COOL COLORS SOLAR-SCUD

The collection of exterior heat-reflecting colours to decorate building enclosures.

COOL
SOLAR-SCUD
COLORS

KERAKOLL
The GreenBuilding Company

Solar-Scud:
Cool Colors for exteriors that protect

For years now we have been seeing a progressive warming of the climate, and in particular increasingly hot, humid summers. An excessive rise in temperature has a negative impact not only on people, but also on buildings and on the environment in general. Just as we protect our buildings during the winter, using thermal insulation panelling systems, it is equally important to protect them from excessive heating during the hotter season.

As regards the buildings, the effects of increased thermal energy absorption from sunlight are:

- decay and deterioration of the chemical and physical performance of the opaque building enclosure materials, which result in technical, functional and aesthetic problems in the medium term
- surface tensions and thermal stress due to large differences in temperature during the day/night cycle
- excessive overheating of the outer surface of the ETICS systems, with noticeable increase in the risk of cracking
- increase in the internal temperature of confined spaces, resulting in:
  - deterioration of living comfort
  - increased electricity consumption for summer air conditioning and consequent increase of the environmental impact
  - increase in costs for summer air conditioning.

The solution to these problems is to avoid overheating of the opaque enclosure by selecting light colours or colours developed using **Cool Colors Solar-Scud technology**, which means that strong colours can still be selected for highly protective decoration of external surfaces.

TECHNICAL GLOSSARY

Solar radiation: energy emitted by the sun, the part of this energy that reaches the earth is called solar radiance.

Irradiation: mechanism by which heat is transmitted via electromagnetic waves that do not require material supports; this is the mechanism that allows the heat of the sun to reach the earth.

Incident radiation: the amount of energy that reaches a given surface; according to the properties of the surface itself this is divided into absorbed, transmitted and reflected energy.

Solar reflectance or reflective index: ability of a surface to reflect incident solar heat; the greater the solar reflectance, the lower the tendency of the surface to overheat, as it will absorb and transmit a smaller amount of the incident heat.

Urban heat island: phenomenon regarding the overheating of urban areas due to high levels of heat storage by the walls of buildings and asphalt coated surfaces. The heat accumulated is returned slowly to the environment over the whole 24-hour period, contributing to constant heating of the air.

Solar-Scud: the range of finishes that cares for the environment

Overheating of the surfaces of buildings, due mainly to the dark colours of the finishes created using traditional technology, results in the building itself storing large amounts of heat. This heat is released over time, resulting in the phenomenon known as **urban heat island**, that is to say the overheating of building exteriors and asphalt coated surfaces. The stored heat is returned slowly to the environment over the 24 hours, contributing to warming of the surrounding air by as much as 5 °C compared with less built-up areas on the outskirts of towns.

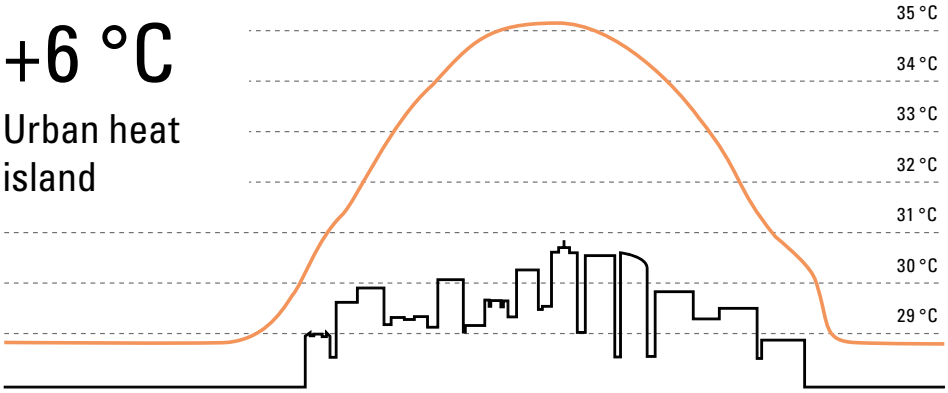
This phenomenon has a dual negative influence on the micro-climate of urban areas:

- it involves **an increase in intense meteorological events** that are becoming an ever more common feature of our summers
- it is a joint cause of the **increase and accumulation of particulate** which results in a general and constant worsening of environmental pollution.

Thanks to use of the decorative finishes in **Cool Colors Solar-Scud shades, it is possible to help improve the environmental conditions of urban areas** and reduce the emissions caused by summer air conditioning, helping reduce pollution simply by decorating the façade of your home in an intelligent manner.

+6 °C

Urban heat island



Cool Colors Solar-Scud: effectiveness

To give an idea of the effectiveness of Cool Colors Solar-Scud heat-reflecting technology, let us look at the results obtained on shade KIR69 when compared with the same shade formulated using traditional technology.

Tested product Kerakover Eco Kompact	**SRI (Solar Reflectance) [-]**	**Temperature [°C] measured underneath the finish (application on 5 cm-EPS thermal insulation panelling system) ***	**Temperature [°C] measured on the back of the insulation panel (application on 5 cm-EPS thermal insulation panelling system) ***
KIR69	20	42 °C	26 °C
Same colour with traditional technology	3	62 °C	36 °C

* Light source: UV lamp for sunlight simulation_nominal power 300 W, 50 cm, exposure time 8 hours

Solar-Scud:
the range of heat-reflecting finishes

Cool Colors Solar-Scud

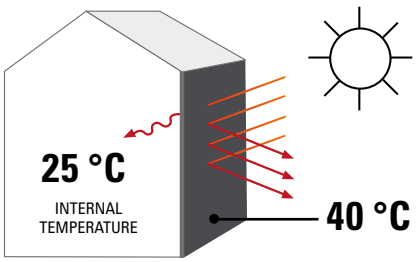
Cool Colors Solar-Scud shade chart is formulated using **special heat-reflecting pigments**; despite their intense colouring, they reflect much of the incoming solar radiation, thus remaining cooler and contributing to solve problems related to overheating in buildings decorated with traditional colours.

The **Cool Colors Solar-Scud** range of finishes is the intelligent way of **decorating the outer surfaces of buildings, making them highly reflective** without foregoing colour.

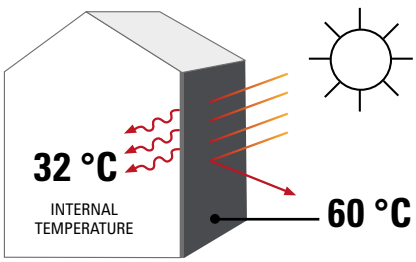
Solar-Scud shades can be provided in the following finishes:
- Kerakover Eco Kompact
- Kerakover Silox Finish
- Kerakover Eco Silox Pittura
- Kerakover Eco Acrilex Flex

The products allow the use of Cool Colors Solar-Scud technology for every type of intervention:
- ETICS thermal insulation panelling systems compliant with Italian standard UNI/TR 11715 (for the grain sizes specified in the standard)
- decoration of façades without thermal insulation panelling systems
- repair of old façades
- maintenance of old thermal insulation panelling systems.

The reduction in overheating and thermal shock on the opaque vertical walls of the building ensures:
- greater durability of materials and consequently of the buildings
- maintenance of the chemical and physical properties of products without loss of performance over time
- ability to decorate the surfaces of KlimaExpert ETICS systems with strong colours without the risk of cracking
- reduction in the passage of heat from the outside to the internal room, with advantages in terms of living comfort, reduction in power consumption for summer air conditioning and reduction in the economic and environmental costs thanks to the consequent reduction in emissions for air conditioning; **dropping the temperature of the internal room by one degree centigrade means a reduction of between 5 and 8% in power consumption**.



Cool Colors Solar-Scud



Same colour with traditional technology

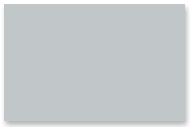
69 heat-reflecting colours
to decorate building enclosures

COOL SOLAR-SCUD COLORS


KIR01

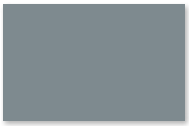

KIR02


KIR03


KIR04

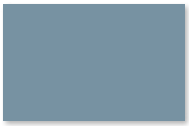

KIR05


KIR06


KIR07

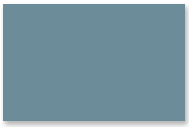

KIR08


KIR09


KIR10


KIR11


KIR12


KIR13


KIR14


KIR15

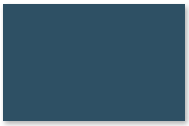

KIR16


KIR17

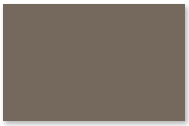

KIR18


KIR19


KIR20


KIR21


KIR22


KIR23


KIR24


KIR25


KIR26


KIR27


KIR28

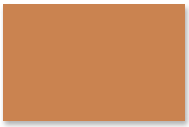

KIR29


KIR30


KIR31


KIR32


KIR33


KIR34


KIR35


KIR36


KIR37


KIR38

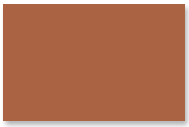

KIR39


KIR40


KIR41

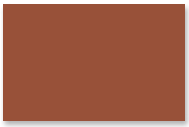

KIR42

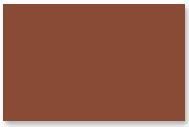

KIR43

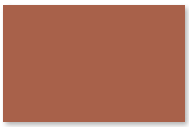

KIR44

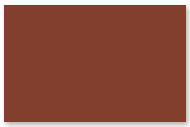

KIR45

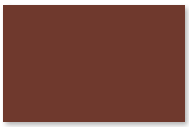

KIR46

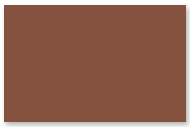

KIR47

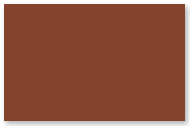

KIR48


KIR49

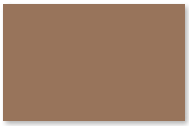

KIR50


KIR51

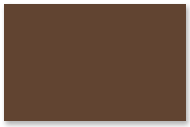

KIR52

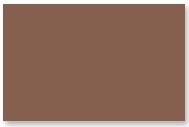

KIR53

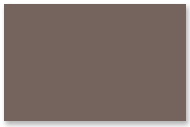

KIR54

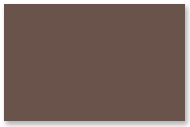

KIR55


KIR56


KIR57


KIR58


KIR59


KIR60


KIR61


KIR62


KIR63

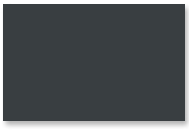

KIR64


KIR65


KIR66


KIR67


KIR68


KIR69

The shades shown are intended as an indication only.

EN
Ref. GBR Data Report - 02/2021
MKT-TEC code 64/2021

KERAKOLL
The GreenBuilding Company

www.kerakoll.com

KERAKOLL Spa - via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italia
Tel +39 0536 816 511 Fax +39 0536 816 581 e-mail: info@kerakoll.com