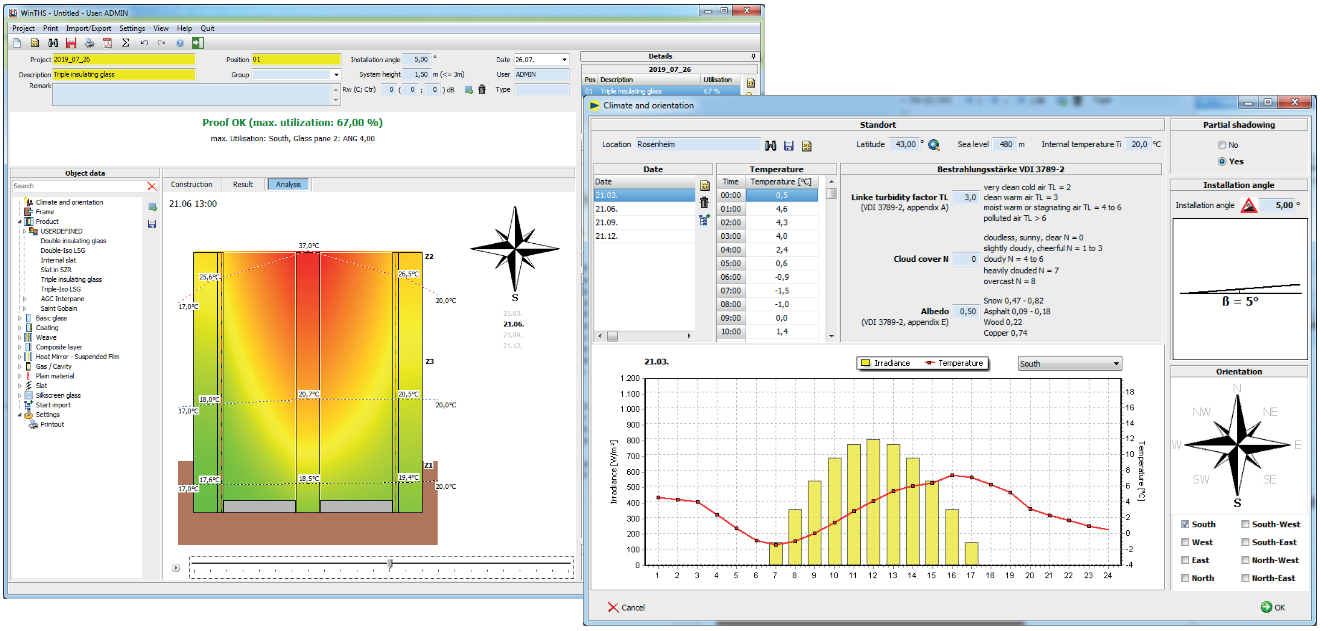
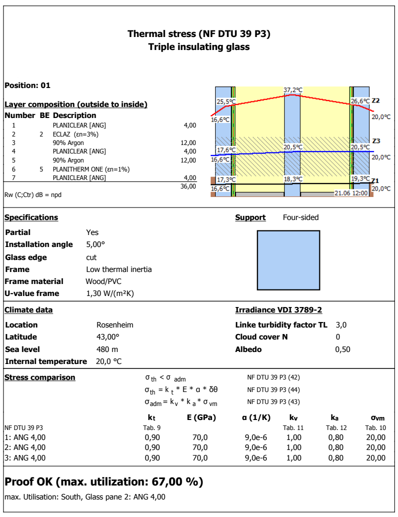
WinTHS

Sommer Informatik

Software solution WinTHS according to NF DTU 39 P3




Thermal stress (NF DTU 39 P3)
Triple insulating glass

Position: 01

Layer composition (outside to inside)

Number	BE	Description	
1		PLANICLEAR [ANG]	4,00
2	2	ECLAZ (εn=3%)	
3		90% Argon	12,00
4		PLANICLEAR [ANG]	4,00
5		90% Argon	12,00
6	5	PLANITHERM ONE (εn=1%)	
7		PLANICLEAR [ANG]	4,00
			36,00

Rw (C;Ctr) dB = npd

Specifications

Partial	Yes
Installation angle	5,00°
Glass edge	cut
Frame	Low thermal inertia
Frame material	Wood/PVC
U-value frame	1,30 W/(m²K)

Support: Four-sided

Climate data

Location	Rosenheim
Latitude	43,00°
Sea level	480 m
Internal temperature	20,0 °C

Irradiance VDI 3789-2

Linke turbidity factor TL	3,0
Cloud cover N	0
Albedo	0,50

Stress comparison

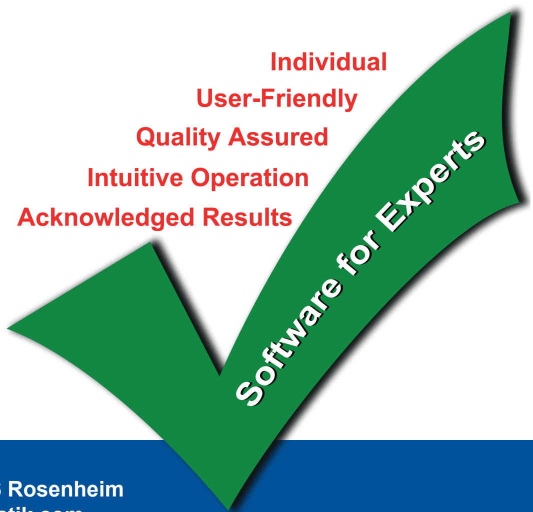
	kt	E (GPa)	α (1/K)	kv	ka	σvm
NF DTU 39 P3	Tab. 9			Tab. 11	Tab. 12	Tab. 10
1: ANG 4,00	0,90	70,0	9,0e-6	1,00	0,80	20,00
2: ANG 4,00	0,90	70,0	9,0e-6	1,00	0,80	20,00
3: ANG 4,00	0,90	70,0	9,0e-6	1,00	0,80	20,00

Proof OK (max. utilization: 67,00 %)
max. Utilisation: South, Glass pane 2: ANG 4,00

Features:

- Determination of low, medium or high thermal inertia of the frame
- Graphical evaluation with false colors
- Consideration of any climate data and orientations
- Calculation of arbitrary disc structures
- Consideration of printed glasses
- Different storage
- Processing the glass edge
- partial shadings
- etc...

Individual
User-Friendly
Quality Assured
Intuitive Operation
Acknowledged Results



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Glass statics software SOMMERGLOBAL extended by WinTHS module

SOMMERGLOBAL, the expert software of Rosenheim-based **Sommer Informatik**, has now been extended with **WinTHS** by an additional module for calculating the climate conditions acting on glass panes, taking geographical location and historical weather data into account.

The climatic conditions are changing dramatically worldwide. The effects not only affect nature, but are also finding their way into many areas of our daily lives - including building physics calculations. This is noticeable, for example, in the worldwide significant increase in damage to glazing due to increased thermal stress. This inevitably poses new challenges for static calculations of glass surfaces - both at the European level and above all in regions exposed to extreme climatic changes. In order to counter these climatic developments, the Rosenheim-based company **Sommer Informatik GmbH** has now introduced **WinTHS**, an add-on module to its **SOMMERGLOBAL** glass software that makes it possible to determine thermal stresses occurring on glass surfaces in advance with regard to extreme weather data and thus drastically minimise the risk of glass breakage.

"With the addition of the **WinTHS** add-on module to our **SOMMERGLOBAL** glass software, which is successful throughout Europe, we are providing our customers with a tool with which they can react proactively to extreme climatic conditions and thus prevent many cases of damage caused as a result. With extreme weather conditions with strongly fluctuating temperatures occurring more and more frequently, an appropriate software-based protection based on exact data and algorithms, which are based on verified standards, becomes more and more important", Dipl.-Inf. Robert Sommer, Managing Director and founder of **Sommer Informatik GmbH**, is sure.

There are many points to consider in the field of glass-static calculations. One aspect that has increasingly come to the fore in recent years is the problem of increased thermal stress. For example, glass may break if the temperature difference between two points of a glass pane is too high. With the **WinTHS** module, exact calculations can be carried out in advance on the basis of existing historical climate data or freely selectable data, which ensure a significant minimisation of thermally justified damage cases. The calculation is based on the French standard **NF DTU 39 P3**. In addition, a European standard is currently being planned, which will be included in the module once it has been adopted.

WinTHS takes a wide variety of factors into account in the calculation that influence the thermal loads on glass surfaces. Of course, the glass structure is fundamental: glass quality, single, double or triple glazing, edge quality (sawn, cut, processed), gaps, gas fillings, type and thickness of the frame or thermal inertia of the respective construction. In addition, many other factors such as installation angle, geographical orientation or partial shading are also taken into account in the stress test, as are special cases due to coatings or inscriptions on the glass panes depending on the material and colour of the respective material.

These values are set in relation to the existing ambient values. The basis for this can be existing climate data for this region (average or extreme values) as well as freely selectable values that anticipate future climate developments. For each measuring point, 24 temperature values per calendar day are calculated ¬ including the thermal stress values between the individual points.

The results of the complex calculation methods are displayed clearly and expressively in the form of graphs. In addition, the temperature-dependent changes of the related calculation points together with the associated stress ratios can be displayed over any period of time by means of a running simulation.

In addition, all relevant calculation results are displayed to the user in a detailed report, including a summary of whether the respective glass structure satisfies the locally prevailing temperature fluctuations and to what extent the thermal loads approach the absolute limit value.

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