

## CHAPTER 15A ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

*Add new Section 1511 to the Building Code to read as follows:*

### SECTION 1511A COOL ROOF REQUIREMENTS

**1511.1 General.** Roof coverings for roof slopes less than or equal to two units vertical in 12 units horizontal (17-percent slope or less) for buildings and covered parking shall conform to this section. A minimum of 75% of the entire roof surface not used for roof penetrations, *renewable energy power systems* (e.g. photovoltaics or solar thermal collectors), harvesting systems for rainwater to be used on-site, or green roofing systems shall be covered with products that comply with one or more of the following:

- (a) have a minimum initial *SRI* of 78.
- (b) comply with the criteria for the USEPA's Energy Star Program Requirements for Roof

Products – Eligibility Criteria.

#### Exception

1. *Building projects* where an annual energy analysis simulation demonstrates that the total annual building energy cost and total annual CO<sub>2</sub>e, as calculated in accordance with ASHRAE Standard 189.1 7.5.2 and 7.5.3, are both 2% less for the proposed roof than with a roof with an initial *SRI* of 78.
2. Roofs used to shade or cover parking and roofs over semi-heated spaces or used as outdoor recreation space by the occupants of the building shall be permitted to be either landscaped or have a minimum initial *SRI* of 29. A default *SRI* value of 35 for new concrete without added color pigment is allowed to be used in lieu of measurements.
3. Terraces on setbacks comprising less than 25% of the area of the largest floor plate in the building.
4. Roofs ballasted at a minimum weight of 17 pounds per square foot with limestone or a ballast with a solar reflectance of at least 30% shall be permitted to comprise part or all of the 75% required area coverage.
5. Green roofs shall be permitted to comprise part or all of the 75 percent required area coverage.

**1511.2 Solar Reflective Index.** The *solar reflective index (SRI)* shall be calculated in accordance with ASTM E1980 for medium-speed wind conditions. The *SRI* shall be based upon solar reflectance as measured in accordance with ASTM E1918 or ASTM C1549, and the thermal emittance as measured in accordance with ASTM E408 or ASTM C1371. For roofing products, the values for solar reflectance and thermal emittance shall be determined by a laboratory accredited by a nationally recognized accreditation organization, such as the Cool Roof Rating Council CRRC-1 Product Rating Program, and shall be labeled and certified by the manufacture