** COOL ROOF REQUIREMENTS**

**FOR REROOFING NONRESIDENTIAL BUILDINGS IN CLIMATE ZONE 10**

The new 2022 California Energy Code effective Jan 1, 2023 requires cool roof when using the prescriptive requirements for reroofing nonresidential buildings. Roofing products with high solar reflectance and thermal emittance are referred to as “cool roof”. **Solar Reflectance** refers to a material’s ability to reflect the sun’s solar energy back into the atmosphere. **Thermal emittance** provides a means of quantifying how much of the absorbed heat is rejected for a given material. Both properties are measured from 0 to 1 and the higher the value, the “cooler” the roof. To be considered a cool roof the roofing products must be tested and labeled by the Cool Roof Rating Council (CRRC). If one wishes not to install a cool roof, then they must meet the 2022 California Energy Code using the performance method where tradeoff can be done.

Where **more than 50%** **of the roof** **or more than 2,000 square feet of roof, whichever is less**, is being replaced, recovered, or recoated, this altered roof area shall meet the cool roof requirements [§ 141.0(b)2B]:

* **FOR LOW-SLOPED ROOFS (< 2:12)** [per § 141.0(b)2Bi and 140.3(a)1A]:

|  |  |  |
| --- | --- | --- |
| Roof Slope | Aged Solar Reflectance AND Thermal Emittance | OR Solar Reflectance Index (SRI) |
| Low-sloped (< 2 :12) | ≥ 0.63 ≥ 0.75 | ≥ 75 |

*Exceptions:*

1. An aged solar reflectance < 0.63 is allowed provided the maximum roof/ceiling U-factor in 2022 California Energy Code Table 141.0-B *(“Roof/Ceiling Insulation Tradeoff For Low-Sloped Aged Solar Reflectance”)* is not exceeded; or
2. The roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels; or
3. Roof constructions with a weight of at least 25 lbs/ft2.
4. For low-sloped roofs, the area of the **roof recover or roof replacement** **shall be insulated** to the level specified in 2022 California Energy Code Table 141.0-C *(“Insulation Requirements For Roof Alterations”)* requirements i.e., R-23 minimum continuous insulation and maximum U-factor = 0.037 with at least R-10 above deck [per § 141.0(b)2Bii].

*Exceptions:*

1. **Roof recovers** with new R-10 insulation added above deck do not need to be insulated to the level specified in 2022 California Energy Code Table 141.0-C *(“Insulation Requirements For Roof Alterations”).* This exception does not apply to roof replacements.
2. When existing mechanical equipment located on the roof will not be disconnected and lifted, insulation added is the greater of R-10 or the maximum installed thickness that will allow the distance between the height of the roof membrane surface and the top of the base flashing to remain in accordance with the manufacturer’s instructions.
3. At the drains and other low points, tapered insulation with a thermal resistance less than that prescribed in Table 141.0-C may be used, provided that insulation thickness is increased at the high points of the roof so that the average thermal resistance equal of exceeds the value specified in Table 141.0-C.
4. The area of **roof recoat** is not required to be insulated. **Roof recoating** needs to comply only with the requirement U-factor = 0.037 with at least R-10 above deck, and it does not need to comply with the R-23 continuous insulation requirement.
* **FOR STEEP-SLOPED ROOFS (≥ 2:12)** [per § 141.0(b)2Bi and 140.3(a)1A]:

|  |  |  |
| --- | --- | --- |
| Roof Slope | Aged Solar Reflectance AND Thermal Emittance | OR Solar Reflectance Index (SRI) |
| Steep-sloped (≥ 2 :12) | ≥ 0.25 ≥ 0.80 | ≥ 23 |

*Exceptions:*

1. An aged solar reflectance < 0.63 is allowed provided the maximum roof/ceiling U-factor in 2022 California Energy Code Table 141.0-B *(“Roof/Ceiling Insulation Tradeoff For Low-Sloped Aged Solar Reflectance”)* is not exceeded; or
2. The roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels; or
3. Roof constructions with a weight of at least 25 lbs/ft2.

Notes:

Altered steep-sloped roofs do not have any insulation requirements.

DEFINITIONS [per §100.1]:

* **Roof Recover** is the process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering.
* **Roof Replacement** is the process of removing the existing roof covering, replacing any damaged substrate and installing a new roof covering.
* **Roof Recoat** is not defined in the Energy Code, but typical industry use of “recoat” is when a new layer is applied to the outer surface of the existing roofing material and the existing roofing material is not being replaced and recovered [per 2022 Ace Fact Sheet Nonresidential Envelope page 7 of 33] .