



LEED BD+C: Core and Shell | v4 - LEED v4

Heat island reduction

Possible 2 points

Glossary

Intent

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

Requirements

Choose one of the following options:

Option 1. nonroof and roof (2 points except Healthcare, 1 point Healthcare)

Meet the following criterion:

Area of Nonroof Measures	+	Area of High-Reflectance Roof	+	Area of Vegetated Roof	≥	Total Site Paving Area	+	Total Roof Area
0.5		0.75		0.75				

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

Use any combination of the following strategies.

Nonroof measures

- Use the existing plant material or install plants that provide shade over paving areas (including playgrounds) on the site within 10 years of planting. Install vegetated planters. Plants must be in place at the time of occupancy permit and cannot include artificial turf.
- Provide shade with structures covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines.
- 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).

High-reflectance roof

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.

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

Vegetated roof

Install a vegetated roof.

OR

Option 2. parking under cover (1 point)

Place a minimum of 75% of parking spaces under cover. Any roof used to shade or cover parking must (1) have a three-year aged SRI of at least 32 (if three-year aged value information is not available, use materials with an initial SRI of at least 39 at installation), (2) be a vegetated roof, or (3) be covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines.