

Public Review Draft

Proposed Addendum e to Standard 189.1-2023

Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

First Public Review (May, 2024)
(Draft Shows Proposed Changes to Current Standard)

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Foreword

The intent of this addendum is to clean up and remove redundant language. Applicable climate zones remain unchanged.

The addendum expands the coverage of cool roof surfaces from 75% to 100%. This is consistent with Standard 90.1 provisions for cool roofs over conditioned space. This section already includes exceptions for roof areas covered by renewable energy systems, roof decks, and walkways. HVAC systems and skylights are added to the exceptions.

A new exception is added for roofs shaded by adjacent structures similar to language used in Standard 90.1. However, the energy efficiency exception is deleted since this section addresses heat island mitigation, not energy efficiency.

This addendum also changes the italicized “*roof*” as defined in Standard 90.1 to unitalicized “roof” because the common term is more applicable to heat island mitigation regardless of whether the space below the roof is conditioned or unconditioned. Stone ballasted roofs remains as a viable roof system in climate zones 4A and 4B.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~strikethrough~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum e to 189.1-2023

Modify Section 5.3.5.3 as follows:

5.3.5.3 Roofs. ~~This section applies to the building and covered parking.~~ All ~~roof~~ Roof surfaces for *building projects* in Climate Zones 0, 1, 2, 3, 4A, and 4B. A minimum of 75% of the ~~roof~~ roof surface area shall be covered with products that

- a. have a minimum three-year-aged *SRI* of 64 in accordance with Section 5.3.5.4 for *roofs* with a slope of less than 2:12.
- b. have a minimum three-year-aged *SRI* of 25 in accordance with Section 5.3.5.4 for *roofs* with a slope 2:12 or greater.

~~The area occupied by one or more of the following shall be excluded from the calculation to determine the roof surface area required to comply with this section:~~

- ~~a. Roof penetrations and associated equipment.~~
- ~~b. On-site renewable energy systems, including photovoltaics, solar thermal energy collectors, and required access around the panels or collectors.~~
- ~~c. Portions of the roof used to capture heat for building energy technologies.~~
- ~~d. Roof decks and rooftop walkways.~~
- ~~e. Vegetated terrace and roofing systems complying with Section 5.3.5.5.~~

Exceptions to 5.3.5.3:

1. Roofs where not less than 75% of the roof surface is shaded during the peak sun angle on the summer solstice (June 21 in the northern hemisphere) by permanent components or features of the building, including adjacent buildings or structures.
- ~~1. Building projects where an annual energy analysis simulation demonstrates that the total annual building energy cost and total annual CO₂e, as calculated in accordance with Section 7.6.2, are both a minimum of 2% less for the proposed roof than for a roof material complying with the *SRI* requirements of Section 5.3.5.3.~~
2. Existing buildings in Climate Zones 4A and 4B undergoing alteration, repair, relocation, or a change in occupancy roof replacement.
3. Roofs ~~Roofs with exposed concrete used as a parking deck, used to shade or cover parking, and roofs over semiheated spaces,~~ provided that they 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 instead of measurements.
4. Stone ballasted roofs in Climate Zones 4A and 4B ~~having a stone ballast of not less than 17 lb/ft² (83 kg/m²) or a paver ballast of not less than 23 lb/ft² (112 kg/m²).~~
5. Portions of the roof covered by permanently installed objects such as HVAC systems, solar energy systems, decks, and walkways.
6. Vegetated terrace and roofing systems complying with Section 5.3.5.5.