

# Cool Fixes for Hot Cities

## Part 1: San Antonio

August 1, 2018

Hosted by:

U.S. EPA Heat Island Reduction Program





# AN INTRODUCTION TO COOL ROOFS WITH THE CRRC

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Cool Fixes for Hot Cities, Part 1  
August 1, 2018



# CRRC OVERVIEW

- Established in 1998 as 501(c)(3) non-profit
- Third-party rating organization for the roofing industry
- ENERGY STAR® Certification Body
- American National Standards Institute (ANSI) Accredited Standards Developer
  - Currently maintaining ANSI/CRRC S100 (2016)
- International Organization for Standardization (ISO)17065 Accredited Organization





Ratings



Research

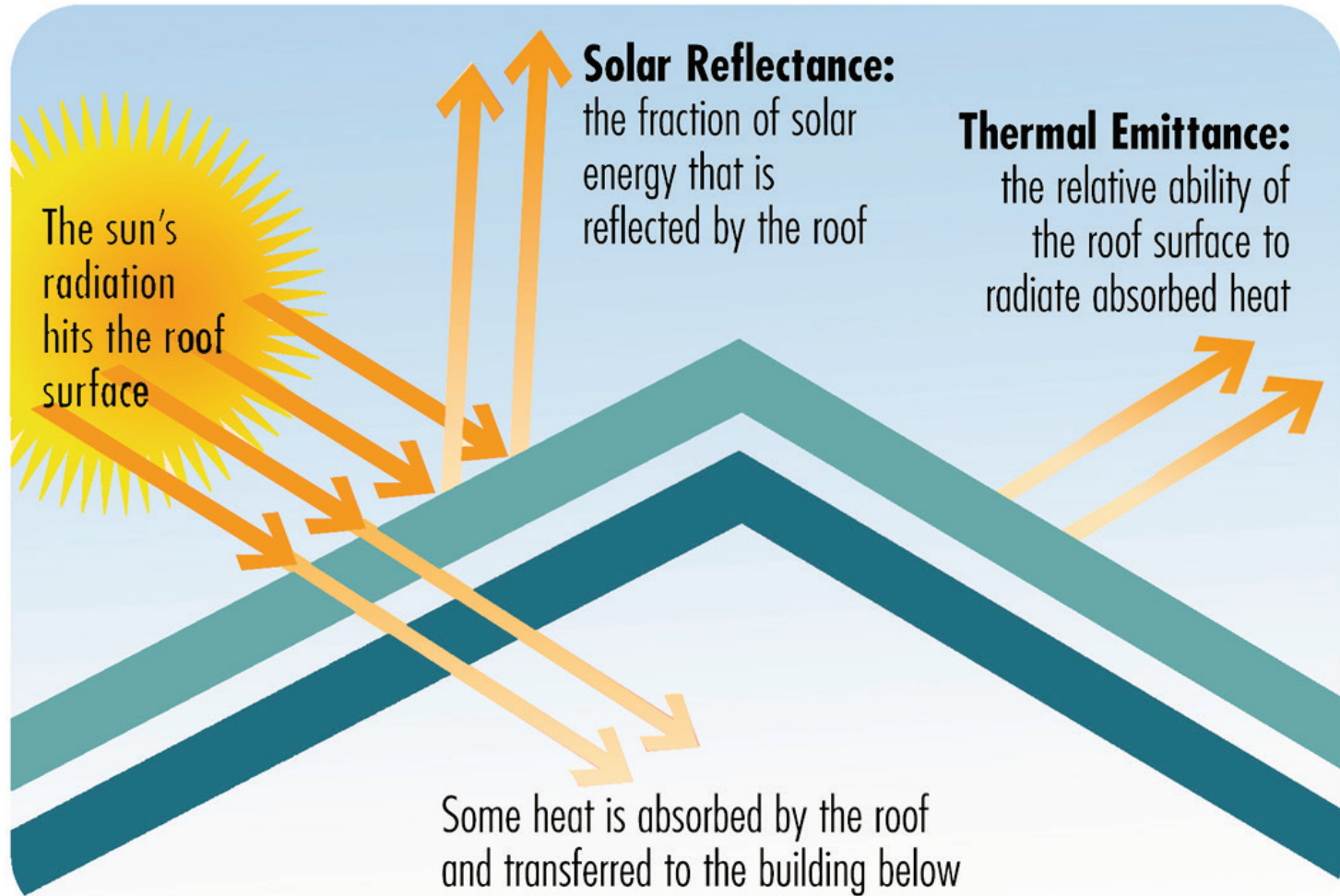


Education



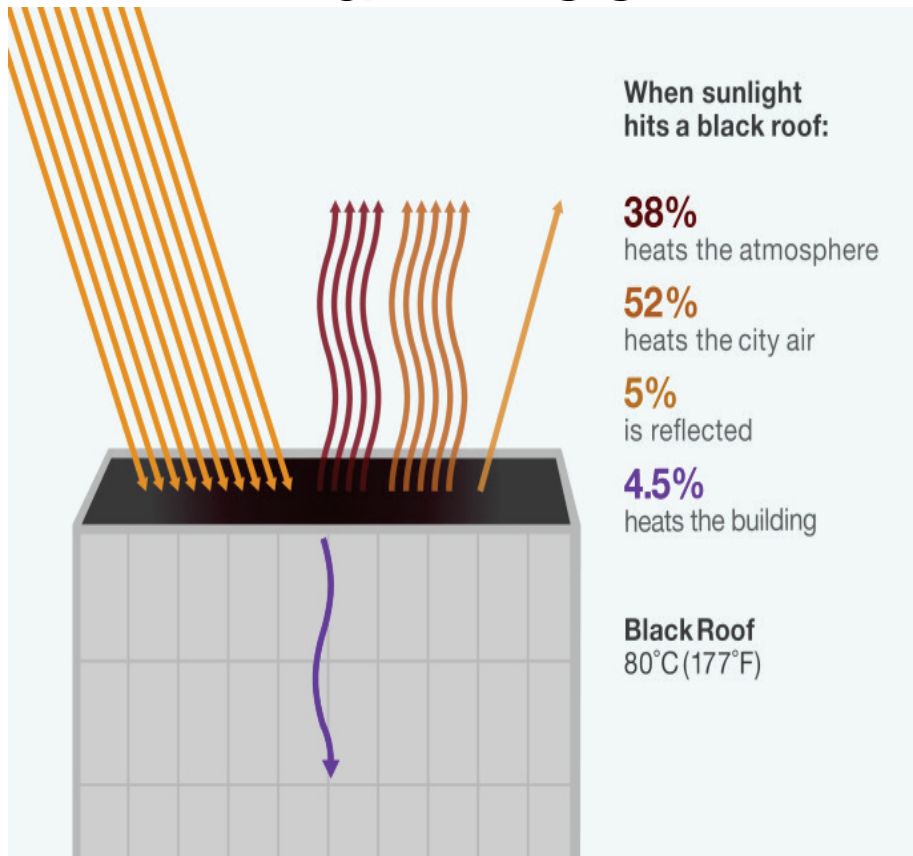
# COOL ROOF BASICS

# COOL ROOFS 101

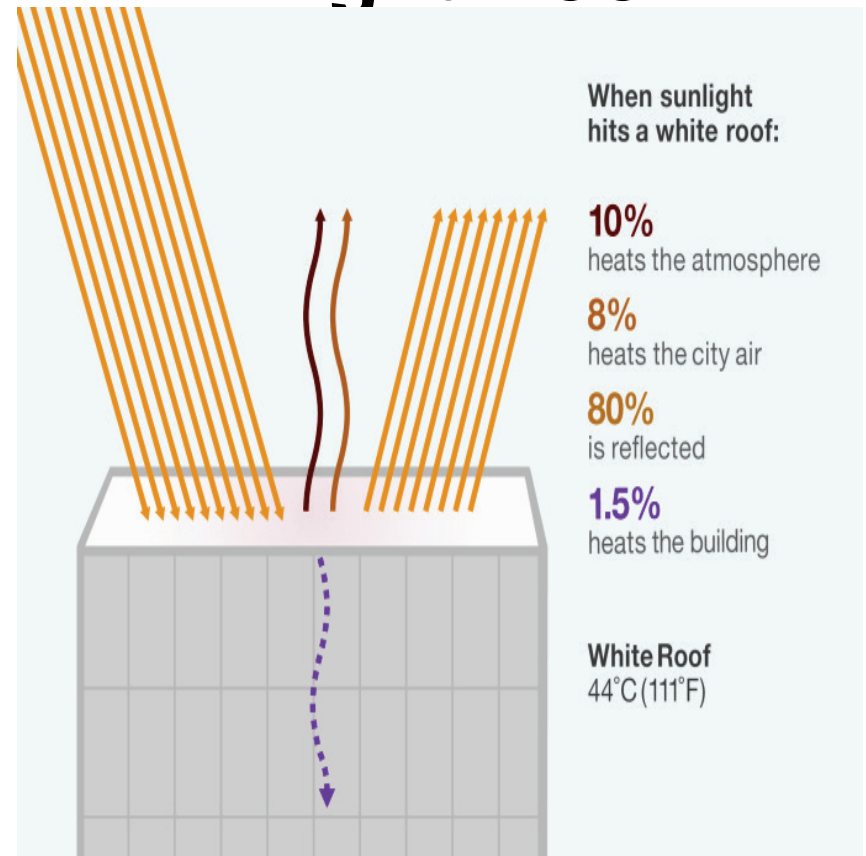


# DARK VS. LIGHT ROOF

## Dark Roof



## Light Roof



# BEFORE & AFTER



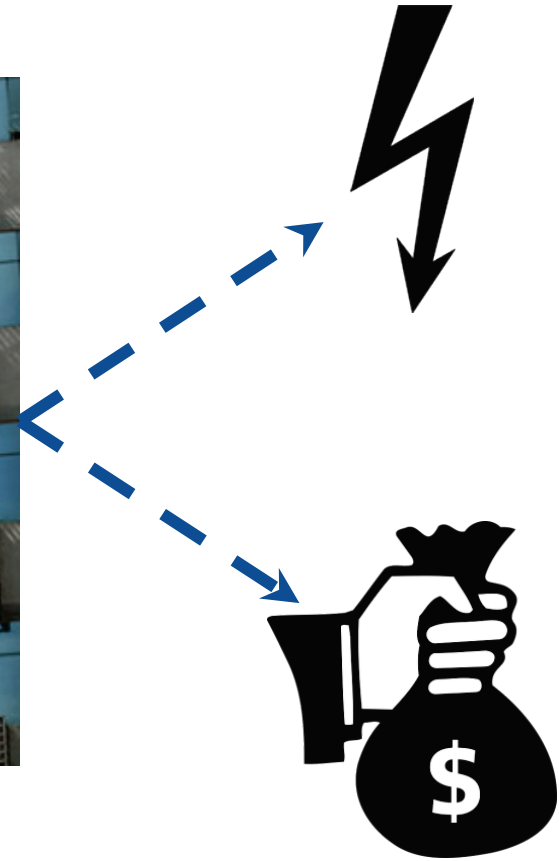
81°C



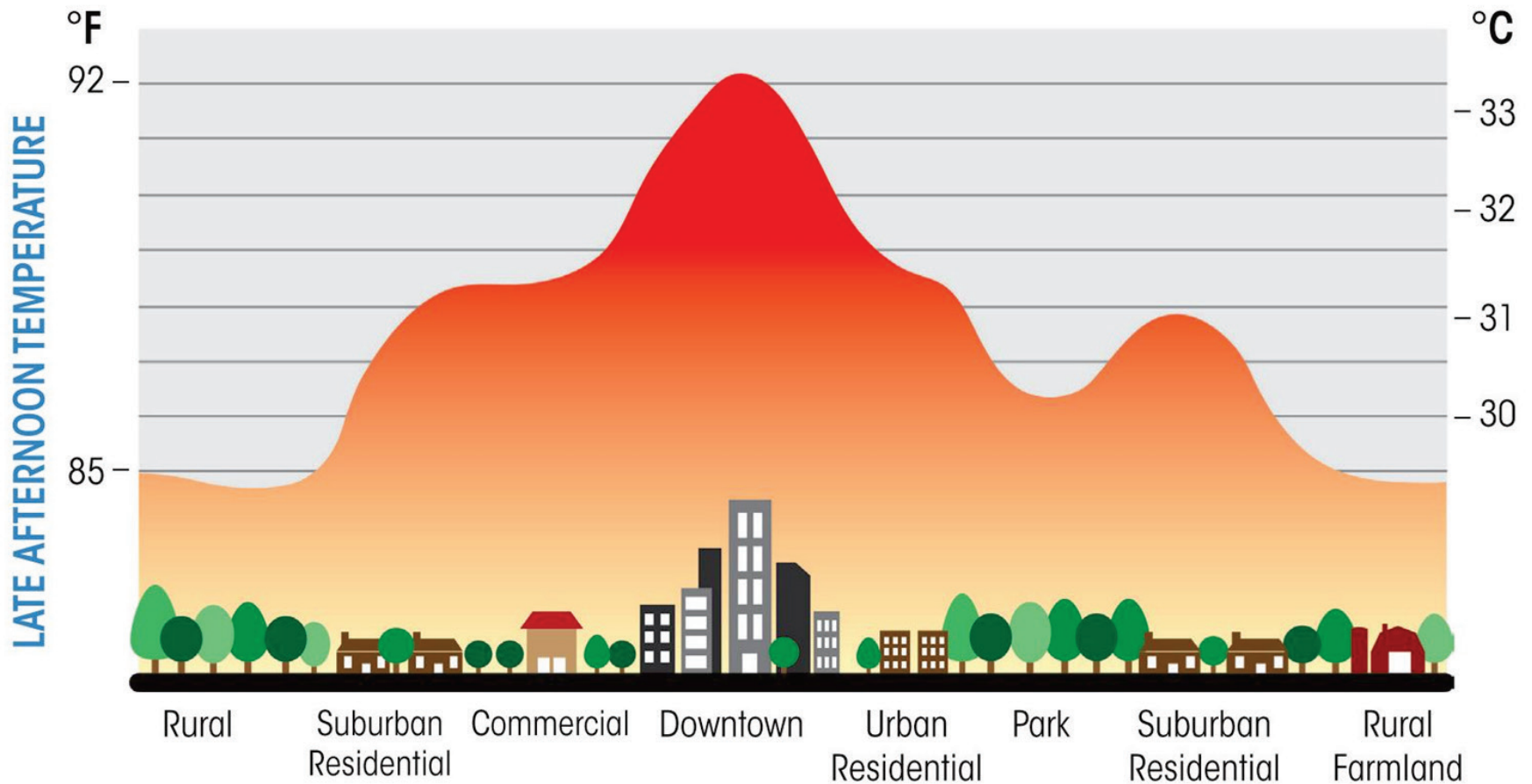
34°C



# COOL ROOF BENEFITS

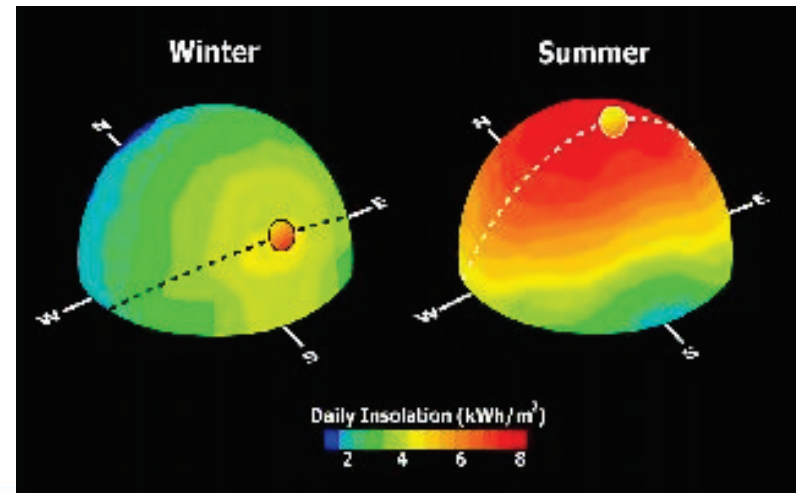


# URBAN HEAT ISLAND

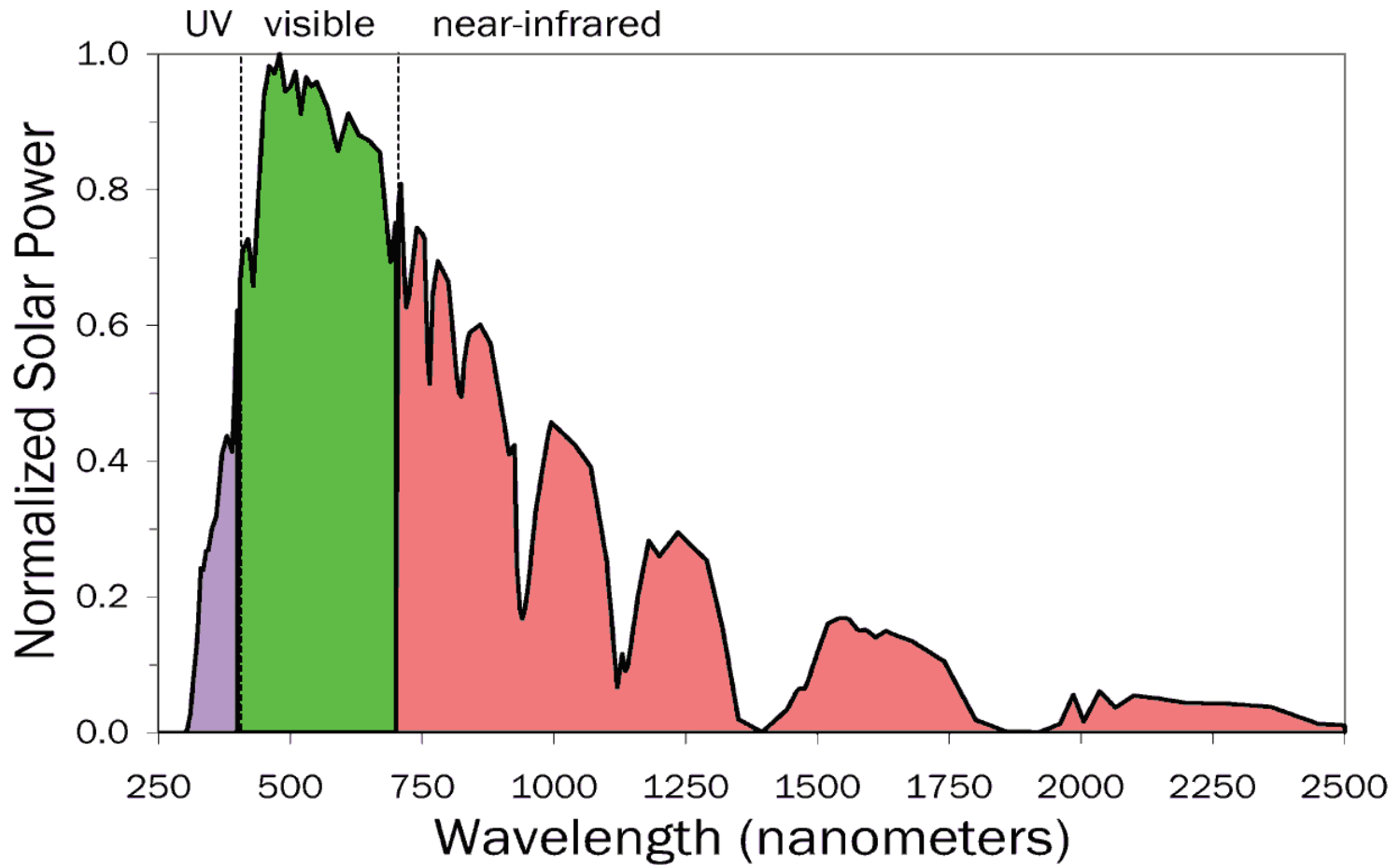


# WINTER HEATING PENALTY?

1. Solar angle is lower in winter
2. Shorter days = less total energy hitting roof
3. Ratio of cloudy to sunny days higher in winter
4. Snow on roof reflects sun's energy

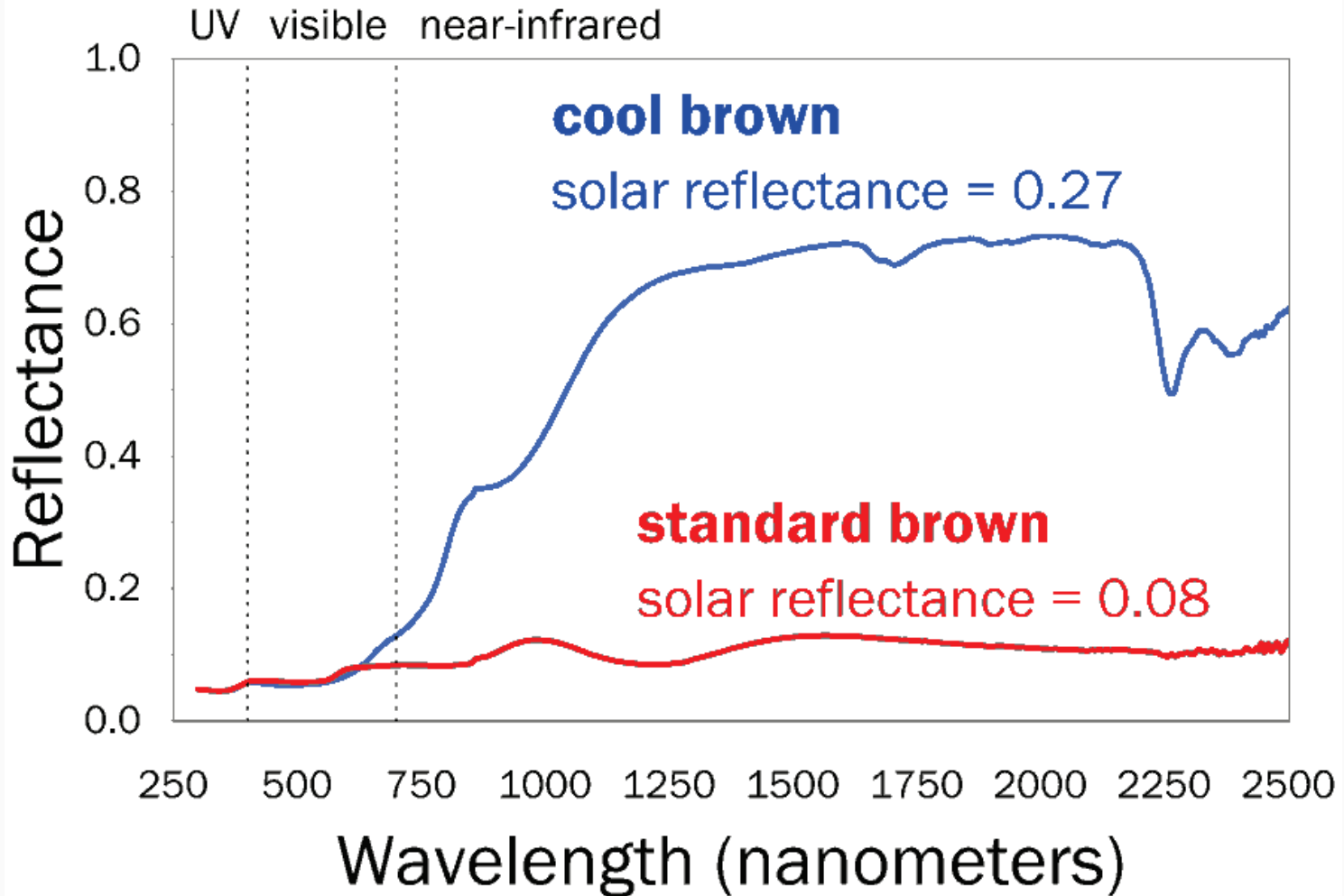


# SOLAR RADIATION





# SELECTIVELY REFLECTIVE PRODUCTS



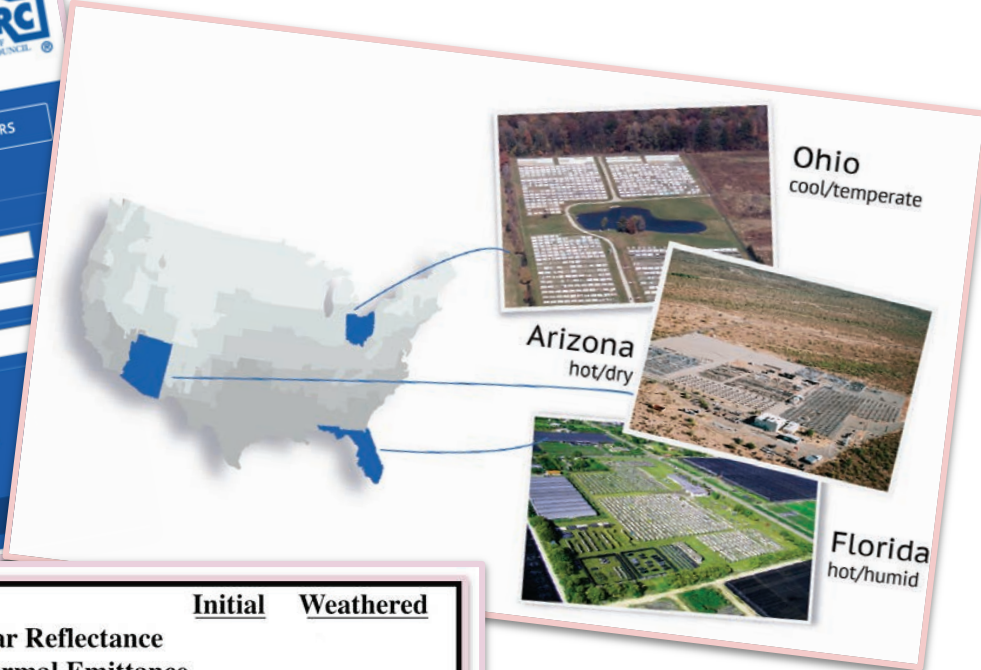
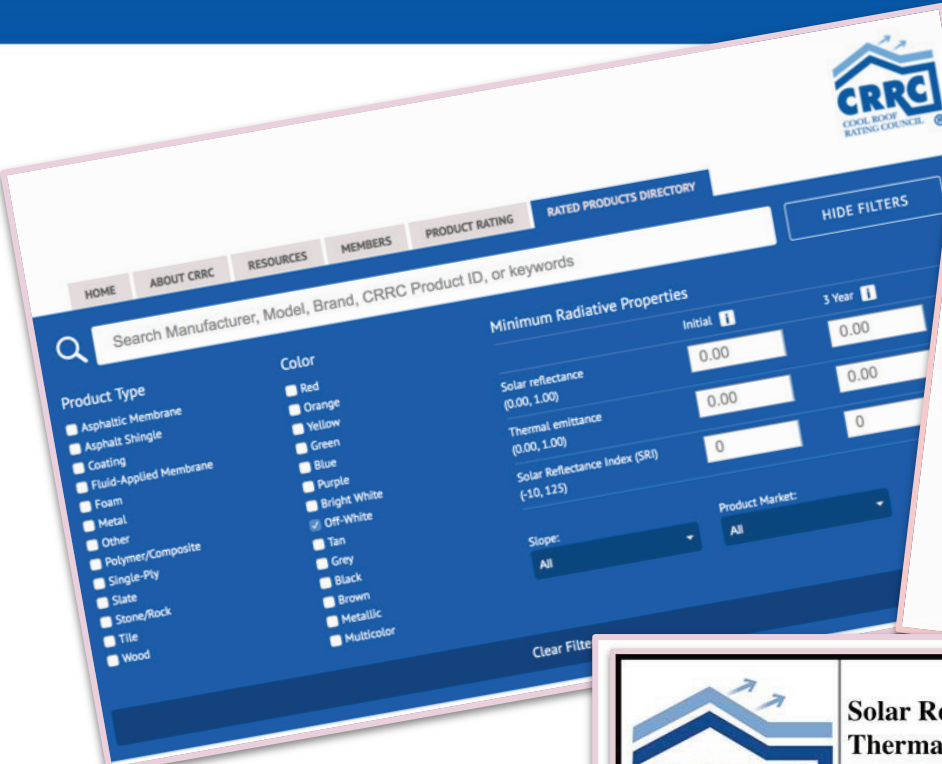


# COOL COLORS

R=0.41	R=0.44	R=0.44	R=0.48	R=0.46	R=0.41
<i>black</i>	<i>blue</i>	<i>gray</i>	<i>terracotta</i>	<i>green</i>	<i>chocolate</i>
R=0.04	R=0.18	R=0.21	R=0.33	R=0.17	R=0.12



# CRRC PRODUCT RATING PROGRAM



	<b>Initial</b>	<b>Weathered</b>
	<b>Solar Reflectance</b>	
	<b>Thermal Emittance</b>	
	Rated Product ID Number	----
Licensed Seller ID Number	----	
Classification		Production Line
<p>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.</p> <p>Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</p>		



# coolroofs.org/directory

Free, online resource

Find and compare roofing products

Determine compliance with building or energy codes

Receive credits for voluntary programs (e.g., LEED)

HOME ABOUT CRRC RESOURCES MEMBERS PRODUCT RATING RATED PRODUCTS DIRECTORY

SEARCH  SHOW FILTERS

2996 SEARCH RESULTS

Please note that the CRRC does not set a minimum definition for "cool"; the CRRC simply lists the measured radiative property values on our Directory. A product's placement on the Directory does not mean that the product is "cool" as defined by any particular code body or program.

\*CRRC Rapid Ratings: These are interim laboratory-aged values that simulate weathered values. These values will be replaced with the measured three-year aged values upon completion of the weathering process. SRI values calculated using Rapid Ratings may change once the aged rating replaces the interim rating.

PRINT EXPORT ALL PRODUCTS

Showing 1-25 of 2996 results 1 2 3 4 5 »

CRRC PROD. ID	MANUFACTURER	BRAND AND MODEL	PRODUCT TYPE	COLOR	SOLAR RELECTANCE		THERMAL EMITTANCE		SRI		MORE INFO
					INITIAL	3 YEAR	INITIAL	3 YEAR	INITIAL	3 YEAR	
1302-0001	Instacoat Premium Products	Instacoat Premium Products 250 HS Silicone	Coating	Bright White	0.89	0.73	0.90	0.88	113	90	+
1300-0001	LJ RoofTile	Concrete roof tile LJRT-001-02-01	Tile	Green	0.25	Pending	0.88	Pending	24	Pending	+
1298-0002	Caplon Systems, Inc.	Cap-Sil 820	Coating	Bright White	0.87	0.73	0.90	0.90	110	90	+
1298-0001	Caplon Systems, Inc.	Cap-Sil Pro 930	Coating	Bright White	0.89	0.73	0.90	0.88	113	90	+
1296-0001	Curacreto, SA de CV	Technoply Technoply SBS FR SP 400 Aluminum Flake	Asphaltic M membrane	Metallic	0.75	Pending	0.19	Pending	74	Pending	+
1294-0001	NovaTuff Coatings	NovaTuff RC-100 Flexible Epoxy Roof Coating White	Coating	Bright White	0.83	Pending	0.89	Pending	104	Pending	+





# DIRECTORY FILTERS



HOME

ABOUT CRRC

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PRODUCT RATING

RATED PRODUCTS DIRECTORY



Search Manufacturer, Model, Brand, CRRC Product ID, or keywords

HIDE FILTERS

### Product Type

- Asphaltic Membrane
- Asphalt Shingle
- Coating
- Fluid-Applied Membrane
- Foam
- Metal
- Other
- Polymer/Composite
- Single-Ply
- Slate
- Stone/Rock
- Tile
- Wood

### Color

- Red
- Orange
- Yellow
- Green
- Blue
- Purple
- Bright White
- Off-White
- Tan
- Grey
- Black
- Brown
- Metallic
- Multicolor

### Minimum Radiative Properties

	Initial <b>i</b>	3 Year <b>i</b>
Solar reflectance (0.00, 1.00)	<input type="text" value="0.00"/>	<input type="text" value="0.00"/>
Thermal emittance (0.00, 1.00)	<input type="text" value="0.00"/>	<input type="text" value="0.00"/>
Solar Reflectance Index (SRI) (-10, 125)	<input type="text" value="0"/>	<input type="text" value="0"/>

Slope:

Product Market:





# FOR MORE INFORMATION

# Go to [coolroofs.org](http://coolroofs.org)

**Home and Building Owners,  
Architects, and Contractors**

*Learn About Cool Roofs and the Cool Roof Rating Council*

**The Cool Roof Rating Council  
Membership and Product Ratings**



**POLICY MAKERS AND CODE OFFICIALS**  
*Learn About **Cool Roofs***





# QUESTIONS?

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# Connect with the Heat Island Program

[Victoria Ludwig](#)

U.S. Environmental Protection Agency

202-343-9291



[Webcast Feedback Form](#)



[Heat Island Program Website](#)



[EPA Heat Island Newsletter Sign-Up](#)

