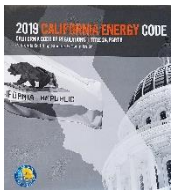

COOL ROOF REQUIREMENTS FOR LOW-RISE RESIDENTIAL BUILDINGS FOR CLIMATE ZONE 10

The new 2019 Building Energy Efficiency Standards effective Jan 1, 2020 requires cool roof when using the prescriptive component package in new residential construction, addition or alteration. 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. Cool roofs are a prescriptive requirement for steep-sloped roof application on residential buildings for climate zone 10. There are numerous materials in a wide range of colors to meet cool roof requirements such as tile, metal, asphalt, and coating material that may meet cool roof requirements. 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 2019 Energy Standards using the performance method where tradeoffs can be done.

The residential roofing products requirement for the prescriptive component package for City of Ontario climate zone 10 is:

1. For low-sloped roof (< 2:12 slope): Cool roof not required
2. For steep-sloped roof (≥ 2:12 slope):
    - Minimum 3-year aged solar reflectance = 0.20, and
    - Minimum thermal emittance = 0.75

      OR
    - Minimum solar reflectance index (SRI) = 16

Exceptions:

a) The roof area with building integrated photovoltaic panels and building integrated solar thermal panels are exempt.

b) Roof constructions that have thermal mass over the roof membrane with a weight of at least 25 lb/ft^2 are exempt.

Replacements of existing roofing (reroofing), including adding a new surface layer on top of the existing exterior surface, shall comply with above cool roof requirements where more than 50% of the roof is being replaced.

Alternatives:

a) Air-space of 1.0 inch (25 mm) is provided between the top of the roof deck to the bottom of the roofing product; or

b) The installed roofing product has a profile ratio of rise to width of 1 to 5 for 50 percent or greater of the width of the roofing product; or

c) Existing ducts in the attic are insulated and sealed according to Section 150.1(c)9; or

d) Buildings with at least R-38 ceiling insulation; or

e) Buildings with a radiant barrier in the attic meeting the requirements of Section 150.1(c)2; or

f) Buildings that have no ducts in the attic; or

g) In Climate Zones 10, R-2 or greater insulation above the roof deck.