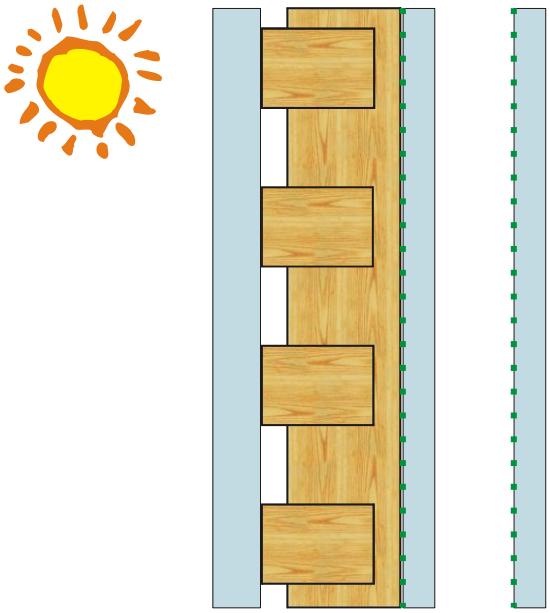
INFOTEXT

.LIGHT LOVES GLASS

OKA*WOOD* - Insulating Glass with Wooden Grid

OKA*WOOD* is a successful synthesis between the classical and the modern construction material, between wood and glass. OKA*WOOD* is made up of a filigree wooden grid which is integrated in the cavity between the glass panes of insulated glazing. Therefore the natural wooden material is protected against the effects of the weather.



OKA*WOOD* offers:

- efficient directionally selective sun protection
- very good heat insulation
- natural vibrant appearance of the façade
- partial though-vision
- privacy screening from outside to inside
- can be easily recycled
- visibility for birds

Physical properties

Thermal insulation

OKA*WOOD* is available as a 2-pane make-up with a cavity of 18 mm, and also as a 3-pane make-up with an additional cavity between the glass panes.
Depending on the gas filling and coating, the 2-pane make-up achieves U_g values ≥ 1.3 W/(m²K). As a 3-pane make-up, U_g values ≥ 0.6 W/(m²K) are possible.

Sound insulation

The integrated wooden grid has no significant effect on the sound insulation. The achievable values depend on the glass assembly.

Spectral properties

The wooden grid acts as a solar protection device and allows a warm tint of daylight to enter between the bars.

The compact cross-section of the louvres enables horizontal through-vision of approx. 50% of the surface area.

The function of OKA*WOOD* depends on the prevailing sunlight conditions. Partial through-vision is always given, despite the sun protection which differs depending on the season and time of day.

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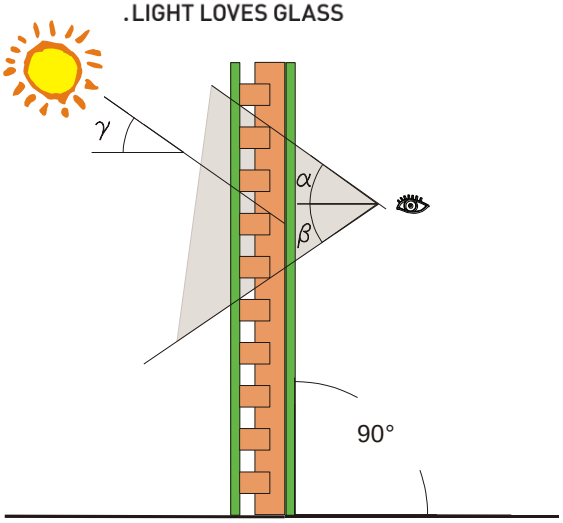

Integrated in a vertical façade, OKA*WOOD* functions as follows:

1. direct irradiation from high and medium solar altitude
   - thermal solar protection with total solar energy transmittance values of as low as ≥ 7 %, in particular secondary heat transfer with low solar radiation transmission
   - glare protection
2. direct irradiation from low solar altitude
   - partial transmission of the direct sunlight

Technical values of standard types

Table 1: Geometry of the OKA*WOOD* grid

Type	Distance of louvre [mm]	Horizontal through-vision %	Through-vision to above α [°]	Through-vision to lower β [°]	Lock out angle γ [°]
OKA*WOOD*	10	50	35	35	35

The following information applies to 2-pane make-up consisting of an external pane with a thickness of 6 mm and an inner pane with a thickness of 6 mm with a functional low-e coating at face #3.

Table 2: Technical values for the 2-pane make-up with low-e coating (vertical glazing)

Type	Make-up	T_v % min. [1]	T_v % max. [2]	TSET % min. [1]	TSET % max. [2]	U_g value [W/(m²K)] U_g [Btu/(hr ft² °F)] cavity 18 mm		
						Krypton	Argon	Air
OKA*WOOD*	2-pane	2	30	11	28	**1.3** (0.23)	**1.6** (0.28)	**1.9** (0.33)

The following information applies to 3-pane make-up consisting of an external pane with a thickness of 6 mm, a middle pane with a thickness of 6 mm with a low-e coating at face #3 and an inner pane with a thickness of 6 mm with a low-e coating at face #5.

Table 3: Technical values for the 3-pane make-up with low-e coating at face #3 and face #5 (vertical glazing)

Type	Make-up	T_v % min. [1]	T_v % max. [2]	TSET % min. [1]	TSET % max. [2]	U_g-value [W/(m²K)] U_g [Btu/(hr ft² °F)] cavity 18 mm + 10/12 mm		
						Krypton 10 mm	Argon 12 mm	Air 12 mm
OKA*WOOD*	3-pane	2	23	7	21	**0.6** (0.11)	**0.8** (0.14)	**1.0** (0.18)

[1] for angle of incidence γ = 60°

[2] for angle of incidence γ = 0° (vertical to the glass surface)

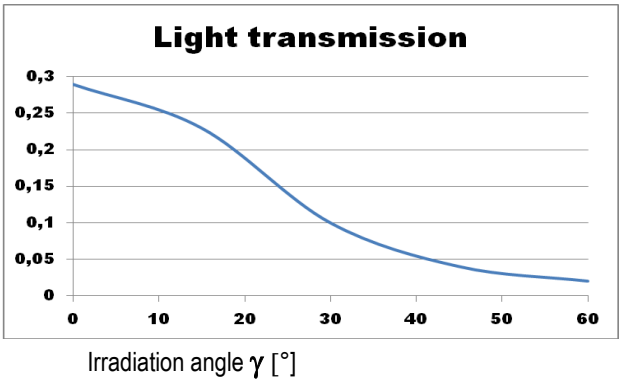

Figure 1: Angle-selective light transmission T_v according to DIN EN 410 of OKA*WOOD* in the 2-pane make up with low-e coating

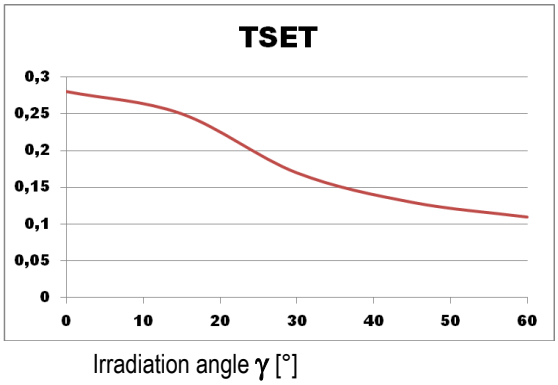

Figure 2: TSET according to DIN EN 410 in the 2-pane make up with low-e coating

Legend and related values:

	unit	standard	technical term
U_g	W/(m²K)	DIN EN 673 DIN EN 674	Thermal transmittance
TSET	%	DIN EN 410	Total solar energy transmittance or solar heat gain coefficient
T_v	%	DIN EN 410	Light transmission (direct/hemispheric resp. diffuse/ hemispheric)
F_C	%	DIN 4108	Reduction factor of a solar control system, F_C=TSET/$TSET_{reference}$
SC	%	GANA Manual	Shading coefficient, SC=TSET/0.86

The above data are approximate data. They are based on measurements of approved test institutes and calculations derived from these measurements. Values determined on a project-specific basis may vary from the above values.

Direct transmission relates to direct incidence of light, generally vertical (model situation for direct sunlight). Diffuse transmission applies to homogeneous, diffuse incidence of light from the outer hemisphere (model situation for an overcast sky). All values were measured hemispherically.

The specified values may change as a result of technical developments. No guarantee is therefore given for their correctness.

Make-up

The special feature of OKAWOOD is that the wooden grid for solar control is integrated in the cavity between the glass panes of insulated glazing and so require no special attention in terms of installation, maintenance and cleaning. In fact, the OKA*WOOD* element can be treated like conventional insulating glass. The glass thickness and type are based on the structural needs and constructional requirements.

The precious wood grid insert is made of solid wood. All the wood used in our products originates from sustainably managed forests. Other types of wood are available upon request.

Table 4:

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Standard make-up

Vertical glazing:

2-pane make-up

Outer pane made of thermally treated glass
Cavity: 18 mm with wooden grid, rough-sawn surface
Inner pane made of thermally treated glass, low-e coating face #3

3-pane make-up

Outer pane made of thermally treated glass
Cavity 1: 18 mm with wooden grid, rough-sawn surface
Middle pane made of thermally treated glass, low-e coating #3
Cavity 2: 8 to 12 mm with gas filling
Inner pane made of thermally treated glass, low-e coating face #5

Standard make-up

Horizontal glazing:

2-pane make-up

Outer pane made of thermally treated glass, functional coating face #2
Cavity: 18 mm with wooden grid, rough-sawn surface
Inner pane made of laminated glass from heat strengthened glass thermally treated glass

3-pane make-up

Outer pane made of thermally treated glass, functional coating face #2
Cavity 1: 18 mm with wooden grid, rough-sawn surface
Middle pane made of thermally treated glass
Cavity 2: 8 to 12 mm with gas filling
Inner pane made of laminated glass from heat strengthened glass thermally treated glass, low-e coating face #5

Dimensions

The table below show maximum dimensions and visible widths.

Glass dimension parallel to louvre direction Glass dimension perpendicular to louvre direction	max. 3500 mm max. 3500 mm
Louvre length	max. 1700 mm
Length of support elements	max. 3500 mm
Visible width of louvres Distance between louvres	10 mm 10 mm
Visible width of support elements Distance between support elements Freely cantilever of louvres	10 mm max. 600 mm 50 mm
End strip for shaped units	10 mm

Widths / heights in excess of the maximum lengths specified in the table above require a joint. At this joint it may be possible to see a gap or even an offset between the neighbouring louvres.

The material used as interlayer is a natural product. For this reason, deviations in colour, brightness and alignment of the wooden louvres may occur. Optical changes may result on some surfaces from the effects to temperature and UV rays. Also spots of natural resin may appear at the surface of the wood. This phenomenon is not a product fault.

The maximum area is 7 m^2. Special shapes are possible. For shaped units with inclined edges an end strip of 10 mm width is required. The feasibility and divisions must be discussed with OKALUX beforehand. It may be necessary to use an increased secondary sealant in the case of smaller dimensions and/or greater thickness of glass. The required edge seal width must be discussed with OKALUX beforehand. OKALUX will specify the location of the joints.

For tolerance reasons and due to differing temperature expansion, the insert may exhibit a visible light gap between the insert and the space bar. For this reason, the overall sealant (spacer bar + secondary seal) plus additional 5 mm have to be covered by a profile or by an appropriate edge screen printing.

In the case of a polysulphide as secondary seal, it may be necessary to use a exceed cover in order to provide sufficient UV protection. In the case of a frameless glazing system, it is generally recommended that the edge areas are covered using a UV-impenetrable edge enamelling. Depending on loading, the required sealant width can be considerably greater than that of “conventional” insulating glazing.

More detailed information you can find in our General Customer Notes "OKA*WOOD* tolerances“.

Installation instructions

OKA*WOOD* insulating glass is glazed as per normal insulating glass. During transportation, the insert may slide to the side, creating a greater visible slit between the spacer and the insert or the support profiles could become inclined. We must be notified in writing beforehand of any special loads which may occur during transportation (vibrations/shaking).

For instructions and recommendations for the installation of our insulating glazing, please refer to our information and instructions for customers contained in "Delivery of OKA*LUX* Glass Products" and "General Information on Glazing".

Other printed matter

If you do not have the following printer matter, please request it directly from OKALUX or download it from the Internet at www.okalux.com:

General terms and conditions of business
Product-specific information texts

As well as these, there are the following customer notes:

Customer notes on offers
Customer notes on delivery
Customer notes alarm glass
Customer notes screen printing
Customer notes Structural Glazing / Edge deletion
Customer notes on heat-soak test
Customer notes on glazing
Customer notes SIGNAPUR®
Customer notes OKA*WOOD* tolerances
Cleaning instructions for OKA*LUX* gen.
Cleaning instructions OKA*COLOR*
Guideline for visual quality