

GG164-14

408.3.1.2, 408.3, 408.3.1.1, 408.3.1

Proponent: Mike Fischer, representing The Asphalt Roofing Manufacturers Association
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Delete without substitution:

~~**408.3.1.2 Solar reflectance index.** Roof products shall be permitted to use a solar reflectance index (SRI) where the calculated value is in compliance with Table 408.3.1 values for minimum aged SRI. The SRI value shall be determined using ASTM E 1980 with a convection coefficient of 2.1 Btu/h-ft² (12 W/m² × k) based on three-year aged roof samples tested in accordance with the test methods in Section 408.3.1.1.~~

Revise as follows:

408.3 Roof surfaces. Not less than 75 percent of the roof surfaces of buildings and covered parking located in climate zones 1 through 3, as established in the *International Energy Conservation Code*, shall be a roof complying with Section 408.3.1; shall be covered with a vegetative roof complying with Section 408.3.12; or a combination of these requirements. The provisions of this section shall apply to roofs of structures providing shade to parking in accordance with Section 408.2.2 where located in climate zones 1 through 6.

Exception: Portions of roof surfaces occupied by the following shall be permitted to be deducted from the roof surface area required to comply with this section:

1. Solar thermal collectors.
2. Solar photovoltaic systems.
3. Roof penetrations and associated equipment.
4. Portions of the roof used to capture heat for building energy technologies.
5. Rooftop decks and rooftop walkways.
6. Roof coverings that comply with Section 605.2.

Delete without substitution:

~~**408.3.1.1 Roof products testing.** Roof products shall be tested for a minimum three-year aged solar reflectance in accordance with ASTM E 1918, ASTM C 1549 or the CRRG-1 Standard and thermal emittance in accordance with ASTM C 1371, ASTM E 408 or the CRRG-1 Standard, and shall comply with the minimum values in Table 408.3.1.~~

Revise as follows:

~~**408.3.1 605.2 Roof coverings—solar reflectance and thermal emittance.** Where roof coverings are used for compliance with Section 408.3, Roof coverings shall comply with Section 408.3.1.1 or 408.3.1.2. The values for solar reflectance and thermal emittance shall be determined by an independent laboratory accredited by a nationally recognized accreditation program. Roof products shall be listed and labeled and certified by the manufacturer demonstrating compliance. the roof reflectance requirements of the *International Energy Conservation Code*.~~

Delete without substitution:

**TABLE 408.3.1
REFLECTANCE AND EMITTANCE**

ROOF SLOPE	MINIMUM AGED SOLAR REFLECTANCE	MINIMUM AGED THERMAL EMITTANCE	MINIMUM AGED SRI
2:12 or less	0.55	0.75	60
Greater than 2:12	0.30	0.75	25

Reason: The site development requirements in Chapter 4 for roofing are flawed; they include a vegetative requirement trade-off for reflective roofing with a threshold of 75% of the building roof area. This disconnect creates a conflict with the IECC roof reflectance requirements. Roofing reflectance carries much greater benefits for reducing building loads in cooling-dominated regions. The science of heat island effects cannot properly assess how minute changes in roof reflectance changes surrounding building temperatures. The margin of error in computer models used to calculate such effects makes it difficult if not impossible to properly assess the role of reflective roofing. Furthermore, vegetative roofing can provide benefits to stormwater management in jurisdictions where stormwater and sanitary wastewater are processed in the same systems.

This proposal relocates the roofing reflectance requirement to Chapter 6 where it belongs. Cool roofs provide a greater and more tangible benefit to building owners when energy efficiency is the primary design motivation. Other proposals will address the design values; this sets the required level at the IECC baseline. Other proposals will address other site benefits of vegetative roofing.

Cost Impact: Will not increase the cost of construction.

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