SOLAR REFLECTANCE INDEX

The Solar Reflectance Index (SRI) is a measure of the solar reflectance and emissivity of materials that can be used as an indicator of how hot they are likely to become when exposed to the sun. Solar reflectance is the ability of a material to reflect solar energy from its surface back into the atmosphere. Emissivity is the ability of a material to release absorbed energy, eg. heat from a substrate. SRI is only relevant for external use materials. SRI is reported on a scale from 0 to 100, with black being 0 and white being 100. The more solar radiation that is absorbed, the hotter the surface will become and the lower the SRI value. More reflective surfaces will remain cooler in sunshine and have higher SRI values.

SRI is calculated according to ASTM E903 and ASTM E1980 - Solar Reflectance Index (SRI) of horizontal and low-sloped opaque surfaces. The calculation is based on a mathematical formula that includes measured values for thermal emittance (ASTM C1371), total solar reflectance (ASTM C1549) and solar absorption (ASTM E1980). This method is used to calculate SRI for surfaces with an emissivity greater than 0.1. Based on emissivity test results from UNSW Sydney a emissivity value of 0.96 was adopted.

Solar Reflectance Index results listed based on **Medium-wind (2-6 m/s)**

SOLAR ABSORPTANCE

The colour of a wall is represented by its **solar absorptance** value, a decimal number that is an indicator of the colour's ability to absorb radiation from the sun.

"Absorptance, (α), is a measure of the ability of a surface to absorb radiation. It is the ratio of the thermal radiation absorbed by a surface to that absorbed by a perfectly absorbing surface", and "Solar absorptance, refers to the ability of a surface to absorb all the radiation wavelengths of the sun's emission spectrum".

To design energy efficient buildings, it is a requirement of energy assessors to calculate the heat loss or gain of materials used to construct any new buildings. Solar absorptance is an indication of the amount of solar energy or heat that passes into a material, compared to the amount that is reflected from the material. Solar absorptance relies on colour, no matter what material you use. Dark materials have a higher solar absorptance and will absorb more solar energy. Selecting lighter coloured materials will reduce the amount of heat energy entering a building, leading to lower energy costs, and greater thermal comfort.

Colour	Solar Reflective Value	Solar Reflective Index	Solar Absorptance Value	BASIX Classification
Almond ECO	0.54	66	0.48	Medium
Ash ECO	0.64	79	0.36	Light
Auburn ECO	0.42	50	0.58	Medium
Charwood ECO	0.31	36	0.71	Dark
Cloudy Ash	0.64	79	0.36	Light
Dune	0.55	67	0.45	Light
Ebony ECO	0.30	34	0.70	Medium
Graphite	0.24	27	0.76	Dark
Limestone	0.58	71	0.42	Light
Mist ECO	0.60	74	0.40	Light
Mocca	0.29	33	0.71	Dark
Pearl ECO	0.66	82	0.34	Light
Pewter ECO	0.50	61	0.50	Medium
Platinum ECO	0.57	70	0.43	Light
Pontville ECO	0.50	61	0.50	Medium
Pure White	0.68	84	0.32	Light
Storm Grey ECO	0.34	40	0.66	Medium
Taupe	0.53	65	0.47	Light
Tuscan ECO	0.58	69	0.43	Light
Walnut ECO	0.51	62	0.49	Medium
Warm White	0.64	79	0.36	Light
Whisper White ECO	0.64	79	0.36	Light

BRICKS FOR THE FUTURE RECLAIMED RANGE

Colour	Solar Reflective Value	Solar Reflective Index	Solar Absorptance Value	BASIX Classification
Buff ECO	0.55	67	0.49	Medium
Char ECO	0.32	37	0.69	Medium
Grey ECO	0.33	37	0.68	Medium
Limewash ECO	0.60	74	0.40	Light
Red ECO	0.43	51	0.58	Medium
Tuscan ECO	0.58	69	0.43	Light
White ECO	0.66	82	0.34	Light

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