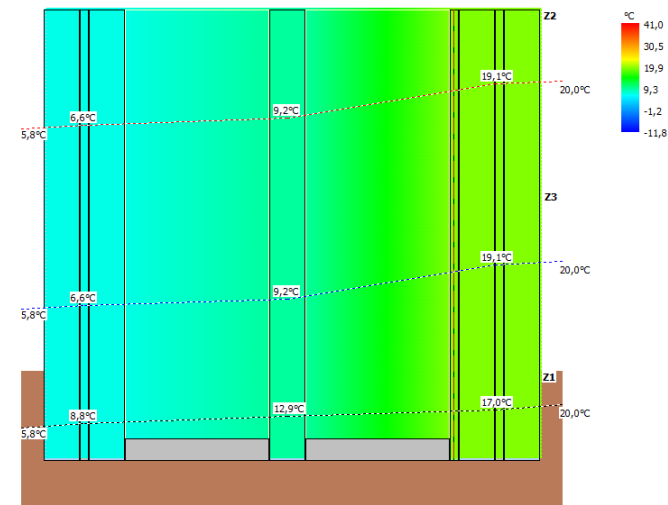
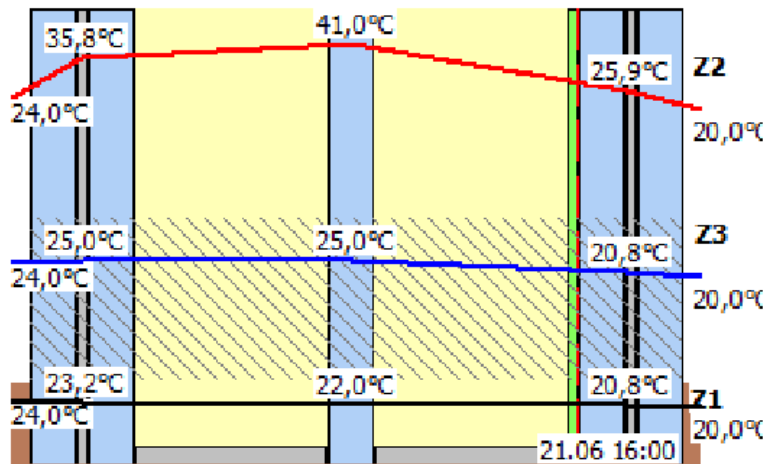


WinTHS

The software solution for the calculation of thermal stresses in glass caused by solar radiation





Start project

- To start a new project, the WinTHS program must be started via the start mask

Project:	Position:	Description:	
GlasGlobal Standard Statics (DIN 18008-1,-2)	WinSLT Standard Radiation (EN 410, EN 673)	Projects	Sommer Informatik GmbH Sepp-Heindl-Str. 5 D-83026 Rosenheim Tel: +49 (0)8031 / 24 88-1 Fax: +49 (0)8031 / 24 88-2 www.Sommer-Informatik.de info@sommer-informatik.de
GlasGlobal Point fixing Statics (DIN 18008-3)	WinSLT Experte Radiation (EN 410, EN 673, EN ISO 52022-3)	Manufacturer/Products	
GlasGlobal Fall protection Statics (DIN 18008-4)	WinSLT ASHRAE Radiation (ISO 15099, NFRC 100)	Settings	
GlasGlobal Walk on Statics (DIN 18008-5)	WinSLT Extractor Import spectral data	User	
GlasGlobal Accessible Statics (DIN 18008-6)	WinUw Uw-Value (EN ISO 10077-1)	Database connection	
Acoustics Database Noise protection	WinTHS Thermal stress (NF DTU 39 P3)	Init password	
AGSB Statics (ÖNORM B 3716)		Demo invisible	
Winiso® Thermal (EN ISO 10077-2, ISO 15099 / NFRC 100)		Language	
		Quit	



Program structure

Details

Header

Project details

Object data

Construction

The screenshot displays the software interface with several key components:

- Header:** A menu bar with options: Project, Print, Import/Export, Settings, View, Help, Quit.
- Project details:** A form containing:
 - Project: Triple insulating glass
 - Position: 01
 - Installation angle: 90,00° vertical
 - Date: 20.09.
 - System height: 1,50 m (<= 3m)
 - User: ADMIN
 - Remark: (empty)
 - Rw (C; Ctr): 0 (0 ; 0) dB
 - Type: (empty)
- Object data:** A tree view on the left showing a hierarchy of glass types, including Double insulating glass, Double-Iso LSG, and Triple insulating glass.
- Construction:** A central diagram showing a cross-section of a window with multiple panes and air gaps. It is labeled 'outside' on the left and 'inside' on the right. A table above the diagram shows construction layers:

Nr.	1	2	3	4	5	6	7
BE	2					5	7
- Details:** A panel on the right titled 'Details' for '2019_09_20'. It includes:
 - Utilisation table for '01 Double-Iso LSG'.
 - Layer composition table:**

Nr	BE	Description	Thickness (mm)
<input checked="" type="checkbox"/>	1	PLANICLEAR...	4,00
<input checked="" type="checkbox"/>	2	ECLAZ (m=...	0,00
<input checked="" type="checkbox"/>	3	90% Argon	12,00
<input checked="" type="checkbox"/>	4	PLANICLEAR...	4,00
<input checked="" type="checkbox"/>	5	90% Argon	12,00
<input checked="" type="checkbox"/>	6	PLANITHERM...	0,00
<input checked="" type="checkbox"/>	7	PLANICLEAR...	4,00
 - Total thickness: 36,00
 - Layer info table:**

Name	PLANICLEAR
Thickness (mm)	4,00
e(corr) [EN 12898:20...	0,8374
e(corr) [EN 12898:20...	0,8374
Thermal conductivity ...	1,000
Tau (VIS)	0,905
Rho (VIS)	0,082
Rho' (VIS)	0,082
Tau (SOL)	0,870
Rho (SOL)	0,078
Rho' (SOL)	0,078
Type of glass	ANG
updated	26.11.2014
 - Note: Basisglas; Substratdicken: i.d. R: 4, 5, 6, 8, 10, 12, 15, 19 mm



Enter project details

- Program information and name can be changed in the project header line
- After the calculation, the result is also displayed here.

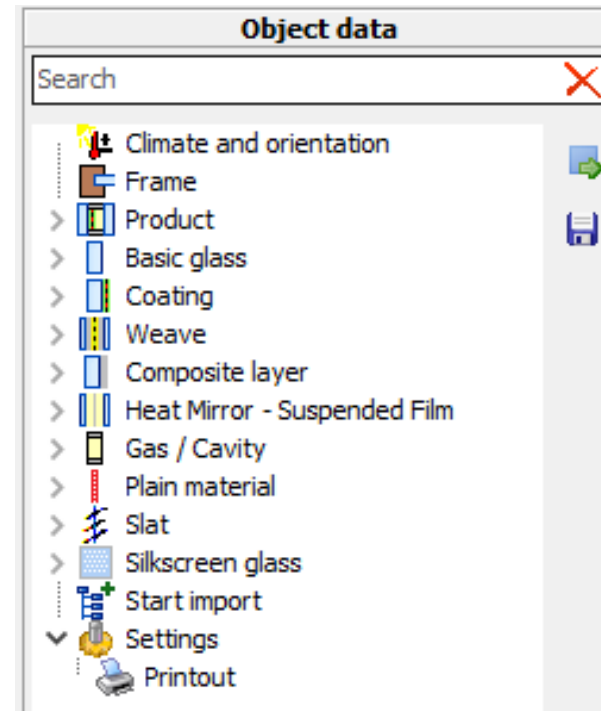
Project	<input type="text" value=""/>	Position	<input type="text" value="01"/>	Installation angle	<input type="text" value="90,00"/> ° vertical	Date	<input type="text" value=""/>
Description	<input type="text" value="Triple insulating glass"/>	Group	<input type="text" value=""/>	System height	<input type="text" value="1,50"/> m (<= 3m)	User	<input type="text" value="ADMIN"/>
Remark	<input type="text" value=""/>			Rw (C; Ctr)	<input type="text" value="0"/> (<input type="text" value="0"/> ; <input type="text" value="0"/>) dB	<input type="text" value=""/>	<input type="text" value=""/>

Proof OK (max. utilization: 59,11 %)

max. Utilisation: South, Glass pane 2: ANG 4,00

Object data

- You can change the materials and settings required for the structure in the *object data* area
- It is advisable to work through the points one by one
- If no suitable objects are available, you can create a user-defined material or make settings





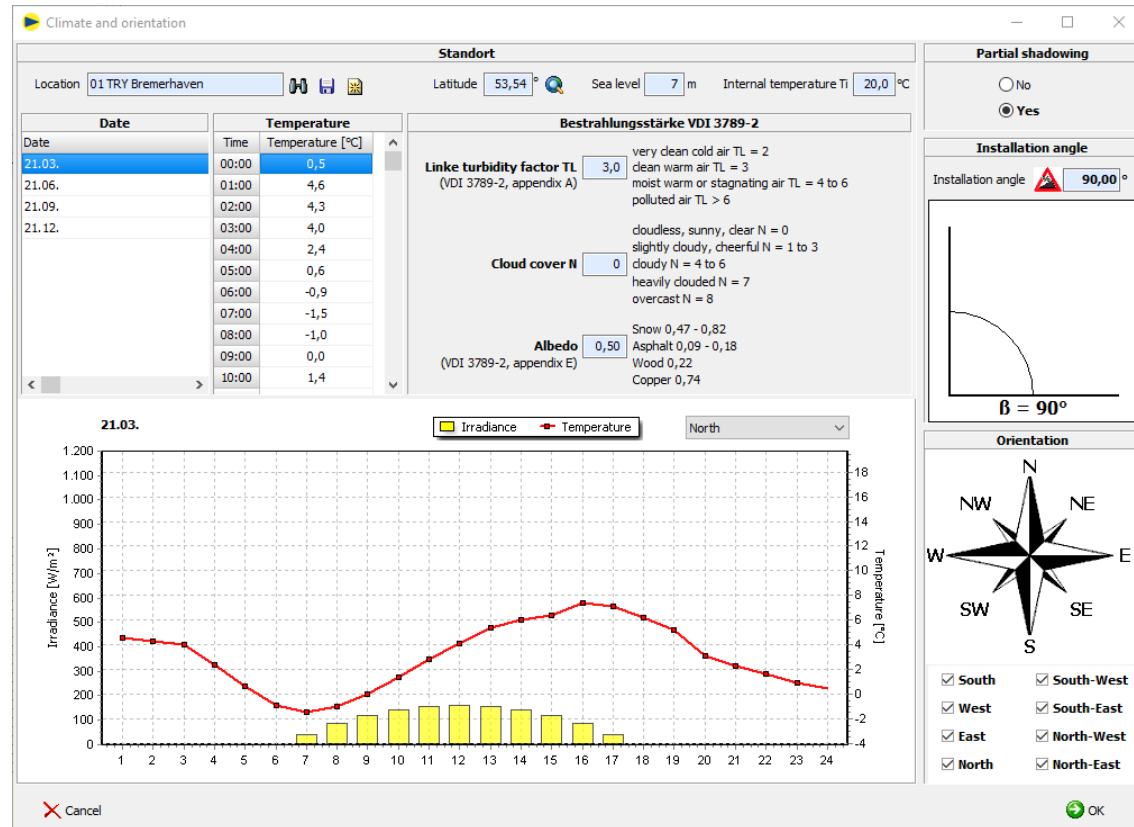
Climate and orientation

➤ Location

Determination of the location from which the outside temperatures and irradiance levels for the specified days are determined during the calculation

➤ Partial shading

The presence of a sun visor, canopy, loggia or wall may cause a temporary or permanent shadow to be cast on the glazing. The indication of the partial shading is required for the calculation of the thermal stress σ_{th} .





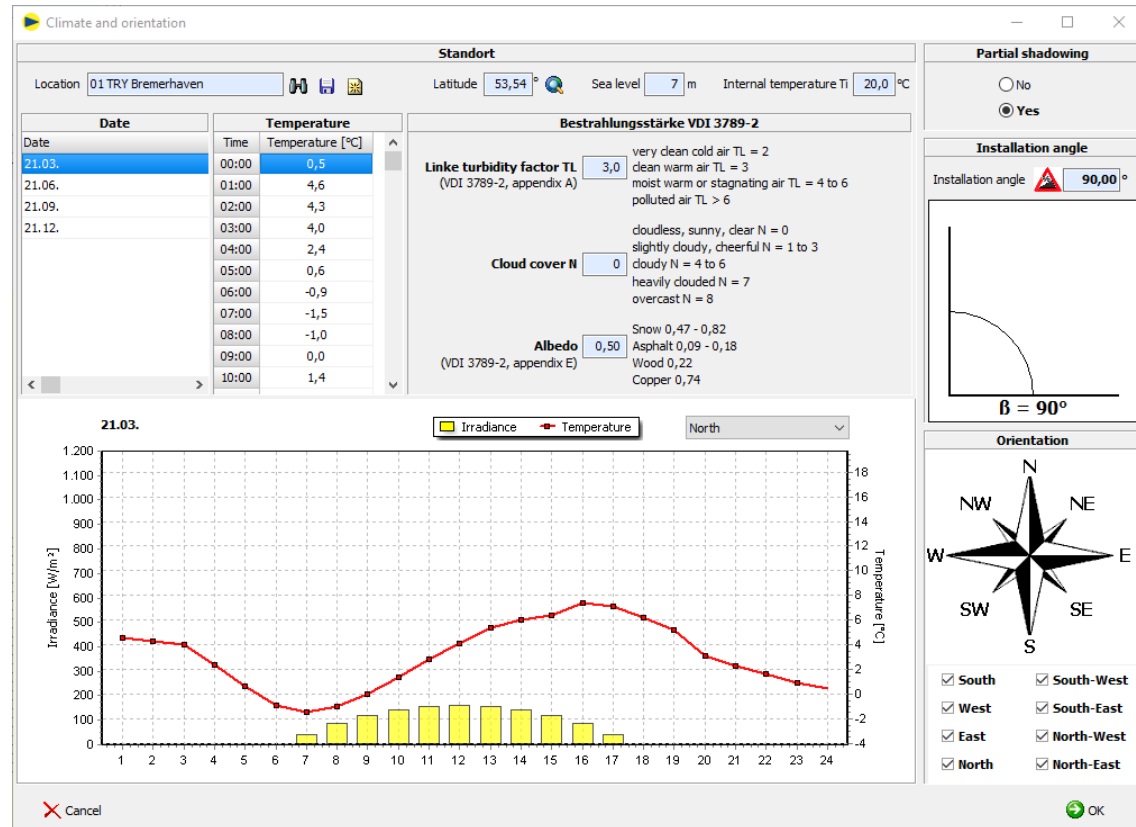
Climate and orientation

➤ Installation angle

Indication of the installation angle in relation to the horizontal

➤ Orientation

Determines for which orientations the calculation is to be carried out



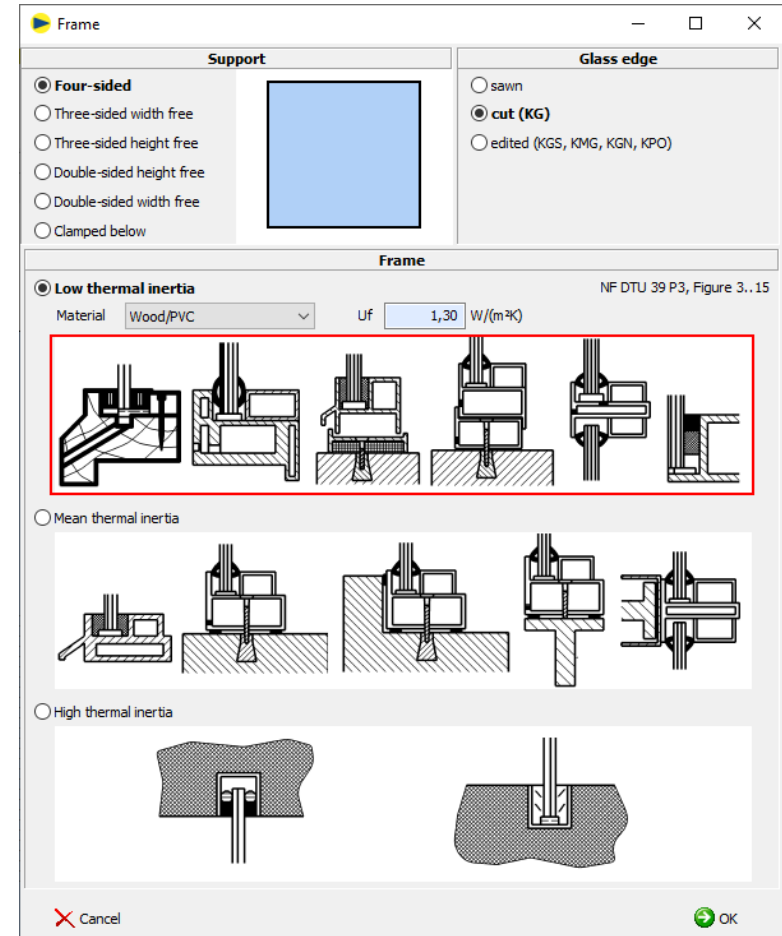
Frame

➤ Storage

The type of bearing arrangement is required for determining the coefficient k_a according to NF DTU 39 P3, Table 9, which is included in the calculation of the permissible stress σ_{adm} .

➤ Glass edge

Enter the type of glass edge here. The coefficient k_v according to NF DTU 39 P3, Table 11, which is also included in the calculation of the permissible stress σ_{adm} , is determined on the basis of this information.

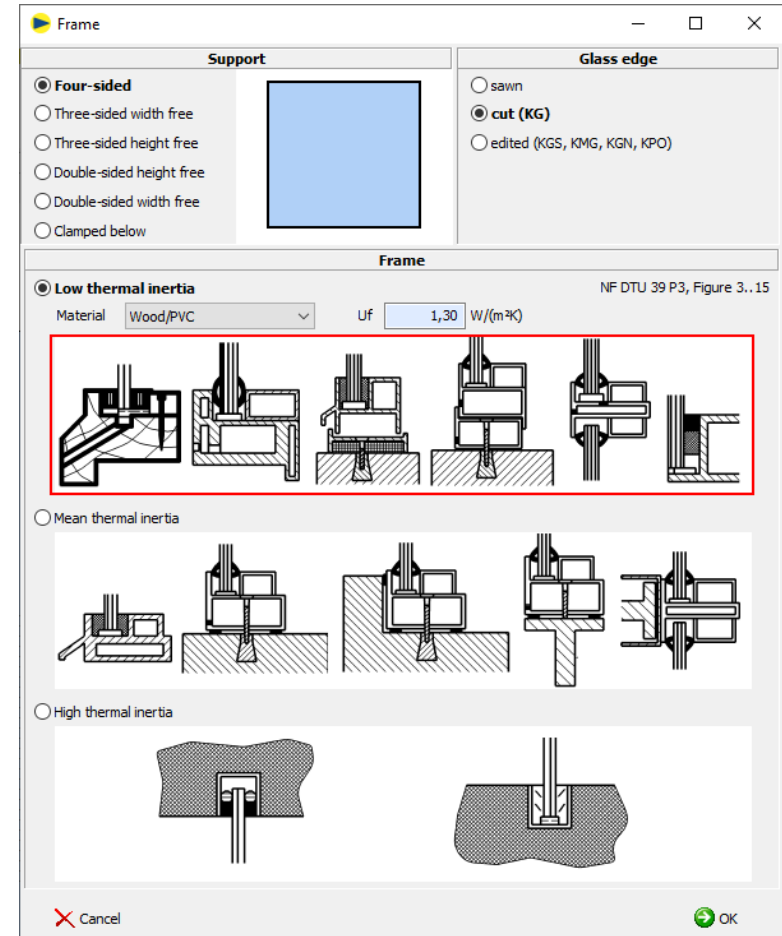


Frame

➤ Frame type

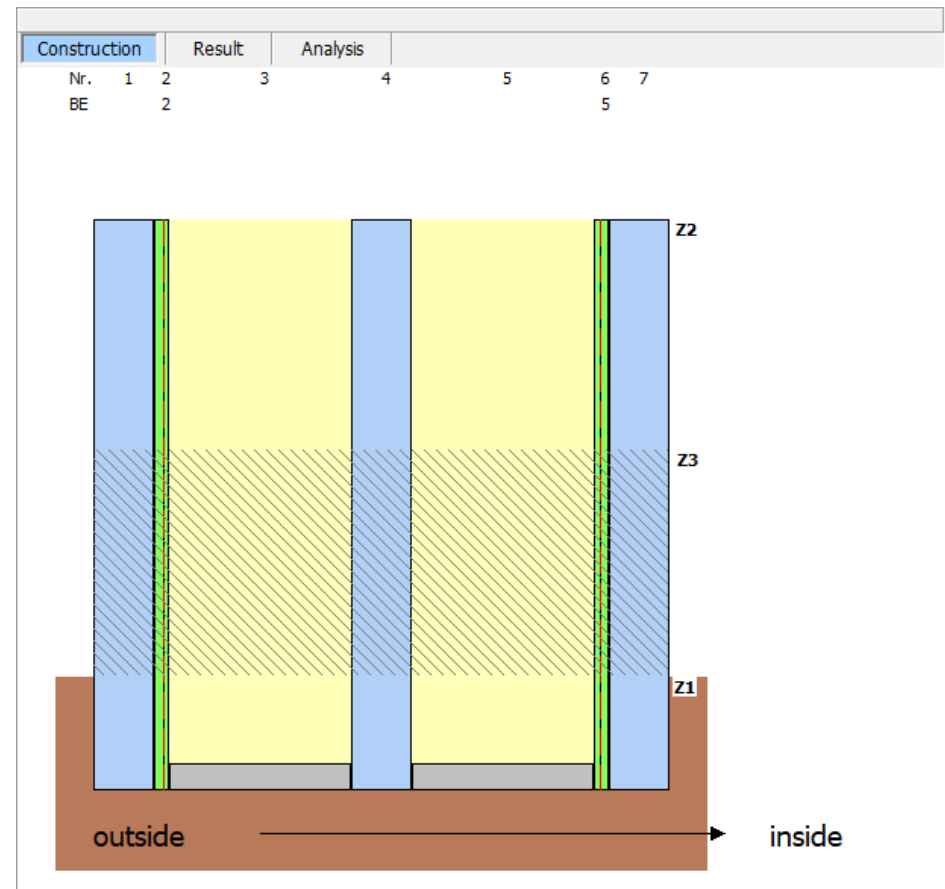
Usually, the frame with a low thermal inertia should be used here, specifying the material and the frame U-value U_f .

On the basis of the data, the temperatures of the glass in the frame (zone 1) are calculated later.



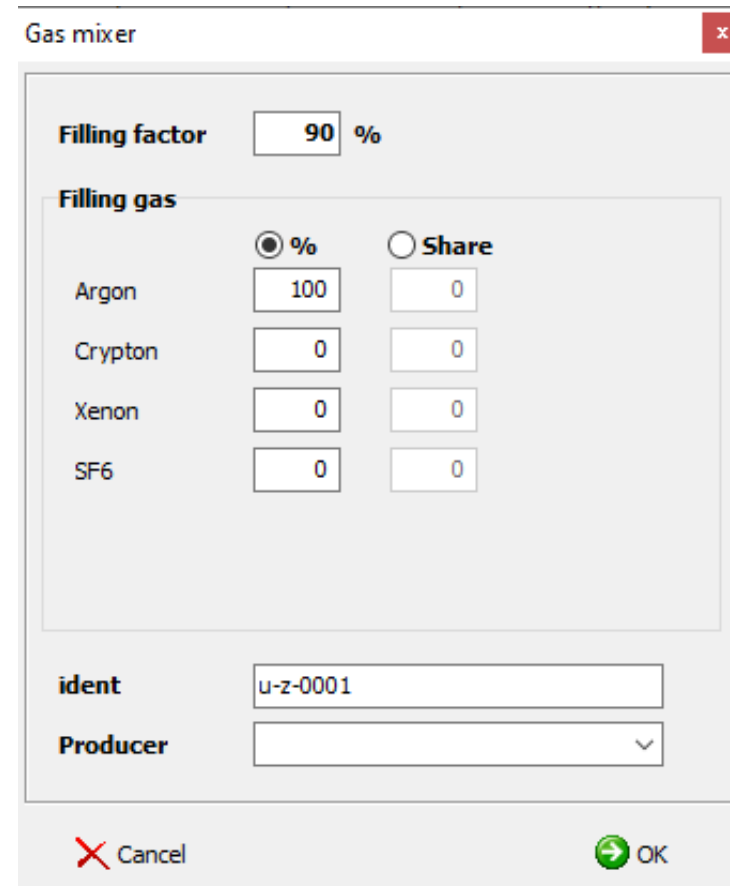
Construction

- The products can be added to the project according to their structure
- The pane structure is displayed graphically



Pane gap

- The gas mixer allows the creation of an individual gas for the intermediate space
- The degree of filling can be changed as desired
- The created gas can then be found in the master data and can also be used for other projects



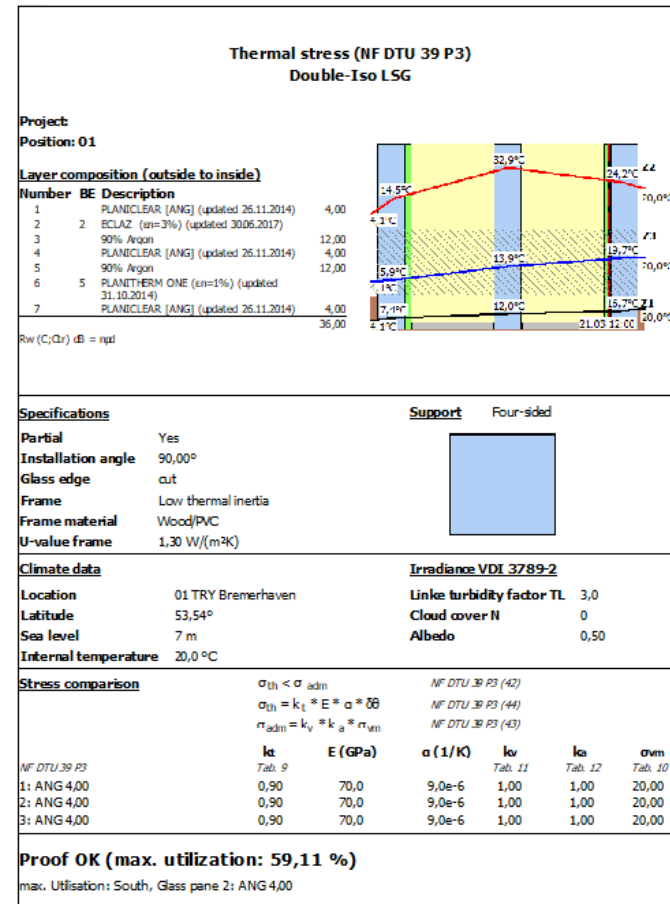
The screenshot shows a 'Gas mixer' dialog box with the following fields and options:

- Filling factor:** 90 %
- Filling gas:** Radio buttons for % (selected) and Share.
- Argon:** 100 %
- Crypton:** 0 %
- Xenon:** 0 %
- SF6:** 0 %
- ident:** u-z-0001
- Producer:** (empty dropdown menu)
- Buttons:** Cancel (red X) and OK (green checkmark).



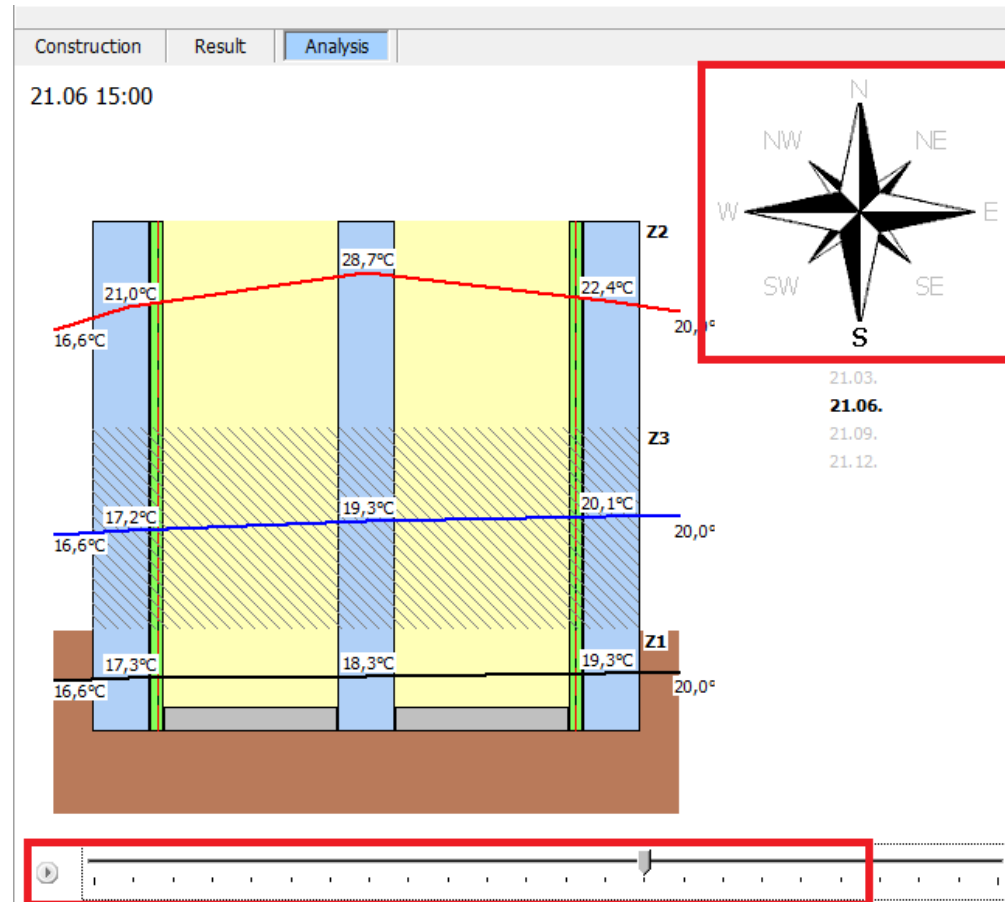
Results

- A clear printout of results shows all values at a glance
- The graphic display of the glass structure with the layer temperatures simplifies the evaluation of the data
- The result of the verification and the max. utilization are clearly and simply displayed



Analysis

- The representation of the temperature distribution is possible in the individual zones for each orientation and each period.

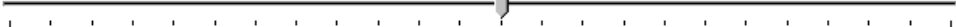
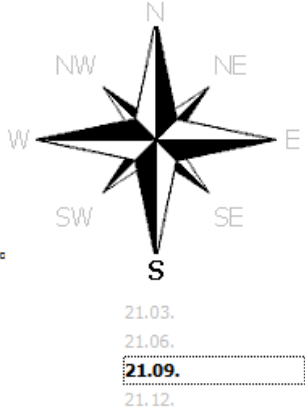
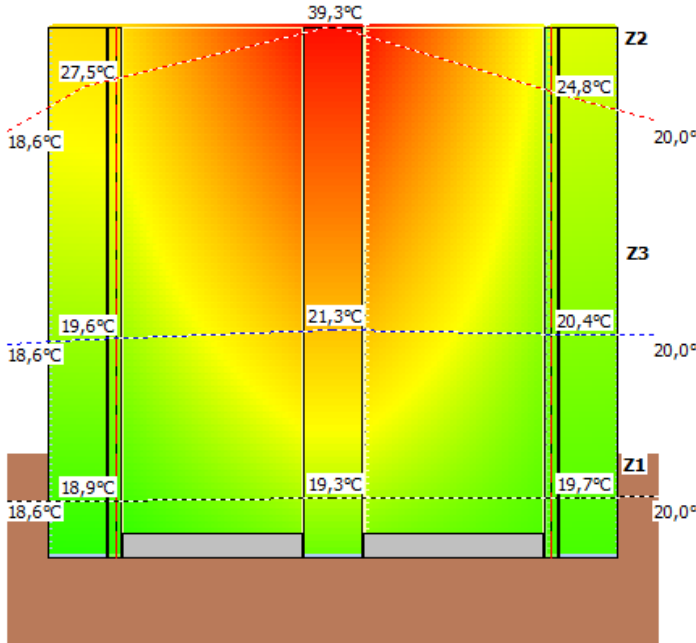




Analysis

➤ Color mismatch display is also possible

21.09 13:00





Further information:

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Building Physics Highlights of Sommer Informatik GmbH:

- [WINISO®](#) – Calculation of two-dimensional heat flows
- [WINSLT®](#) – Professional software for light transmission
- [GLASGLOBAL®](#) – Glass dimensioning according to DIN 18008