Saint-Gobain Infinity's range of solar control glasses allow optimum daylight to pass through but cuts radiation and reflects heat. Infinity range of glasses have special coating that provides superior UV protection while ensuring indoor temperatures.

When solar radiation strikes glass, it is partly reflected, partly absorbed in the thickness of the glass and partly transmitted.

The ratio of each of these 3 parts to the incident solar radiation defines the reflectance factor, the absorptance factor and the transmittance factor of the glazing.

**Transmittance, Reflectance and Absorptance Factors**

The transmittance, reflectance and absorptance factors are the ratios of the transmitted, reflected or absorbed radiant flux to the incident radiant flux.

Solar control

To help reduce overheating, the following steps can be taken:

- Ensure adequate ventilation
• Use low energy transmission glazing, known as solar control glass. This glass allows only a specified fraction of solar radiation energy to pass through, providing illumination but helping to prevent overheating.

Solar control glazing

There are three major considerations regarding solar control glazing:

• The reduction of solar energy heat gain to achieve the lowest possible solar factor
• The control of heat transfer from the outside to the interior by means of the lowest U-value possible
• To achieve a good level of natural daylight through optimum light transmittance value possible

Choosing Glass

In tropical countries like India, we need to be careful in selecting the right glass. Nowadays, there are various types of glass solutions available. Selecting the right product is critical in maximizing the benefits possible from glass.

The key performance concepts in designing a building envelope with glass are explained below:

• Solar Factor also known as Solar Heat Gain Co-efficient
• U-value
• Relative Heat Gain

Solar Factor

Heat gain on the inside of the building due to direct solar radiation incident on glass is measured through the Solar Factor of glass.

Solar Factor is the sum of the percentage of incident solar energy directly transmitted and incident solar energy absorbed and re-emitted inside.

Solar factor = \( \frac{b+e}{a} \)

U-value

Heat gain due to temperature difference is expressed by the U-value of a glass. U-value is the amount of heat transferred (lost/gained) due to a temperature differential of 10C between inside and outside, per square meter.

Relative Heat Gain (RHG) or Total Heat Gain (THG)

It is the term that describes the amount of heat energy entering through the glass due to the direct solar radiation incident and heat transfer due temperature differential.

\[ \text{RHG} = (\text{Solar incident energy} \times \text{Solar Factor of glass}) + (\text{U-value in W/sq. m K} \times \text{Temperature Difference}) \]