

ROADSTONE COOL PAVING

Roadstone offers a range of Cool Paving solutions to suit most projects. The use of Cool Paving offers numerous benefits:

- Heat island reduction
- Improved health and comfort
- Improved water and air quality
- Reduced air-conditioning
- Reduced street lighting
- Reduced emissions

Solar Reflectance Index values are now available for our paving range to meet LEED requirements. The Roadstone Aquaflow permeable paving system is also beneficial for Cool Paving projects.

LEED

Leadership in Energy and Environmental Design (LEED) is the most widely used green building rating system in the world. LEED provides a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement.

HEAT ISLAND

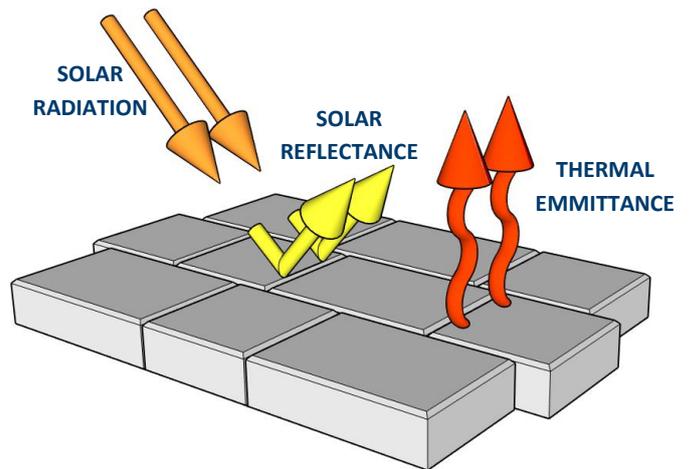
A heat island is a developed urban area that is significantly warmer than the surrounding undeveloped rural areas due to human activities. Heat islands can negatively impact energy consumption, human health and comfort, water quality and wildlife habitats. Heat island reduction is an important aim of LEED projects and LEED points are available for it.



SRI

Solar Reflectance Index (SRI) is a key metric for the contribution of individual construction materials to urban heat islands. SRI is a measure of a surface's ability to stay cool in the sun by reflecting solar radiation and

emitting thermal radiation. It is defined such that a black surface has an SRI of 0 and a white surface has an SRI of 100. SRI is calculated by testing a material's solar reflectance and thermal emittance and combining the results in accordance with ASTM E 1980. For heat island reduction higher SRI values are preferable.



ROADSTONE SRI

Roadstone's complete range of paving colours has now been tested for SRI. Testing was conducted by Atlas Material Testing Technology, USA. See the results in the table below.

Colour	Solar Reflectance (%)	SRI
Charcoal	7.4	5
Midnight	12.1	10
Heather	14.6	13
Terracotta	18.4	18
Tan	20.4	20
Natural	20.8	21
Straw Yellow	31.6	35
White Granite	34.4	38
Silver Granite	38.3	43

LEED & SRI

As per LEED BD+C: SSc7.1 'Heat island effect – nonroof' in order to qualify for the LEED point at least 50% of the site hardscape (including roads, sidewalks, courtyards and parking lots) should use materials with an **SRI of at least 29**. Both Straw Yellow and White Granite exceed the LEED requirements significantly.

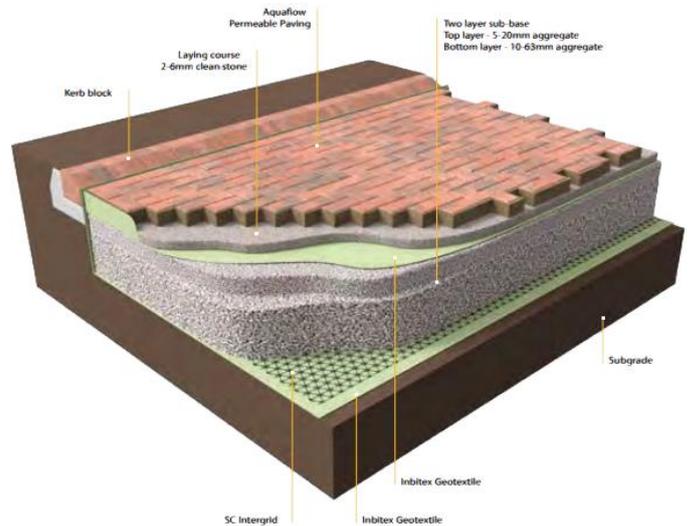
COOL PERMEABLE PAVING

Unlike a 'Cool Roof', Cool Pavement has no standard definition. In the past emphasis has been placed on reflective paving due to the extensive research carried out on reflective roofs. However research has shown that permeable paving can also have a cooling effect. Many practitioners have therefore expanded the definition of Cool Pavements to include permeable paving.

Unlike traditional paving which is intended to form a relatively water tight surface, permeable paving intentionally permits water to infiltrate the paving and sub-base. From there it is either filtered through a geotextile membrane and in to the subgrade or attenuated on an impervious SC membrane and released in a controlled manner. This water stored within the system can then evaporate through capillary action as the paving heats up, thus cool the paving. This can have a beneficial effect on the paving's contribution towards urban heat islands.

ROADSTONE AQUAFLOW

Roadstone Aquaflow is a Sustainable Urban Drainage System (SuDS), also known as permeable paving. It is an alternative to the traditional pipes, gullies and culverts approach to rain water drainage. Roadstone Aquaflow utilises custom shaped pavers and a designed sub-base fill material and membrane to deal with rain water at the source.



Roadstone Aquaflow offers many advantages:

- Deals with rain water at source
- Reduced water quantity
- Improved water quality
- Reduced construction cost
- Enables rain water collection
- Improved maintenance programme
- Reduced heat island effect

For more information on our range of paving see www.roadstone.ie