



City of Walnut Creek
Development Review Services
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Policy Bulletin No. PB-039M

Title 24 California Energy Code Requirement to Reroof of Low-Rise MultiFamily Building

Where more than 50%, or more than 2000 square feet, of the existing roof surface is being replaced, recovered or recoated in multifamily building, it shall meet the requirements of section 180.2(b)(1)(A)(i) of California Energy Code and section 180.2(b)(1)(A)(iii) if the roof pitch is less than 2:12 (Low-sloped roofs), or section 180.2(b)(1)(A)(ii) if the roof pitch is not less than 2:12 (Steep-sloped roofs) when prescriptive approach is used.

Note:

1. Cool roof is not required if no more than 50% and no more than 2000 square feet of the existing roof surface of multifamily building is being replaced, recovered or recoated.
2. Multifamily building is any of the following:
 - a. A building of Occupancy Group R-2, other than a hotel/motel building or timeshare property; or
 - b. A building of Occupancy Group R-3 that is a nontransient congregate residence, other than boarding houses of more than 6 guests and alcohol or drug abuse recovery homes of more than 6 guests; or
 - c. A building of Occupancy Group R-4.
3. Low-Rise means 3 stories or less.

Low-sloped roofs (roof pitch is less than 2:12) shall meet the following:

Section 180.2(b)(1)(A)(i):

New roofing products shall have a minimum aged solar reflectance of 0.63 and a minimum thermal emittance of 0.75, or a minimum SRI of 75.

ALTERNATIVE TO SECTION 180.2(b)(1)(A)(i):

- a. The aged solar reflectance can be met by using insulation at the roof deck specified in Table 180.2-A; or
- b. Roof area covered by building integrated photovoltaic panels or building integrated solar thermal panels is not required to meet the minimum requirements for aged solar reflectance, thermal emittance or SRI; or
- c. Roof constructions with a weight of at least 25 lb/ft²(psf) are exempt from the minimum requirements for aged solar reflectance and thermal emittance, or SRI.

Section 180.2(b)(1)(A)(iii):

Roofs shall have R-14 continuous insulation or a U factor of 0.039.

ALTERNATIVE TO SECTION 180.2(b)(1)(A)(iii):

- a. Roof recovers with new R-10 insulation added above deck; or
- b. The area of the roof recoat is not required to be insulated; or
- c. When existing mechanical equipment located on the roof will not be disconnected and lifted, insulation added may be limited to the greater of R-10 or the maximum installed thickness that will allow the distance between the height of the roof membrane surface to the top of the base flashing to remain in accordance with the manufacturer's instructions; or
- d. At the drains and other low points, tapered insulation with a thermal resistance less than R-14 may be used, provided that insulation thickness is increased at the high points of the roof so that the average thermal resistance equals or exceeds R-14

Steep-sloped roofs (roof pitch is no less than 2:12) shall meet the following Section 180.2(b)(1)(A)(ii):

New roofing products shall have an aged solar reflectance equal to or greater than 0.20 and a thermal emittance equal or greater than 0.75, or a minimum SRI of 16.


ALTERNATIVE TO SECTION 180.2(b)(1)(A)(ii):

- a. Buildings with ceiling assemblies with a U-factor lower than or equal to 0.025 or that are insulated with at least R-38 ceiling insulation; or
- b. Buildings with a radiant barrier in the attic, where the radiant barrier is not installed directly above spaced sheathing, meeting the requirements of Section 170.2(a)1C; or
- c. Buildings that have no ducts in the attic; or
- d. Buildings with R-2 or greater continuous insulation above or below the roof deck; or
- e. Roof area covered by building integrated photovoltaic panels or building integrated solar thermal panels is not required to meet minimum requirements for aged solar reflectance, thermal emittance or SRI; or
- f. Roof constructions with a weight of at least 25 lb/ft²(psf) are exempt from minimum requirements for aged solar reflectance and thermal emittance, or SRI.

The Certificate of Compliance CEC-LMCC-ENV-01-E form, or the Alternative Certificate of Compliance in this document, must be completed and submitted with the permit application. Forms must be signed by the documentation Author and the Building Designer (i.e. Contractor or Home Owner).

Roofing products that are used for compliance with the energy standards are required to be tested and labeled by the Cool Roof Rating Council (CRRC).

The roofing products manufacturer must have its roofing product tested for solar reflectance and thermal emittance, and be listed in the CRRC's Rated Product Directory (see <http://www.coolroofs.org>) and be labeled according to CRRC procedures. Below is an example of an approved CRRC product label.

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

Attached are Alternative Certificate of Compliance form for your use. Or you can visit the California Energy Commissions webpage at: www.energy.ca.gov for more information.

PRESCRIPTIVE CERTIFICATE OF COMPLIANCE: LOW-RISE MULTIFAMILY RESIDENTIAL STEEP-SLOPED RE-ROOF (2022)			<i>Alternative Certificate of Compliance</i>
Project Address:	Jurisdiction: CITY OF WALNUT CREEK	Climate Zone: 12	Roof pitch:

STEEP SLOPED (PITCH IS 2:12 OR GREATER) LOW-RISE MULTIFAMILY RESIDENTIAL ROOFING PRODUCTS (COOL ROOFS)

When more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less, being altered, the cool roof requirements are triggered. Any areas of roof covered by building integrated photovoltaic panels and solar thermal panels (the area of roof not covered by panels would still need to meet any applicable cool roof requirements). Additionally, there are many alternatives/exceptions when a cool roof is required.

Check applicable alternative or exception below if the roof alteration is exempt from the roofing product "Cool Roof" requirements:

- Cool Roof Exceptions:
- Area to be re-roofed is no more than 50% of total roof area, and no more than 2000 sq ft (square feet):
Area to be re-roofed = _____ sq ft Total roof area = _____ sq ft
- Cool Roof Alternatives:
- Building has ceiling assemblies with a maximum U-factor of 0.025 or R-38 insulation; or
 - Building has a radiant barrier not installed directly above spaced sheathing meeting 170.2(a)1C; or
 - Building has no ducts in the attic; or
 - Building has R-2 or greater insulation above the roof deck; or
 - Building roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels are exempt from the above Cool Roof requirements; or
 - Building roof constructions with a weight of at least 25 pounds per square feet(psf) are exempt from the above Cool Roof Requirements.

NOTE: If any one of the alternatives or exception is checked the Aged Solar Reflectance and Thermal Emittance requirements for roofing products are not applicable. Do not fill table below.

COOL ROOF IS REQUIRED if none of the boxes above are checked. Roofing material to be installed must meet the applicable requirements listed below. Aged solar reflectance and thermal emittance are tested performance values for roofing products that are available from the manufacturer. The product must have a CRRC label to be shown to the building inspector.

- 3 year Aged Solar Reflectance, minimum 0.20
- AND Thermal Emittance, minimum 0.75
- OR- Solar Reflective Index (SRI), minimum 16

CRRC Product ID Number ¹	Product Type ²	R-Value Deck Insulation ³	PROPOSED			SRI ⁷ (optional)
			Initial Solar Reflectance ⁴	Aged Solar Reflectance ⁵	Thermal Emittance ⁶	

1. The CRRC Product ID Number is obtained from the Cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/results. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.
2. Product Type: See Cool Roof Rating Council's directory. Generally product types include single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
3. R-value Deck Insulation: If one of the exceptions selected includes adding roof deck insulation, indicate the R-value of insulation.
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 N/A since the Aged Solar Reflectance is available.
5. Proposed Aged Solar Reflectance: Value is from the Cool Roof Rating Council's Rated Product Directory. If the aged value is not available, calculate the calculated Aged Solar Reflectance using the Solar Reflectance index (SRI) Calculation worksheet located on the California Energy Commission website or the aging equation $\rho_{aged} = [0.2 + \beta(\rho_{initial} - 0.2)]$, where $\rho_{initial}$ = the initial solar reflectance and soiling resistance, β , is listed by product type below

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 specification default value. If using a calculated SRI, place the thermal emittance used to calculate SRI.
7. Proposed SRI: It is optional to meet either the SRI but if chosen to do so, use the Solar Reflectance Index (SRI) Calculation Worksheet found on the California Energy Commission website <http://www.energy.ca.gov/title24/>.

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

See reverse for Declaration Statement that must be signed

Declaration Statement

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. 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 Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Name:

Signature:

Company:

Date:

Address:

CSLB License:

City/State/Zip:

Phone:

For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.

PRESCRIPTIVE CERTIFICATE OF COMPLIANCE: LOW-RISE MULTIFAMILY RESIDENTIAL LOW-SLOPED RE-ROOF (2022)			<i>Alternative Certificate of Compliance</i>
Project Address:	Jurisdiction: CITY OF WALNUT CREEK	Climate Zone: 12	Roof Pitch:

LOW-SLOPED (PITCH LESS THAN 2:12) LOW-RISE MULTIFAMILY RESIDENTIAL ROOFING PRODUCTS (COOL ROOFS)

When more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less, being altered, the cool roof requirements are triggered. Any areas of roof covered by building integrated photovoltaic panels and solar thermal panels (the area of roof not covered by panels would still need to meet any applicable cool roof requirements). Additionally, there are many alternatives/exceptions when a cool roof is required.

Check applicable alternative or exception below if the roof alteration is exempt from the roofing product "Cool Roof" requirements:

Cool Roof Exceptions:
 Area to be re-roofed is no more than 50% of total roof area, and no more than 2000 sq ft (square feet):
 Area to be re-roofed = _____ sq ft Total roof area = _____ sq ft

Cool Roof Alternatives:
 The aged solar reflectance _____ is provided at the roof deck with proposed deck continuous insulation R _____ per Table 180.2-A; or
 Building roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels are exempt from the above Cool Roof requirements; or
 Building roof constructions with a weight of at least 25 pounds per square feet (psf) are exempt from the above Cool Roof Requirements.

NOTE: If any one of the alternatives or exception is checked the Aged Solar Reflectance and Thermal Emittance requirements for roofing products are not applicable. Do not fill table below.

COOL ROOF IS REQUIRED if none of the boxes above are checked. Roofing material to be installed must meet the applicable requirements listed below. Aged solar reflectance and thermal emittance are tested performance values for roofing products that are available from the manufacturer. The product must have a CRRC label to be shown to the building inspector.

3 year Aged Solar Reflectance, minimum 0.63,
 AND Thermal Emittance, minimum 0.75
 -OR- Solar Reflective Index (SRI), minimum 75

CRRC Product ID Number ¹	Product Type ²	R-Value Deck Insulation ³	PROPOSED			
			Initial Solar Reflectance ⁴	Aged Solar Reflectance ⁵	Thermal Emittance ⁶	SRI ⁷ (optional)

- The CRRC Product ID Number is obtained from the Cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/results. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.
- Product Type: See Cool Roof Rating Council's directory. Generally product types include single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
- R-value Deck Insulation: If one of the exceptions selected includes adding roof deck insulation, indicate the R-value of insulation.
- Proposed Initial Solar reflectance: Based on the product chosen from the Cool Roof Rating Council's Rated Product Directory. If using default assumption, indicate N/A since the Aged Solar Reflectance is available.
- Proposed Aged Solar Reflectance: Value is from the Cool Roof Rating Council's Rated Product Directory. If the aged value is not available, calculate the calculated Aged Solar Reflectance using the Solar Reflectance index (SRI) Calculation worksheet located on the California Energy Commission website or the aging equation $\rho_{aged} = [0.2 + \beta(\rho_{initial} - 0.2)]$, where $\rho_{initial}$ = the initial solar reflectance and soiling resistance, β , is listed by product type below.
- Proposed Thermal Emittance: From the product specification default value. If using a calculated SRI, place the thermal emittance used to calculate SRI.
- Proposed SRI: It is optional to meet either the SRI but if chosen to do so, use the Solar Reflectance Index (SRI) Calculation Worksheet found on the California Energy Commission website <http://www.energy.ca.gov/title24/>.

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

TABLE 180.2-A AGED SOLAR REFLECTANCE INSULATION TRADE-OFF TABLE

MINIMUM AGED SOLAR REFLECTANCE	ROOF DECK CONTINUOUS INSULATION R-VALUE (Climate Zones 6—7)	ROOF DECK CONTINUOUS INSULATION R-VALUE (Climate Zones 2, 4 and 8—15)
0.60	2	16
0.55	4	18
0.50	6	20
0.45	8	22
No requirement	10	24

LOW-SLOPED (PITCH LESS THAN 2:12) LOW-RISE MULTIFAMILY RESIDENTIAL ROOFING INSULATION

When more than 50 percent of the roof area or more than 2,000 square feet of roof, whichever is less, being altered, the roof insulation requirements are triggered. Additionally, there are many alternatives/exceptions when a roof insulation is required.

Check applicable alternative or exception below if the roof alteration is exempt from the roof insulation requirements:

Roof Insulation Exceptions:

Area to be re-roofed is less than 50% of total roof area, and no more than 2000 sq ft (square feet):

Area to be re-roofed = _____ sq ft Total roof area = _____ sq ft

Roof Insulation Alternatives:

- Roof recovers with new R-10 insulation added above deck; or
- When existing mechanical equipment located on the roof will not be disconnected and lifted, insulation added may be limited to the greater of R-10 or the maximum installed thickness that will allow the distance between the height of the roof membrane surface to the top of the base flashing to remain in accordance with the manufacturer's instructions; or
- At the drains and other low points, tapered insulation with a thermal resistance less than R-14 may be used, provided that insulation thickness is increased at the high points of the roof so that the average thermal resistance equals or exceeds R-14; or
- The area of the roof re-coat is not required to be insulated.

ROOF INSULATION IS REQUIRED if none of the boxes above are checked. Roofs shall be insulated to the levels specified below:

- Proposed continuous roof insulation R14 minimum or Proposed roof assembly U factor of 0.039 maximum
 (Please provide additional document to justify U factor per Appendix JA4 if this option is selected)

Declaration Statement

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. 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 Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

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

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