

Reference values for shading factors

Double-glazed facade venetian blinds - Intermediate

Der SonnenLichtManager



Basics

The calculation of the protection against overheating value includes the **total solar energy transmittance** g_{tot} for the combination of sun shading system and glazing or the **shading factor** F_c .

The F_c value is equal to the ratio of the total solar energy transmittance of the sun shading system and glazing combination to the g-value of the glazing:

$$F_c = \frac{g_{\text{tot}}}{g}$$

The glazing is thus also always included in the calculation of the F_c value. This means that it is also not possible to state a fixed F_c value for a sun shading product.

The efficiency of an intermediate sun shading system also always depends on the glazing that is actually used. This means that among other things, the type and thickness of the glass, as well as the type and position of the coatings have an effect. It is therefore recommended to have the g_{tot} and F_c value for the project-specific combination of sun shading and glazing determined.

Calculations for Building Projects

For calculations of the g_{tot} and F_c values of project-specific combinations of sun shading and glazing, please contact the Building Physics and Sustainable Building hotline:

Tel.: +49 9391 20-3025 **Mail:** bauphysik@warema.de

You can find reference values on the following pages

For the first estimates, you will find reference values for g_{tot} and F_c values for double-glazed facade venetian blind in various slat colours and for various glazings on the following pages.

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25 mm slats with triple glazing

Reference values for the combination with single glazing outside, a venetian blind between panes and triple heat protection glazing with **$g=0.53$ and $U_g=0.6 \text{ W/(m}^2\text{K)}$** inside. The F_c value is based on the total solar energy transmittance of the double-glazed window without a sun shading system $g=0.48$.

Colour	Slat angle	Sun angle	g_{tot}	F_c
White	Closed	1°	0.05	0.10
	45°	30°	0.12	0.25
Silver	Closed	1°	0.07	0.15
	45°	30°	0.10	0.21

Reference values for the combination with single glazing outside, a venetian blind between panes and triple sun shading glazing with **$g=0.25$ and $U_g=0.6 \text{ W/(m}^2\text{K)}$** inside. The F_c value is based on the total solar energy transmittance of the double-glazed window without a sun shading system $g=0.27$.

Colour	Slat angle	Sun angle	g_{tot}	F_c
White	Closed	1°	0.05	0.19
	45°	30°	0.08	0.30
Silver	Closed	1°	0.06	0.22
	45°	30°	0.08	0.30

The values are calculated in accordance with **DIN EN ISO 52022-3:2018-01** with summer boundary conditions using the programme SommerGlobal WinSLT from Sommer Informatik GmbH.

The light and radiation values of a sun shading system are determined by the supplier or by an independent testing institute and are considered to be guidelines. Tolerances in the measurement procedure and batch-related variations from the samples can lead to deviations in the determined values, and in the values calculated from these, for which we cannot assume liability.

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If you have any questions, you can contact the Building Physics and Sustainable Building hotline:
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25 mm slats in double-glazed window with double glazing inside

Reference values for the combination with single glazing outside, a venetian blind between panes and double heat protection glazing with **$g=0.64$ and $U_g=1.1 \text{ W/(m}^2\text{K)}$** inside. The F_c value is based on the total solar energy transmittance of the double-glazed window without a sun shading system $g=0.57$.

Colour	Slat angle	Sun angle	g_{tot}	F_c
White	Closed	1°	0.08	0.14
	45°	30°	0.16	0.28
Silver	Closed	1°	0.11	0.19
	45°	30°	0.16	0.28

Reference values for the combination with single glazing outside, a venetian blind between panes and double sun shading glazing with **$g=0.28$ and $U_g=1.0 \text{ W/(m}^2\text{K)}$** inside. The F_c value is based on the total solar energy transmittance of the double-glazed window without a sun shading system $g=0.30$.

Colour	Slat angle	Sun angle	g_{tot}	F_c
White	Closed	1°	0.08	0.27
	45°	30°	0.12	0.40
Silver	Closed	1°	0.10	0.33
	45°	30°	0.13	0.43

The values are calculated in accordance with **DIN EN ISO 52022-3:2018-01** with summer boundary conditions using the programme SommerGlobal WinSLT from Sommer Informatik GmbH.

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