

Basic terms for solar control and thermal insulation

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solar factor

The total degree of energy transmittance (solar factor) indicates what percentage of solar rays penetrates the glass into the room. In accordance with EN 410 this value is a combination of the direct penetrating energy and the heat that is absorbed by the glass and radiated inside.

b-Factor

The mid-transmittance factor of Solar energy, also termed „Shading Coefficient“, refers the energy transmittance of the respective glazing to the solar factor of a Standard Insulating glass (80 % = 0,8) and offers a value from which the cooling load of a building can be calculated: $b = g/0,8$.

Light transmittance

The Light transmission value indicates the percentage of visible light (wavelength 380 to 780 nm) which penetrates the glass into the room. This value is determined in accordance with EN 410 and relates to Standard light type D 65 and on the brightness sensitivity of the human eye.

Colour rendition index

The Index Ra is a value for the spectral transmission: the closer the value is to 100 %, the better the rendition of colours are seen during daylight in a glazed room, i.e. the lower the colour is falsified through the glass. Determined in accordance with DIN 6169.

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The thermal conductivity or U-Value according to EN 673 is a measure of the rate of heat loss of a building component. It gives the amount of energy which passes through one square meter of a building component over a given time, when there is a temperature difference of 1 Kelvin between the room air and outside air. The lower the U-Value the less heat loss and better the thermal insulation. The measurement is given in $W/m^2.K$.

U_g-Value

With the introduction of the current standard EN 673, the U_g-values are calculated differently. They are dependent on the emissivity of the product, the width of the cavity and the level of gas filling.

The given U_g-values relate exclusively to vertical glazing. If glazing is sloped or horizontal then the U_g-value will be worse. In EN 673 Point 5.3.1 and 5.3.2 you will find values for calculation of horizontal glazing. As a guideline, the U_g-value of 1.1 $W/m^2.K$ in vertical glazing would become 1.7 $W/m^2.K$ in horizontal glazing.