



# IR REFLECTIVE PASTES FOR EXTERIOR

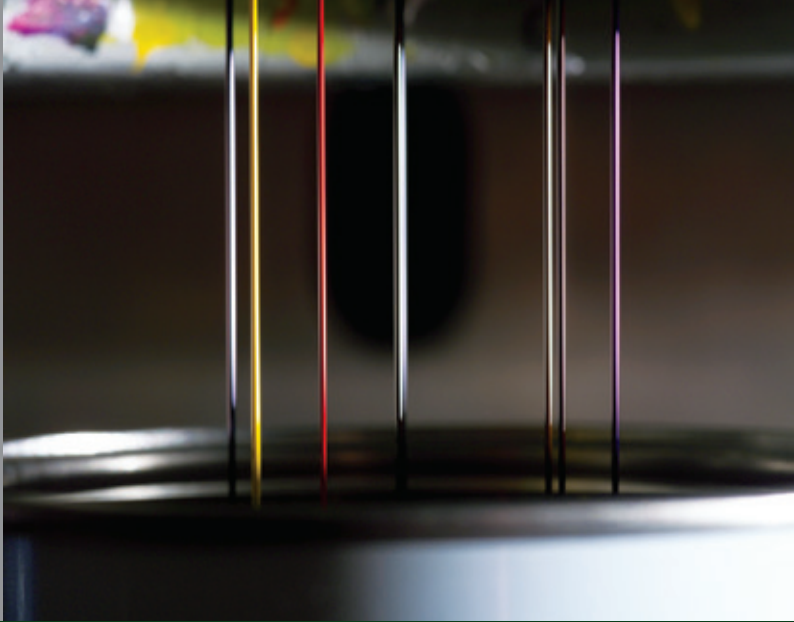
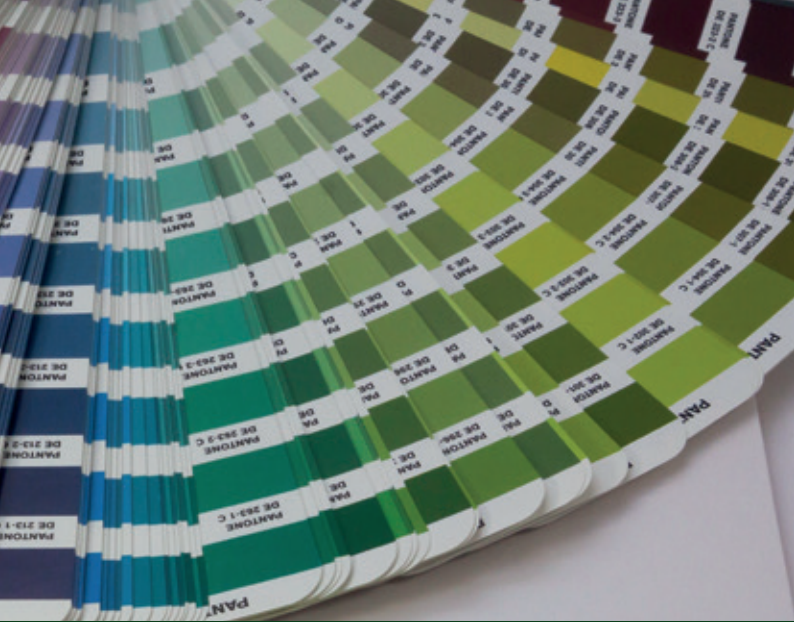
IR-REFLECTIVE  
PIGMENTS

INORGANIC PIGMENTS

DESIGNED FOR  
ALL EXTERIOR  
APPLICATIONS

XA3000/06	blue
XA3000/42	green
XA3000/69	orange
XA3000/72	black

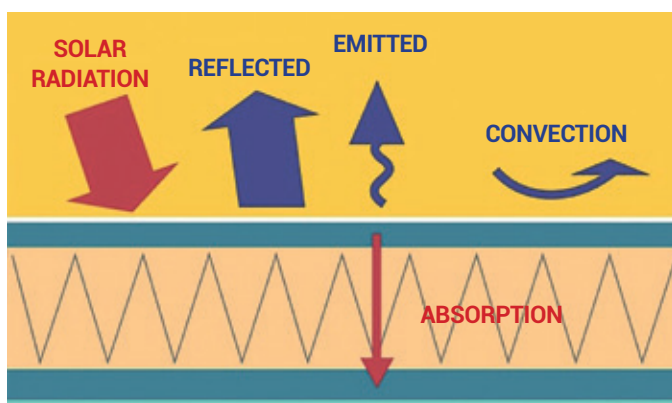
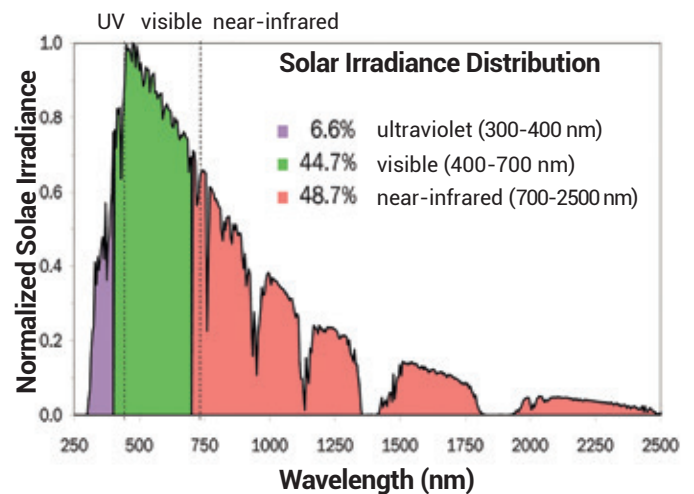




# IR REFLECTIVE PASTES

The Sun is a source of IR radiation responsible for the warming up because of irradiation.

The sun is a source of radiation with a wide spectrum of wavelengths. These wavelengths are distributed in the so-called visible spectrum, in the UV (ultra violet) range with a higher energy content and lower wavelengths, others are in the near infra-red (NIR) and infra-red (IR) range with a lower energy content and higher wavelengths, and these are also responsible of the increase of the temperature of anything that is exposed to the sunlight.



The increase of temperature of an object exposed to the sunlight is due to some parameters related to the ability to reflect the light and to absorb more or less energy and the ability to release heat to the environment, the so-called conductivity.

The heat build up (HBU) is a measure of how the item tends to increase its temperature when exposed to the sun.

The HBU is not only influenced by the intrinsic characteristics of the object, but also by the environment itself, especially by the room temperature and ventilation.

In the picture are summarized all the phenomenon that contribute to the heat build up.

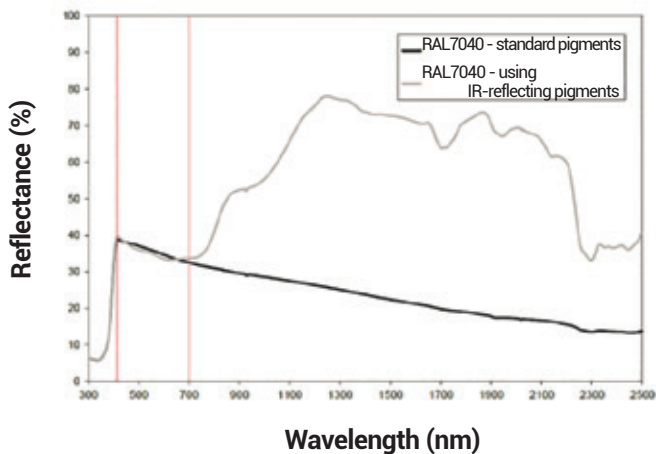
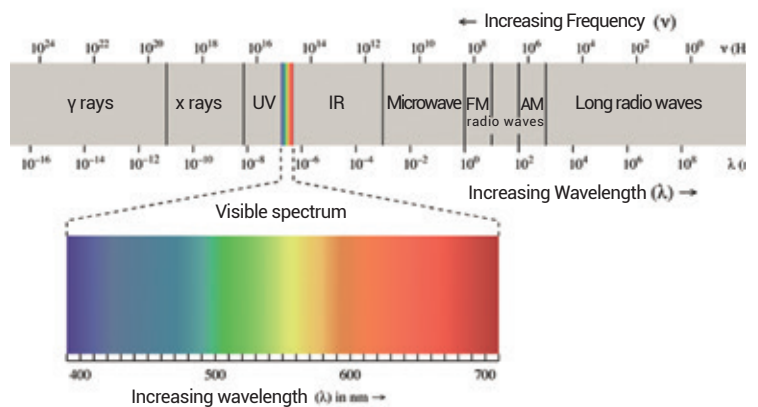




# FOR EXTERIOR

When we consider a pigment or a pigmented coating, the reflectivity in the visible part of the spectrum is peculiar because it is the one responsible of the perception of the color by the human eye. In general a light colored item will reflect more energy than a dark colored one, therefore the light colored item will absorb less energy resulting in a lower increase of temperature due to the solar exposure.

The radiation in the IR and NIR do not influence the color but they do influence the HBU and therefore the temperature.



Using pigments that have the same reflectivity in the visible range of the spectrum but with higher reflectivity (ability to reflect) in the NIR/IR range, we can formulate paints with lower HBU. This means choosing IR-reflective pigments.



## IR REFLECTIVE PASTES FOR EXTERIOR

Based on this concept, Sayerlack have developed the pigmented pastes of the series **XA3000/XX** with IR-reflective pigments. The purpose is to preserve the coating film and the substrate.

In fact the wood and the PVC have a lower ability to release heat into the environment because of the low thermal conductivity and therefore the HBU is higher than in other materials. The heat build up, due to the absorption of energy, is responsible for the degradation of the coating but also of the substrate, over time.



The range of the **XA3000/XX** pastes consists of 4 single pigment pastes for waterborne paints:

**XA3000/06 - blue**

**XA3000/42 - green**

**XA3000/69 - orange**

**XA3000/72 - black**

The pigments in these pastes are purely inorganic. This imparts to the XA3000/XX the best lightfastness and weatherability possible.

They have been designed for all the exterior applications: cladding, decking, joinery, roof, etc...

If used in combination with the standard waterborne pastes **XA2006/XX**, it is possible to create any color.

Even when combined with the **XA2006/XX** the advantageous decrease of HBU is sensitive.

The QUV tests and those with the Gardner Wheel have confirmed the positive results we expected.

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