Designers can make projects "greener" by utilizing materials that reduce what is referred to as the "Urban Heat Island Effect".

Heavy development in urban areas often removes desired vegetation which results in the loss of evaporative cooling and increased temperatures in urban areas. (Figure 1)

Temperatures in urban areas can often be 10 degrees higher than surrounding rural and suburban areas. (Figure 2)

Designers can reduce the Heat Island Effect and earn one point of LEED credit by using pavers with an SRI of 29 or greater. SRI or Solar Reflective Index is the measure of the solar reflectance and thermal emissivity of a material surface. Materials with higher SRI values are typically lighter in color, reflect more heat and solar energy, and are generally cooler.
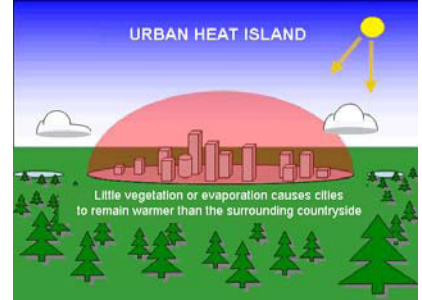

Figure 1
Urban Heat Island Effect

Another term used to define the solar reflectance of a material is called "Albedo Factor". Albedo factors for various materials are illustrated in Figure 3.
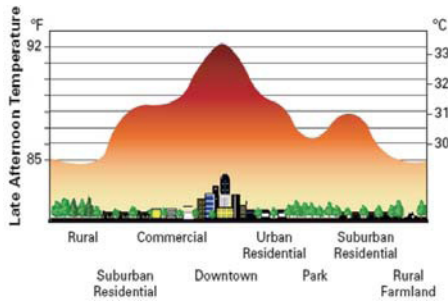

Figure 2
Heat Island Temperature Increase

The solar reflective index (SRI) of a material can be determined by testing using ASTM Standards C1549, C1371 and C1980. In some instances SRI values can also be found in industry published data references from sources such as Lawrence Livermore Lab.

General Shale has both concrete and clay paver products available with SRI values of 29 or greater and will qualify for the LEED Heat Island Effect credit. Please consult with your sales representative for more information.

Figure 3
Albedo Factors

SRI values for various materials and select General Shale products are shown in the following table. Please note that SRI values can vary due to age, condition, effect of soiling, surface texture and specific raw material used.
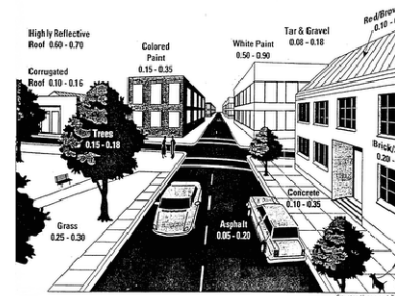
Material	SRI	Note / Source
General Shale Marion Red Clay Pavers	33	ASTM test available on request
General Shale Pathway Vienna Series "Natural" Concrete Pavers	35	Lawrence Livermore Data
Concrete	30	
Asphalt	0	
White Acrylic Paint	100	
Black Acrylic Paint	0	