



**SAN JOAQUIN COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT**

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**PRESCRIPTIVE COOL ROOF and ADDITIONAL INSULATION REQUIREMENTS for
NONRESIDENTIAL, HIGH-RISE RESIDENTIAL and HOTEL/MOTEL REROOFS**

Beginning January 1, 2017 per the 2016 California Energy Code:

When more than 50% or 2000 ft² (whichever is less) of an existing roof is being replaced, cool roofing and added insulation are required. Cool roof products must meet or exceed the values specified in Table A and be tested and labeled by the Cool Roof Rating Council (CRRC). The CRRC's Rated Product Directory can be found at www.coolroofs.org. Based on the information in Tables A&B, please provide the following information for the proposed roof covering.

CRRC Product ID Number	Roof Slope	Aged Solar Reflectance	Thermal Emittance	SRI

TABLE A

Roof Slope	Minimum 3-year aged solar reflectance	Minimum Thermal Emittance	SRI
Nonresidential			
≤2:12	0.63 ¹	0.75	75
>2:12	0.20	0.75	16
High-rise residential, hotels & motels			
≤2:12	NR	NR	NR
>2:12	0.20	0.75	16

¹ Aged solar reflectance less than 0.63 is allowed provided the minimum roof/ceiling insulation specified in Table B is provided.

TABLE B

Aged Solar Reflectance	Required U-factor	Equivalent Insulation Level for Attic Roof		Equivalent Insulation Level for Rafter Roof	
		16 in. OC	24 in. OC	16 in. OC	24 in. OC
0.62-0.60	0.052	R-19	R-19	R-21 ¹	R-21 ¹
0.59-0.55	0.048	R-22	R-19	R-21	R-21
0.54-0.50	0.044	R-22	R-21	R-22	R-22
0.49-0.40	0.041	R-25	R-22	R-25	R-25
0.44-0.40	0.039	R-25	R-25	R-30	R-25
0.39-0.35	0.037	R-30	R-25	R-30	R-30
0.34-0.30	0.035	R-30	R-30	R-30	R-30
0.29-0.25	0.034	R-30	R-30	R-38	R-30

¹ Requires at least one inch of airspace between the insulation and the roof sheathing with a net free ventilation area of not less than 1/150th of the area ventilated.

(CONTINUED ON BACK)

Cool roofing is not required if any of the following apply. Please select any that apply:

- ☐ Cool roofing is not required if the roof area is covered by integrated photovoltaic panels or integrated solar thermal panels; **or**
- ☐ The roof construction has a thermal mass of at least 25 lb/ft² installed over the roof membrane

When roofs are exposed to the roof deck or recover boards, the exposed area must be insulated to a minimum level of R-14.

Based on the roof characteristics there may be exceptions to the added insulation. Please select any that apply:

- ☐ The existing roof has continuous roof deck insulation of at least R-7 **or** attic insulation of at least R-19.
- ☐ If the mechanical equipment is not disconnected and lifted as part of the roof replacement, the added insulation is limited to a height that will provide leave a height of 8 inches from the roof membrane to the top of the base flashing for the mechanical equipment.
- ☐ If adding insulation will reduce the base flashing height to less than 8 inches at penthouse or parapet walls, the insulation added is limited to the maximum insulation thickness that will allow a height of 8 inches (203 mm) from the roofs membrane surface to the top of the base flashing, provided that the conditions in Subsections i through iv apply:
 - i. The penthouse e or parapet walls are finished with an exterior cladding material other than the roofing covering membrane material; **and**
 - ii. The penthouse or parapet walls have exterior cladding material that must be removed to install the new roof covering membrane to maintain a base flashing height of 8 inches; **and**
 - iii. For nonresidential buildings, the ratio of the replaced roof area to the linear dimension affected pen house or parapet wall s hall be less than 25 square feet per linear foot for climate zones 2 and 10 through 16, and less than 100 square feet per linear foot for climate zones I and 3 though 9: **and**
 - iv. For high-rise residential buildings, hotels or motels, the ratio of the replaced roof area to the linear dimension of affected penthouse or parapet walls hall be less than 25 square ' feet per linear foot for all climate zones.
 - v. Tapered insulation may be used which has a thermal resistance less R-14 at the drains and other low points, provided that the thickness of insulation is increased at the high points of the roof so that the average thermal resistance equals or exceeds R-14.

Applicant's Signature

Date