| v3 - LEED 2009

Heat island effect - roof

SSc7.2 | Possible 1 point

Glossary

Intent

To reduce heat islands[1] to minimize impacts on microclimates and human and wildlife habitats.

Requirements

Option 1

Use roofing materials with a solar reflectance index (SRI)[2] equal to or greater than the values in the table below for a minimum of 75% of the roof surface.

Roofing materials having a lower SIR value than those listed below ay be used if the weighted rooftop SRI average meets the following:

Area Roof Meeting Minimum SRI / Total Roof Area	x	SRI of Installed Roof / Required SRI	≥	75%

Implement a maintenance program that ensures all SRI surfaces are cleaned at least every 2 years to maintain good reflectance.

OR

Option 2

Install and maintain a vegetated roof that covers at least 50% of the roof area.

OR

Option 3

Install high-albedo and vegetated roof surfaces that, in combination, meet the following criteria:

Area Roof Meeting Minimum SRI / 0.75	+	Area of Vegetated Roof / 0.5	≥	Total Roof Area

Roof Type	Slope	SRI
Low-sloped roof	≤ 2:12	78
Steep-sloped roof	> 2:12	29

Alternatively, a weighted approach may be used to calculate compliance for multiple materials:

[1] Heat islands are defined as thermal gradient differences between developed and underdeveloped areas.
[2] The solar reflectance index (SRI) is a measure of the constructed surface's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standardblack surface (reflectance 0.05, emittance 0.90) is 0 and a standard white surface (reflectance 0.80, emittance 0.90) is 100. to calculate the SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980. Reflectance is measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E408 or ASTM C 1371.
[3] For the purposes of this credit, under cover parking is defined as parking underground, under desk, under roof, or under a building.

Credit substitution available

You may use the LEED v4 version of this credit on v2009 projects. For more information check out this article.

Address
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Within the United States:
1-800-795-1747

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1-202-742-3792

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