TECHO—BLOC

Inspiring Artscapes

Solar reflectance & LEED credits

Solar reflectance index (SRI) is a value that incorporates solar reflectance (SR) and thermal emittance in a single measure. The SRI is an indicator of how well a surface reflects (reflectance) and releases absorbed solar radiation (emittance). The lower the SRI, the hotter a material is likely to become in sunlight. Dark pavement surfaces tend to have lower solar reflectance values than lighter pavement surfaces. Thus, cautious selection of pavement surface colors can help reduce heat islands which cause urban areas to stay warmer and contributes to air pollution and increased energy consumption. Nowadays, it is not uncommon for some municipalities in North America to require the use of paving materials with an initial SRI of 29.

Furthermore, for LEED certification, there are credit requirements for Sustainable Sites Credit: Heat Island Reduction.

The following are some key elements for Nonroof and Parking under cover applications (see LEED v4.1 for thorough information):

Nonroof (2 points except Healthcare, 1-point Healthcare): Use of paving materials with an initial SR value of at least 0.33.

Parking under cover (1 point): Any roof used to shade or cover parking must 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).

Techo-Bloc light-colored paving units contribute to the reduction of heat island effects and to obtainment of LEED points. The table summarizes the SR and SRI of Techo-Bloc paving units.

TECHO-BLOC TEXTURES AND COLORS SOLAR REFLECTANCE (SR) AND SOLAR REFLECTANCE INDEX (SRI)

FINISH	SOLAR REFLECTANCE[1]	SOLAR REFLECTANCE INDEX[2]
Pure White		
HD² Smooth	0.57	67
HD² Polished	0.50	58
HD² Granitex	0.55	60
Mineral White		
Polished (Terrazzo)	0.58	70
Salt & Pepper		
HD² Smooth	0.53	62
HD² Granitex	0.51	60
Moonrock Grey		
Polished (Terrazzo)	0.28	29
Natural Stone Grey		
Sandstone	0.39	43
Silver Granite		
HD² Smooth	0.40	45
Greyed Nickel		
HD² Smooth	0.37	41
Smooth	0.34	37
HD² Polished	0.37	41
HD² Granitex	0.39	43
HD² Slate (drycast)	0.34	38
Victoria		
HD² Slate (wetcast)	0.31	33
Ivory		
Klean-Bloc Brushed Travertine (wetcast)	0.40	45
Klean-Bloc Slate (wetcast)	0.42	48
Beige Cream		
HD² Smooth	0.38	42
Smooth	0.33	36
HD² Polished	0.38	42
HD² Granitex	0.33	36
Stardust Beige		
Polished (Terrazzo)	0.50	58

FINISH	SOLAR REFLECTANCE[1]	SOLAR REFLECTANCE INDEX[2]
Caffè Crema		
HD² Smooth	0.36	38
Natural Stone Beige		
Sandstone	0.47	54
Hazelnut Brandy		
Klean-Bloc Slate (wetcast)	0.37	41
Rock Garden Brown		
Klean-Bloc Slate (wetcast)	0.21	20
Chestnut Brown		
HD² Smooth	0.21	20
Smooth	0.26	27
HD² Polished	0.22	22
HD² Granitex	0.28	29
HD² Slate (drycast)	0.19	18
Slate	0.23	25
Sandlewood		
Slate	0.21	23
Smoked Pine		
Klean-Bloc Wood (wetcast)	0.22	22
Sepia Brown		
Klean-Bloc Slate (wetcast)	0.14	11
Chocolate Brown		
Smooth	0.10	6
Merlot		
HD² Smooth	0.15	13
Beveled	0.14	11
Slate	0.09	5
Bordeaux Red		
Klean-Bloc Slate (wetcast)	0.09	5

FINISH	SOLAR REFLECTANCE[1]	SOLAR REFLECTANCE INDEX[2]
Champlain Grey		
HD² Smooth	0.25	25
Smooth	0.25	25
HD² Slate (drycast)	0.23	23
Slate	0.23	24
Shale Grey		
HD² Smooth	0.21	19
Smooth	0.25	26
HD² Polished	0.17	15
HD² Granitex	0.29	31
HD² Slate (drycast)	0.14	11
Slate	0.24	26
Grey		
HD² Smooth	0.30	31
Smooth	0.25	25
HD² Polished	0.35	39
HD² Granitex	0.37	42
Riviera		
HD² Slate (wetcast)	0.18	16
Klean Bloc Brushed Travertine (wetcast)	0.16	14
Klean Bloc Wood (wetcast)	0.17	15
Azzuro		
Klean-Bloc Slate (wetcast)	0.15	12
Meteor Black		
Polished (Terrazzo)	0.16	13
Charcoal		
HD² Smooth	0.14	11
HD² Polished	0.21	20
HD² Granitex	0.20	19
Midnight Grey		
Klean-Bloc Slate (wetcast)	0.09	5
Onyx Black		
HD² Smooth	0.09	6
Smooth	0.09	6
HD² Polished	0.13	10
HD² Granitex	0.16	14
Klean-Bloc Slate (wetcast)	0.06	1

NOTES

1. Solar Reflectance measurements in accordance with ASTM C1549 "Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer".
2. Solar Reflectance Index (SRI) calculated in accordance with ASTM E1980 "Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces".
3. Solar Reflectance and Solar reflectance index (SRI) are obtained from average testing values of an independent laboratory.
4. Values may change sligthly for the same color and texture due to variations in local aggregates.
5. Contact your Techo-Bloc Representative for current SR and SRI values