

LEED ND: Plan | v4 - LEED v4

Heat island reduction

Possible 1 point

1 result in All .

Intent

To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

Requirements

Option 1. Nonroof (1 point)

Use any combination of the following strategies for 50% of the nonroof site paving (including roads, sidewalks, courtyards, parking lots, parking structures, and driveways).

- Use the existing plant material or install plants that provide shade over the paving areas on the site within 10 years of plant material installation.
- Install and plant planters, either at grade or raised. Plant material cannot include artificial turf.
- Provide shade with structures covered by energy generation systems, such as solar thermal collectors , photovoltaics, and wind turbines, that produce energy used to offset some nonrenewable resource use.
- Provide shade with architectural devices or structures that have a three-year aged [solar reflectance \(SR\)](#) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation,
- Provide shade with vegetated structures.
- Use paving materials with a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation.
- Use an [open-grid pavement system](#) (at least 50% unbound).

OR

Option 2. High-reflectance and vegetated roofs (1 point)

Use roofing materials that have an SRI equal to or greater than the values in Table 1. Meet the three-year aged SRI value (if three-year aged value information is not available, use materials that meet the initial SRI value) for a minimum of 75% of the roof area of all new buildings within the project, or install a vegetated ("green") roof for at least 75% of the roof area of all new buildings within the project. Combinations of SRI-compliant and vegetated roofs can be used, provided they satisfy the equation in Option 3.

Table 1. Minimum solar reflectance index value, by roof slope

	Slope	Initial SRI OR	3-year aged SRI
Low-sloped roof	≤ 2:12	82	64
Steep-sloped roof	> 2:12	39	32

OR

Option 3. Mixed nonroof and roof measures (1 point)

Use any of the strategies listed under Options 1 and 2 that in combination meet the following criterion:

$$\frac{\text{Area of Nonroof Measures}}{0.5} + \frac{\text{Area of High-Reflectance Roof}}{0.75} + \frac{\text{Area of Vegetated Roof}}{0.75} \geq \frac{\text{Total Site Paving Area}}{\text{Total Roof Area}}$$

Alternatively, an SRI and SR weighted average approach may be used to calculate compliance.