¹No product applications will be processed until Licensee includes sales to Private Label clients who are themselves


LICENSED OTHER
Factory-Applied Coating Sales > \$10 Million
Factory-Applied Coating Sales \$1-10 Million
Factory-Applied Coating Sales < \$1 Million
All Others

²No product applications will be processed until Licensee includes sales direct to end-users plus sales to other Licensed Sellers

ANNUAL PRODUCT FEES		
Production Line Roofing Products		
Standard Roofing Product – Initial		\$240
Standard Roofing Product – Renewal		\$120
Standard Product – LS Referencing OM Ratings – Initial		\$240
Standard Product – LS Referencing OM Ratings – Renewal		\$60
Color Families <i>(see definitions below for this section)</i>		
Color Family Group ³ (includes Representative Element) - Initial		\$215
Color Family Group (includes Representative Element) - Renewal		\$120
Color Family Element (Additional) - Initial		\$50
Color Family Element (Additional) - Renewal		\$10
Convert a Standard Roofing Product to a Color Family Product ⁴		\$120



CRRC Label & Logo

		<u>Initial</u>	<u>Weathered</u>
	Solar Reflectance	0.00	Pending
	Thermal Emittance	0.00	Pending
	Rated Product ID	-----	
	Licensed Seller ID Number	-----	
	Classification	Production Line	

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may vary 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 Cool Roof Rating Council procedures.



Rated Products Directory

2405 SEARCH RESULTS

Filter criteria [Reset](#)

PRINT EXPORT CSV

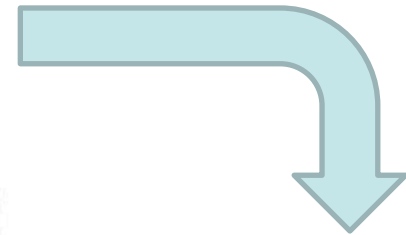
1 2 3 4 5 > Last >

CRRC PROD. ID	MANUFACTURER: BRAND MODEL	PRODUCT TYPE	COLOR	SOLAR REFLECT.		THERM EMIT.		SRI		MORE INFO
				Init	3 yr	Init	3 yr	Init	3 yr	
0682-0001	Western Colloid: Elastahyde 790 AFC White	Field-Applied Coatings: Acrylic	Bright White	0.84	0.71	0.90	0.92	106	88	+
0682-0002	Western Colloid: Elastahyde 770 AXP White	Field-Applied Coatings: Acrylic	Bright White	0.83	0.70	0.89	0.91	104	86	+
0682-0003	Western Colloid: Elastahyde 720 ARC White	Field-Applied Coatings: Acrylic	Bright White	0.84	0.75	0.89	0.91	106	93	+
0682-0004	Western Colloid: ElastaHyde 720 ARC Platinum Gray	Field-Applied Coatings: Acrylic	Grey	0.76	0.72	0.90	0.86	94	88	+
0682-0005	Western Colloid: ElastaHyde 720 ARC California Tan	Field-Applied Coatings: Acrylic	Tan	0.80	0.75	0.90	0.86	100	92	+
0758-0001	Virdlan Systems: White Roof Coating WC White	Field-Applied Coatings: Acrylic	Bright White	0.83	0.71	0.92	0.90	105	87	+
0778-0001	Whirlwind Steel Building, Inc.: Solar White TRINAR Whirlwind Roofing	Metal Products: Prepainted Metal	Off-White	0.71	0.71	0.85	0.86	86	86	+
0778-0002	Whirlwind Steel Building, Inc.: Cool White	Metal Products:	Bright White	0.75	0.74	0.86	0.84	92	90	+





Supporting Compliance

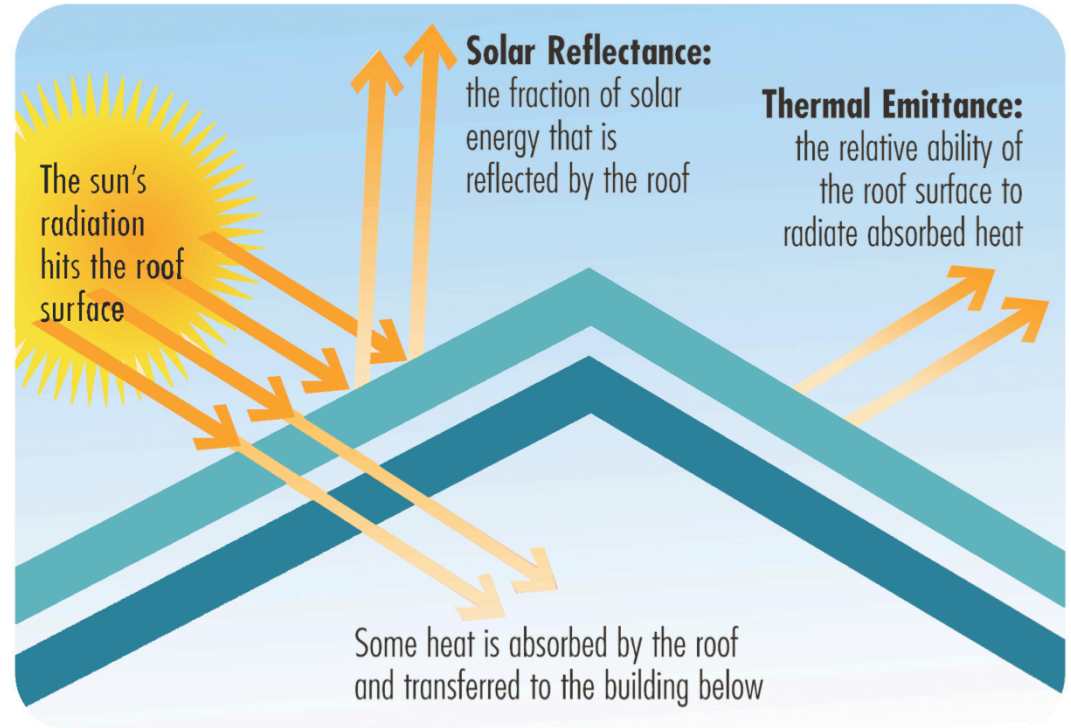
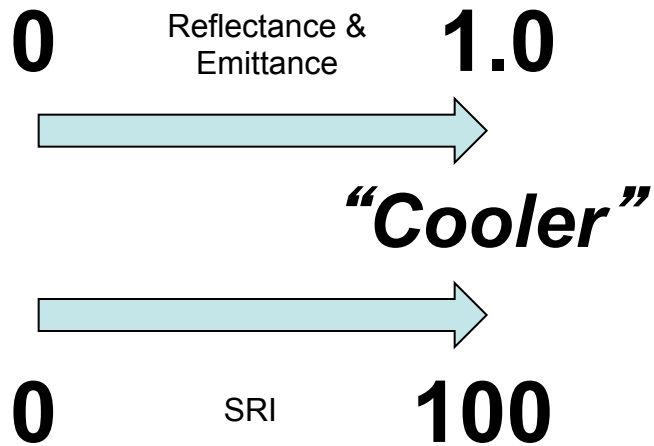


		Initial	Weathered
	Solar Reflectance	0.00	Pending
	Thermal Emittance	0.00	Pending
	Rated Product ID	----	
	Licensed Seller ID Number	----	
Classification		Production Line	
<small>Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.</small>			
<small>Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</small>			



How is a Cool Roof Rated?

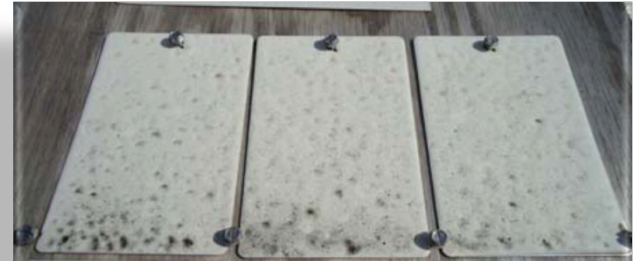
Rated using surface properties



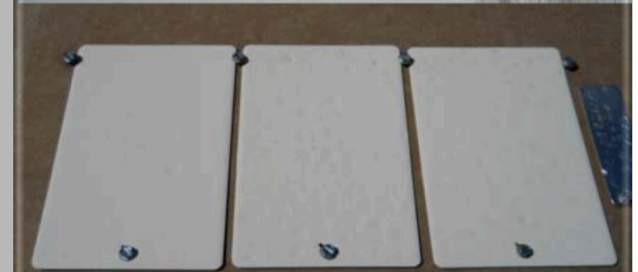
Aged Ratings



Ohio



Arizona



Florida

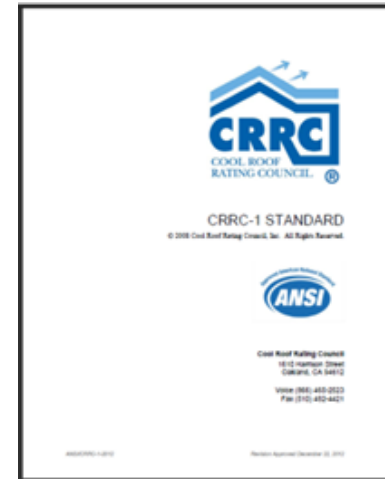


Images courtesy of Atlas Weathering Services Group



Program Credibility

- Random Testing
- ANSI Accredited
- Testing by independent labs
- Aging at independent test farms
- Strict Chain of Custody
 - between lab & weathering farm



Testing Laboratories

CRRC product ratings are conducted by Accredited Independent Testing Laboratories

- ISO/IEC 17025 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
- Spectrometer (ASTM E903)
- Pyranometer (ASTM E1918)



CRRC Test Methods

Thermal Emittance

- Emissometer
(ASTM C1371)
- Considering
AZ Technology
Temp/Tesa 2000
(ASTM E408)



Weathering Farms

Product aging conducted at Accredited Test Farms

- ISO 17025 Certified
- Independent from a supplier or roofing product company

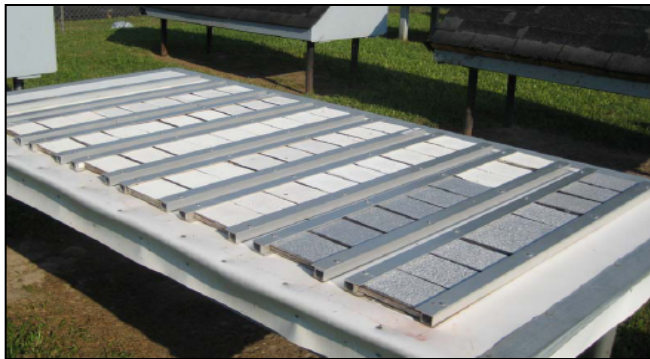


- Products aged for 3 years
- 3 climate zones across the US
- Exposed at steep or low slope angles

Considering Slope



Low



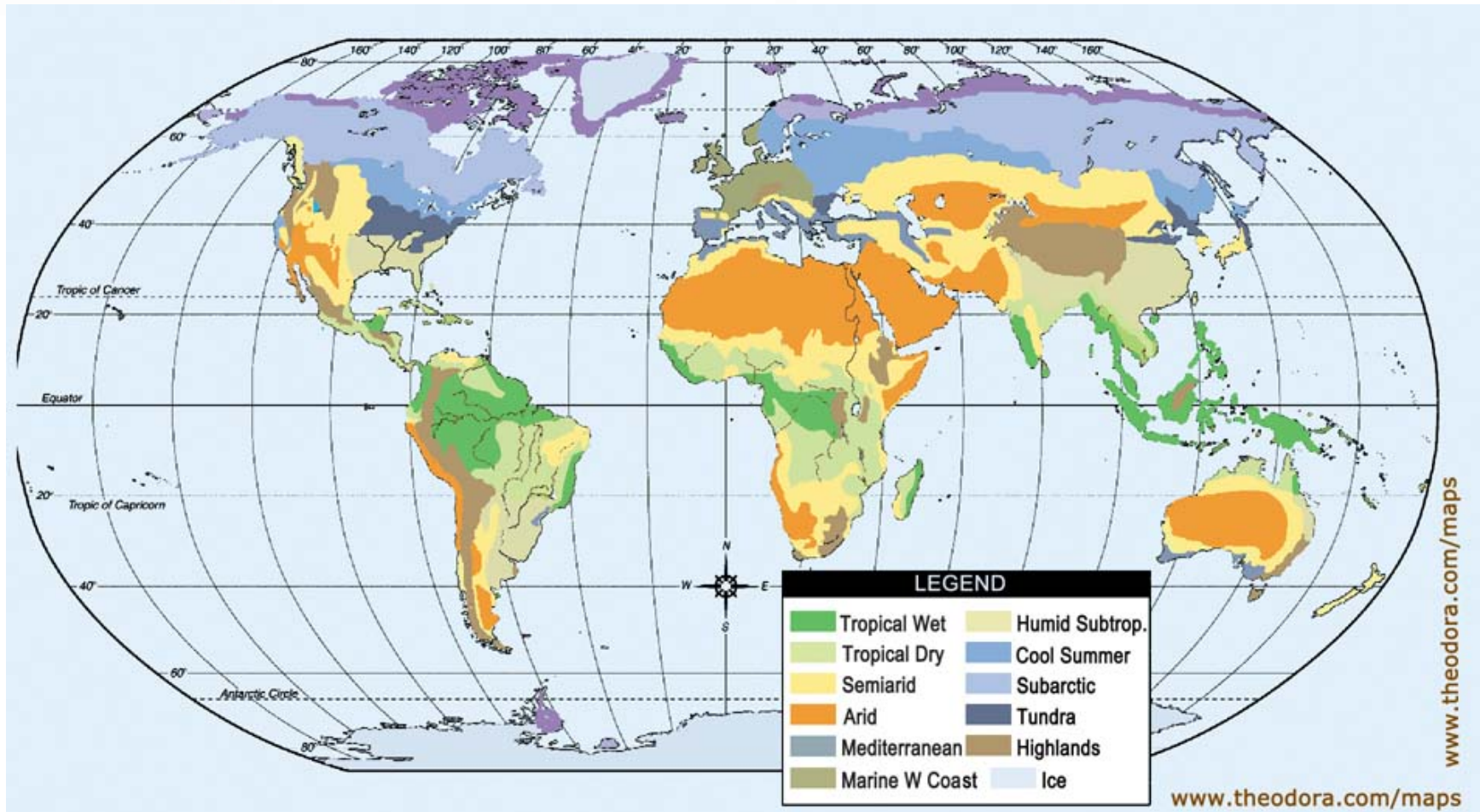
VS



Steep



Considering Climate



www.theodora.com/maps

www.theodora.com/maps

Considering Aging

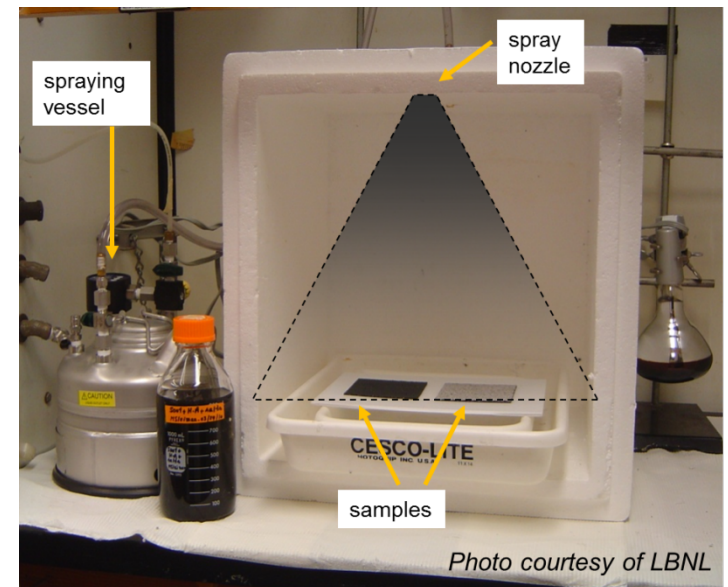
Length of Exposure

1, 3, 5, 10 years

Accelerated Aging Process

Calculated Aging Formula

Aged Reflectance = $(0.2 + 0.7[\text{Initial Reflectance in } 0.2])$





Resources

CRRC-1 Standard

- Dictates how to prepare and test roofing products

http://coolroofs.org/documents/ANSI:CRRC-1_Standard.pdf

CRRC Program Manual

- Dictates protocol for operating the CRRC Rating Program

http://www.coolroofs.org/documents/CRRC-1_Program_Manual_100412.pdf

CRRC Website

- Educational resource on cool roofing information

<http://coolroofs.org/resources/overview>



Contact Us

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