



CITY OF WILLOWS
Community Development Services
 201 N Lassen Street
 Willows, CA 95988
 (530)934-7041

**2019 RESIDENTIAL ENERGY
 INSTALLATION CERTIFICATE**

Prescriptive Alteration

CF1R-ALT-01-E Reroof

Project Name:			
Project Address:			Climate Zone: 11
Building Type:	Single family	Duplex/Halfplex	Multi-Family Building <i>(with 3 or less habitable stories)</i>

Roofing Replacement (Prescriptive Alteration, Section 150.2(b)11)	
When 50% or more of the roof is being replaced the roofing requirements are triggered. The new roofing area must meet the roofing product "Cool Roof" requirements of 150.2 (b) 11.	
Check applicable alternatives or exceptions below if the roof alteration is exempt from the roofing products "Cool Roof" requirements:	
EXCEPTIONS AND ALTERNATIVES FOR STEEP SLOPE ROOFS (pitch > 2:12):	
<input type="checkbox"/>	Mass roof 25lb/ft ² or greater (uncommon situation such as sod roof); or
<input type="checkbox"/>	Air space 1" from the top of roof deck to bottom of roofing product; or
<input type="checkbox"/>	Roofing product has a profile ratio of rise to width of 1 to 5 for 50 percent or greater of the width of the roof product; or
<input type="checkbox"/>	Ducts already meet Section 150.1(c)9 insulation and duct leakage requirements; or
<input type="checkbox"/>	Roof has R-38 ceiling insulation; or
<input type="checkbox"/>	Roof has a radiant barrier in the attic meeting requirements of 150.1(c)2; or
<input type="checkbox"/>	No ducts are installed in the attic; or
<input type="checkbox"/>	R-2 or greater insulation above the roof deck.
EXCEPTIONS AND ALTERNATIVES FOR LOW SLOPE ROOFS (pitch < 2:12):	
<input type="checkbox"/>	Climate Zones 11 & 12: The cool roof requirements do not apply.
OTHER EXCEPTIONS (Any slope):	
<input type="checkbox"/>	Any areas of roof covered by building- integrated photovoltaic panels or building integrated solar thermal panels (the area of roof not covered by photovoltaic panels would still need to meet any applicable cool roof requirement).
<input type="checkbox"/>	Mass roof 25lb/ft ² or greater (uncommon situation such as sod roof).

Note: If any one of the alternative or exception above is checked the aged Solar Reflectance and Thermal Emittance requirement for roofing products in Section 110.8 are not applicable. Do not fill table below.

CRRC Product ID Number ¹	Roof Slope ²	Product Type ³	Proposed				Minimum required		
			Initial Solar Reflectance ⁴	Aged Solar Reflectance ⁵	Thermal Emittance ⁶	Or SRI ⁷	Aged Solar Reflectance ⁸	Thermal Emittance ⁹	or SRI ¹⁰ (optional)
							0.20	0.75	16
							0.20	0.75	16

1. The CRRC Product ID number is obtained from the cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/results.
2. Roof Pitch: Expressed as 4:12, for example.
3. Product Type: see cool Roof Rating Council's directory. Generally include: single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
4. Proposed Initial Solar Reflectance: Based on the product chosen from the Cool Roof Rating Council's Rated Product Directory. If using default assumption indicate NA since the Aged solar reflectance is available.
5. If CRRC testing for an aged solar reflectance is not available for any roofing products, the aged value shall be derived from the CRRC initial value using the equation $\text{aged} = [0.2 + \beta(\rho_{\text{initial}} - 0.2)]$, where ρ_{initial} = the initial solar reflectance and soiling resistance β is listed by product type below.

Values of Soiling Resistance β is By Product Type:

Product Type	CRRC Product Category	β
Field-Applied Coating	Field-Applied Coating	0.65
Other	Not a Field-Applied Coating	0.70

6. Proposed Thermal Emittance: From the product specifications default value. If using a calculated SRI place the thermal emittance used to calculate SRI.
7. Proposed SRI (Solar Reflectance Index): it is optional to meet either the SRI or the solar reflectance/thermal emittance. The SRI value needs to be calculated from a worksheet or calculator at <http://www.energy.ca.gov/title24/>. The value to be entered under the SRI column above and a copy of the SRI worksheet to attach to the CF1R.
8. Climate Zone 11: Minimum required Aged solar reflectance 0.20
9. Climate Zone 11: Minimum required Thermal emittance 0.75 Or
10. Climate Zone 11: Minimum required SRI 16.

Note: If the cool roofing requirements will be met by a liquid field applied coating, section 110.8 (i) 4 requires the coating be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the manufacturer.

In order to meet the requirements of Sections 140.1, 140.2, 140.3(a)1, 141.0(b)2B, 150.1(c)11, 150.2(b)1H, or 150.2(b)2, of Title 24, the California Code of Regulations (Part 6), a roofing product's thermal emittance and 3-year aged solar reflectance shall be certified and labeled according to Section 10-113 of Title 24, California Administrative Code (Part 1)

Exception: Roofing products that are not certified shall assume the following default values;

Product Type	Aged reflectance	Thermal Emittance
Asphalt shingles	0.08	0.75
Other Roofing Products	0.10	0.75

Note : When a cool roof is required, the installing contractor shall complete and submit the **CF2R-ENV-04-E**.

Declaration Statement

I certify the following under the penalty of perjury, under the laws of the State of California

- The information provided on this certificate of Compliance is true and correct.
- That the energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of 2019 Title 24, Parts 1 and 6 of the California Code of Regulations.
- The building features or system design features identified on this certificate of Compliance are consistent with the information provided on other applicable compliance document, worksheets, calculations, plans, and specifications submitted to the enforcement agency for approval with this building permit application.

Name:	Signature:
Company:	Date:
Address:	License:
City/State/Zip:	Phone: