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*"Partnering to Improve Consistency & Customer Service"*

## COMMERCIAL "COOL ROOF" & INSULATION REQUIREMENTS

When more than 2,000 ft<sup>2</sup> OR >50% of the roof (whichever is less) is being replaced, recovered or recoated on the conditioned areas of a nonresidential, hotel/motel & high-rise multifamily building, a rated "Cool Roof" product and insulation (when applicable) shall be installed in accordance with the following requirements for Climate Zone 11:

**LOW-SLOPED (< 2:12) NONRESIDENTIAL BUILDING:**

- Complete and submit the California Energy Code Form 2022-NRCC-ENV-E at time of permit application submittal giving Cool Roof product information. (Form can be completed via [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant at no cost, or using 3<sup>rd</sup> party software such as Energy Pro)
- Roofing product:**
  - Nonresidential shall have a minimum solar aged reflectance of 0.63 and a minimum thermal emittance of 0.75, or a minimum SRI of 75, OR
    - The roof area is covered by building integrated photovoltaic panels and solar thermal panels, OR
    - The roof construction has a thermal mass over the roof membrane with a weight of at least 25 lb/ft<sup>2</sup>, OR
    - The aged solar reflectance is met along with installing supplemental roof/ceiling insulation per Table 141.0-B (shown below):

Aged Solar Reflectance	U-factor
0.62-0.60	0.035
0.59-0.55	0.034
0.54-0.50	0.031
0.49-0.45	0.029
0.44-0.40	0.028
0.39-0.35	0.026
0.34-0.30	0.025
0.29-0.25	0.024

- Hotel/Motel guest room roofing (non-guest room roofing to meet nonresidential requirements) shall have** a minimum solar aged reflectance of 0.55 and a minimum thermal emittance of 0.75, or a minimum SRI of 64, OR
  - The roof area is covered by building integrated photovoltaic panels and solar thermal panels, OR
  - The roof construction has a thermal mass over the roof membrane with a weight of at least 25 lb/ft<sup>2</sup>
- Additionally, insulation is required** when recovering or replacing the roofing (not required for recoating) over conditioned space with insulation in direct contact with a roof or drywall ceiling meeting the requirements of the table shown below:

<b>Recovering or Replacing Roofing Material for both Nonresidential and Hotel/Motel:</b> Insulation to meet or beat overall weighted average R-value or U-factor when insulation depth is varied	
<b>Minimum Continuous Insulation R-Value</b>	<b>Maximum U-factor of Roof Assembly with ≥R-10 to be Provided at Roof Deck</b>
R-23	0.037

- OR, when **recovering** an existing roof and providing ≥R-10 continuous insulation above the roof deck (this exception does not apply to replaced roofs)
- AND/OR when existing mechanical equipment is not disconnected and lifted, then either ≥R-10 or maximum insulation thickness allowed per manufacturer's instructions for minimum base flashing heights must be installed
- Complete and provide the California Energy Code Form 2022-NRCI-ENV-E to be onsite at time of final roof inspection. (Form can be completed at [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant)

**STEEP-SLOPED (>2:12) NONRESIDENTIAL BUILDING:**

- **Complete and submit the California Energy Code Form 2022-NRCC-ENV-E** at time of permit application submittal giving Cool Roof product information. (Form can be completed via [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant at no cost, or using 3<sup>rd</sup> party software such as Energy Pro)
- **Roofing product** shall have a minimum solar aged reflectance of 0.25 and a minimum thermal emittance of 0.80, or a minimum SRI of 23, OR
  - The roof area is covered by building integrated photovoltaic panels and solar thermal panels
- **Complete and provide the California Energy Code Form 2022-NRCI-ENV-E** to be onsite at time of final roof inspection. (Form can be completed at [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant)

**LOW-SLOPED (< 2:12) HIGH-RISE MULTIFAMILY BUILDING**

- **Complete and submit the California Energy Code Form 2022-NRCC-ENV-E** at time of permit application submittal giving Cool Roof product information. (Form can be completed via [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant at no cost, or using 3<sup>rd</sup> party software such as Energy Pro)
- **Roofing product:**
  - **High-Rise multifamily shall have** a minimum solar aged reflectance of 0.63 and a minimum thermal emittance of 0.75, or a minimum SRI of 75, OR
    - The roof area is covered by building integrated photovoltaic panels and solar thermal panels, OR
    - The roof construction has a thermal mass over the roof membrane with a weight of at least 25 lb/ft<sup>2</sup>, OR
    - The aged solar reflectance is met along with installing supplemental roof/ceiling insulation per Table 180.2-A (*shown below*):

Minimum Aged Solar Reflectance	Roof Deck Continuous Insulation R-value
0.60	16
0.55	18
0.50	20
0.45	22
No requirement	24

- **Additionally, insulation is required** when recovering or replacing the roofing (not required for recoating) over conditioned space with insulation in direct contact with a roof or drywall ceiling meeting the requirements of the table shown below:

Recovering or Replacing Roofing Material for High-Rise Multifamily: Insulation to meet or beat overall weighted average R-value or U-factor when insulation depth is varied	
Minimum Continuous Insulation R-Value	Maximum U-factor of Roof Assembly
R-14	0.039

- OR, when **recovering** an existing roof and providing  $\geq R-10$  continuous insulation above the roof deck (this exception does not apply to replaced roofs)
  - AND/OR when existing mechanical equipment is not disconnected and lifted, then either  $\geq R-10$  or maximum insulation thickness allowed per manufacturer’s instructions for minimum base flashing heights must be installed
- **Complete and provide the California Energy Code Form 2022-NRCI-ENV-E** to be onsite at time of final roof inspection. (Form can be completed at [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant)

**STEEP-SLOPED (>2:12) HIGH-RISE MULTIFAMILY BUILDING:**

- **Complete and submit the California Energy Code Form 2022-NRCC-ENV-E** at time of permit application submittal giving Cool Roof product information. (Form can be completed via [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant at no cost, or using 3<sup>rd</sup> party software such as Energy Pro)
- Roofing product shall have a minimum solar aged reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16, OR
  - The roof area is covered by building integrated photovoltaic panels and solar thermal panels
- **Complete and provide the California Energy Code Form 2022-NRCI-ENV-E** to be onsite at time of final roof inspection. (Form can be completed at [www.energycodeace.com](http://www.energycodeace.com) using the Virtual Compliance Assistant)