

2005 BUILDING ENERGY EFFICIENCY STANDARDS

Section 118 - Mandatory Requirements for Cool Roofs

(i) **Mandatory Requirements for Cool Roofs.** In order to qualify for compliance credit as a cool roof or meet the requirements of Section 143 (a) 1 or 149 (b) 1B, a cool roof shall be certified and labeled according to the requirements of Section 10-113 and meet conditions 1 or 2 and, for liquid applied roofing products, 3 below.

1. Any roofing product with an initial thermal emittance greater than or equal to 0.75 when tested in accordance with CRRC-1 shall have a minimum initial solar reflectance of 0.70 when tested in accordance with CRRC-1.

EXCEPTION to Section 118 (i) 1: For low-rise residential buildings, concrete tile (as defined in ASTM C55) and clay tile (as defined in ASTM C1167) roofing products shall have a minimum initial thermal emittance of 0.75 and a minimum initial solar reflectance of 0.40 when tested in accordance with CRRC-1.

2. Any roofing product with a minimum initial thermal emittance $\epsilon_{\text{initial}}$ less than 0.75 when tested in accordance with CRRC-1, including but not limited to roof products with metallic surfaces, shall have a minimum initial solar reflectance of $0.70 + 0.34 * (0.75 - \epsilon_{\text{initial}})$ when tested in accordance with CRRC-1.
3. Liquid applied roof coatings applied in the field as the top surface of a roof covering shall be applied at a minimum dry mil thickness of 20 mils across the entire roof surface, and meet the minimum performance requirements listed in TABLE 118-C.

EXCEPTION 1 to Section 118 (i) 3: Aluminum-pigmented asphalt roofing coatings shall meet the requirements of ASTM D2824 or ASTM D6848 and shall be installed as specified by ASTM D3805.

EXCEPTION 2 to Section 118 (i) 3: Cement-based roof coatings shall be applied at a minimum dry mil thickness of 30 mils when installed over a capsheet surface, 40 mils when installed over a metal surface, and 200 mils when installed over a rock or gravel surface. Cement-based roof coatings shall contain a minimum of 20% cement, and shall meet the requirements of ASTM D822.

Section 149 - Additions, alterations, and repairs to existing buildings that will be nonresidential, high-rise residential, and hotel/motel occupancies

- B. Replacements, recovering or recoating of the exterior surface of existing nonresidential low-sloped roofs shall meet Subsection i or ii where more than fifty percent of the roof or more than 2,000 square feet of roof, whichever is less, is being replaced, recovered or recoated.

- i. The roof shall meet the requirements of either 118 (i) 1 or 118 (i) 2; and for liquid applied roof coatings, Section 118 (i) 3 or
- ii. The building envelope, which has a roof replacement subject to this requirement, shall comply with Section 143 (b), where
 - a. the standard building has a solar reflectance which meets the requirements of Section 143 (a) 1 and the other terms in Equation 143-D correspond to the existing building at the time of the application of the permit, and
 - b. the proposed building has either:
 - (1.) the solar reflectance of the replacement roof product, as certified and labeled according to the requirements of Section 10-113 and the roof product meets the requirements of Section 118 (i) 3, or
 - (2.) a solar reflectance of 0.10 if the product has not been certified and labeled and/or does not meet the requirements of Section 118 (i) 3, and
 - (3.) has the other improvements to the building envelope necessary to comply.

EXCEPTION to Section 149 (b) 1B: Roof recoverings allowed by the CBC are not required to meet Section 149 (b) 1B when all of the following occur:

- 1. The existing roof has a rock or gravel surface, and
- 2. The new roof has a rock or gravel surface, and
- 3. There is not removal of existing layers of roof coverings of more than fifty percent of the roof or more than 2,000 square feet of roof, whichever is less; and
- 4. There is not recoating with a liquid applied coating; and
- 5. There is no installation of a recover board, rigid insulation or other rigid, smooth substrate to separate and protect the new roof recovering from the existing roof.

Contractor: Please have roof packaging available for building inspector to view.

I acknowledge receipt of the above mandatory requirements for cool roofs:

Contractor's Signature: _____