

# Heat island reduction

Possible 1 point

## 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:

| 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.