



Sommer Informatik GmbH





GLASGLOBAL® AGSB

The software solution for the calculation of glass
statics according to ÖNORM B 3716



Start GLASGLOBAL® AGSB

GLASGLOBAL® AGSB
is a component from the
large product range of
Sommer Informatik

SommerGlobal

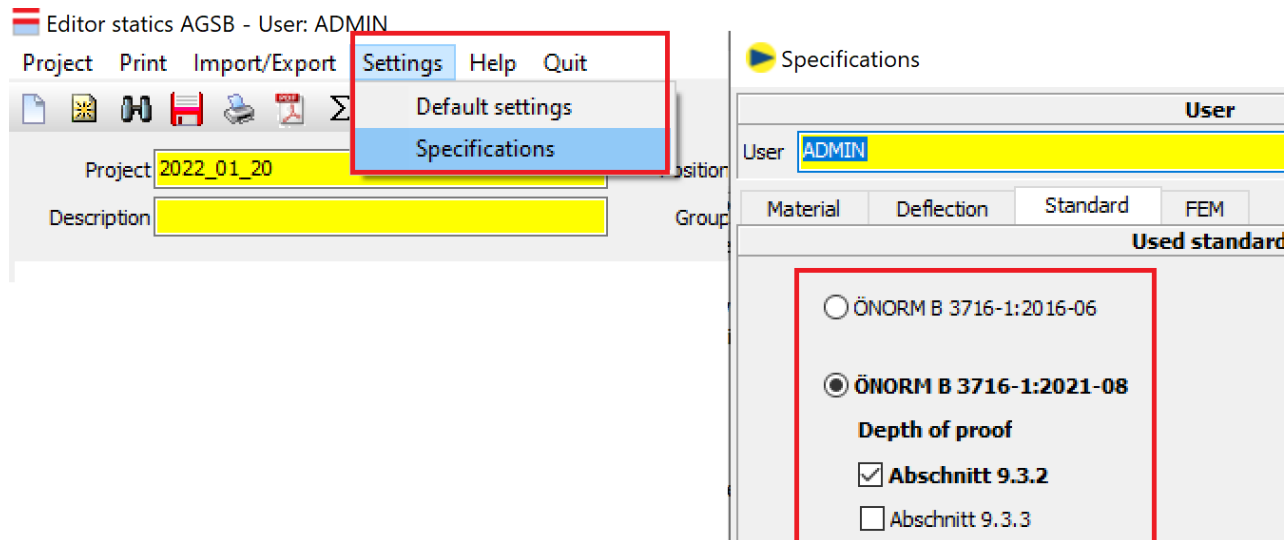
SommerGlobal

GLASGLOBAL® Standard Statik (DIN 18008-1,-2)	WINSLT® Standard Strahlung (EN 410, EN 673)
GLASGLOBAL® FEM Punkthalter Statik (DIN 18008-3)	WINSLT® Experte Strahlung (EN 410, EN 673, EN ISO 52022-3)
GLASGLOBAL® Absturz Statik (DIN 18008-4)	WINSLT® ASHRAE Strahlung (ISO 15099, NFRC 100)
GLASGLOBAL® Begehbar Statik (DIN 18008-5)	WINSLT® Extractor Import Spektraldaten
GLASGLOBAL® Betretbar Statik (DIN 18008-6)	WinTHS Thermischer Stress (NF DTU 39 P3)
GLASGLOBAL® AGSB Statik (ÖNORM B 3716)	WinUw Uw-Wert (EN ISO 10077-1)

Version ÖNORM B 3716-1

Selection of the standard version

- ÖNORM B 3716-1:2016-06
- ÖNORM B 3716-1:2021-08





Use

In advance the determination of the use:

- Horizontal
- Vertical
- Category
- Glazing group

Use

<input type="radio"/> Horizontal glazing	0° - 74°	Usage	Fall protection
<input checked="" type="radio"/> Vertical glazing	75° - 105°	Glazing group	Glazing group 1.1

ÖNORM B 1991-1-1, Tab. 7

Manual input **Info**

Category	qk [kN/m]
<input checked="" type="radio"/> A1	0,5
<input type="radio"/> A2	0,5
<input type="radio"/> B1	0,5
<input type="radio"/> B2	1,0
<input type="radio"/> C1	1,0
<input type="radio"/> C2	1,0
<input type="radio"/> C3.1	1,0
<input type="radio"/> C3.2	1,0
<input type="radio"/> C4	1,0
<input type="radio"/> C5	3,0
<input type="radio"/> D1	1,0
<input type="radio"/> D2	1,0
<input type="radio"/> E Storage areas	1,0



Geometry

Geometry

Standard Expert

$h = 1250$

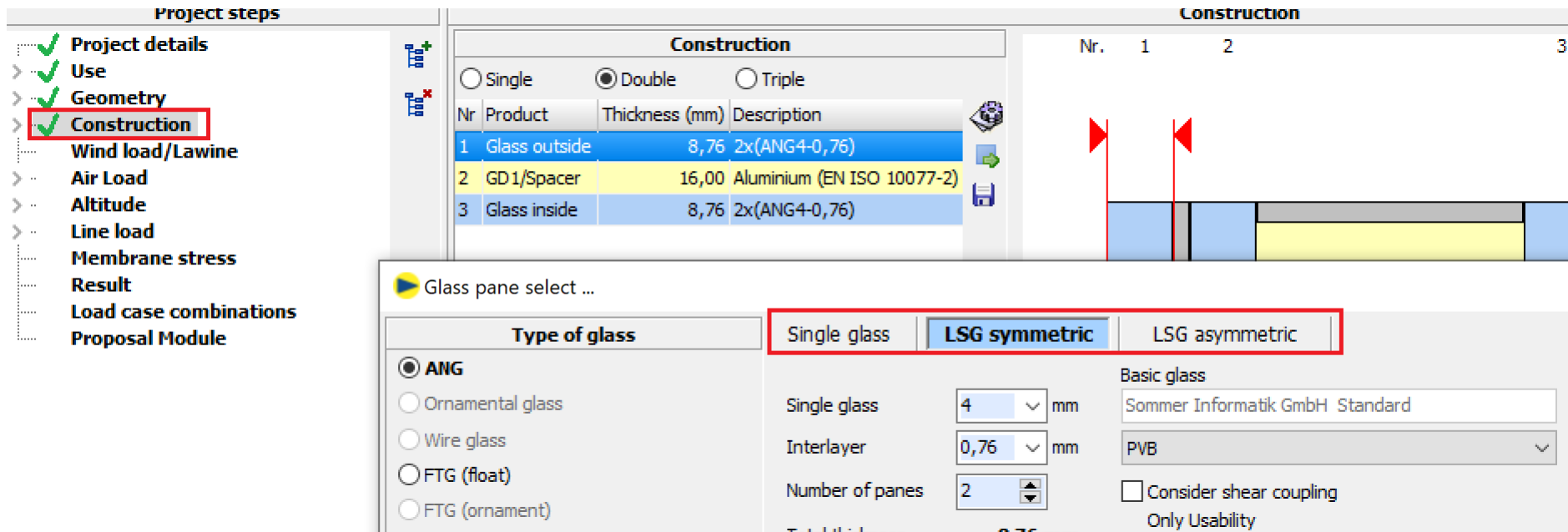
$b = 1500$

$\beta = 90^\circ$

Construction	Shape	Support	Dimensions
<input type="radio"/> Single <input checked="" type="radio"/> Double <input type="radio"/> Triple	<input checked="" type="radio"/> Rectangle	<input checked="" type="radio"/> Four-sided	Width b: 1500 mm
Installation angle	<input type="radio"/> Triangle	<input type="radio"/> Three-sided width free	Height h: 1250 mm
<input type="radio"/> Horizontal glazing 0° - 74°	<input type="radio"/> Parallelogram	<input type="radio"/> Three-sided height free	
<input checked="" type="radio"/> Vertical glazing 75° - 105°	<input type="radio"/> Trapezium	<input type="radio"/> Double-sided height free	
Installation angle 90,00°	<input type="radio"/> Special shapes	<input type="radio"/> Double-sided width free	
		<input type="radio"/> Clamped below	

Pane structure

- Single glass, LSG symmetrical and asymmetrical



The screenshot displays a software interface for defining pane construction. On the left, a 'Project steps' tree shows 'Construction' selected. The main 'Construction' panel includes a table of components and a cross-section diagram.

Nr	Product	Thickness (mm)	Description
1	Glass outside	8,76	2x(ANG4-0,76)
2	GD1/Spacer	16,00	Aluminium (EN ISO 10077-2)
3	Glass inside	8,76	2x(ANG4-0,76)

The 'Construction' panel also features radio buttons for 'Single', 'Double' (selected), and 'Triple'. Below the table, a 'Glass pane select ...' dialog is open, showing 'Type of glass' options (ANG selected) and 'LSG symmetric' selected under 'Single glass'. The 'LSG symmetric' section includes dropdowns for 'Single glass' (4 mm), 'Interlayer' (0,76 mm), and 'Number of panes' (2). The 'Basic glass' section shows 'Sommer Informatik GmbH Standard' and 'PVB' as the interlayer material.



Wind/snow elasticity

- Place info with zip code directory

Wind			
Installation place	Building	Component/Roof	Analysis
<input type="checkbox"/> Manual input		Installation place	
Street	Location	Indoor application	
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
Altitude	<input type="text" value="0"/> m	Terrain category	<input type="text" value="II"/>
	$q_{b,0}$	<input type="text" value="0,00"/> kN/m ²	
		General	
		Wind loads ÖNORM EN 1991-1-4	
		Buildings not vulnerable to vibration with a maximum height of 200m	
		Snow loads ÖNORM EN 1991-1-3	
Area A	<input type="text" value="2,00"/> m ²		

Climate load

➤ Climate loads are either calculated with default values or defined manually

➤ Temperature and air pressure changes, climate loads and surcharges for summer and winter can be included in the calculation

Air Load			
Temperature Change <input type="radio"/> Without <input checked="" type="radio"/> Standard +20K -25K <input type="radio"/> Input Summer <input type="text" value="20"/> K Winter <input type="text" value="-25"/> K		Surcharge Temperature in K Pressure isochor in kN/m ²	
Pressure change <input type="radio"/> Without <input checked="" type="radio"/> Standard -20hPa +40hPa <input type="radio"/> Input Summer <input type="text" value="-20"/> hPa Winter <input type="text" value="40"/> hPa		Summer	
		Absorption <input checked="" type="radio"/> Without increase <input type="radio"/> Absorption 30% to 50% +9 +3 <input type="radio"/> Absorption up to 50% +18 +6	
		Ventilation <input checked="" type="radio"/> Without increase <input type="radio"/> Sun protection inside (ventilated) +9 +3 <input type="radio"/> Sun protection inside (not ventilated) +18 +6 <input type="radio"/> Insulation behind +35 +12	
		Winter	
		<input checked="" type="radio"/> Without increase <input type="radio"/> Unheated buildings -12 -4	
Climate stress in kN/m²			
		GD1	
<input type="checkbox"/> Manual input		Summer <input type="text" value="8,80"/>	
		Winter <input type="text" value="-12,50"/>	



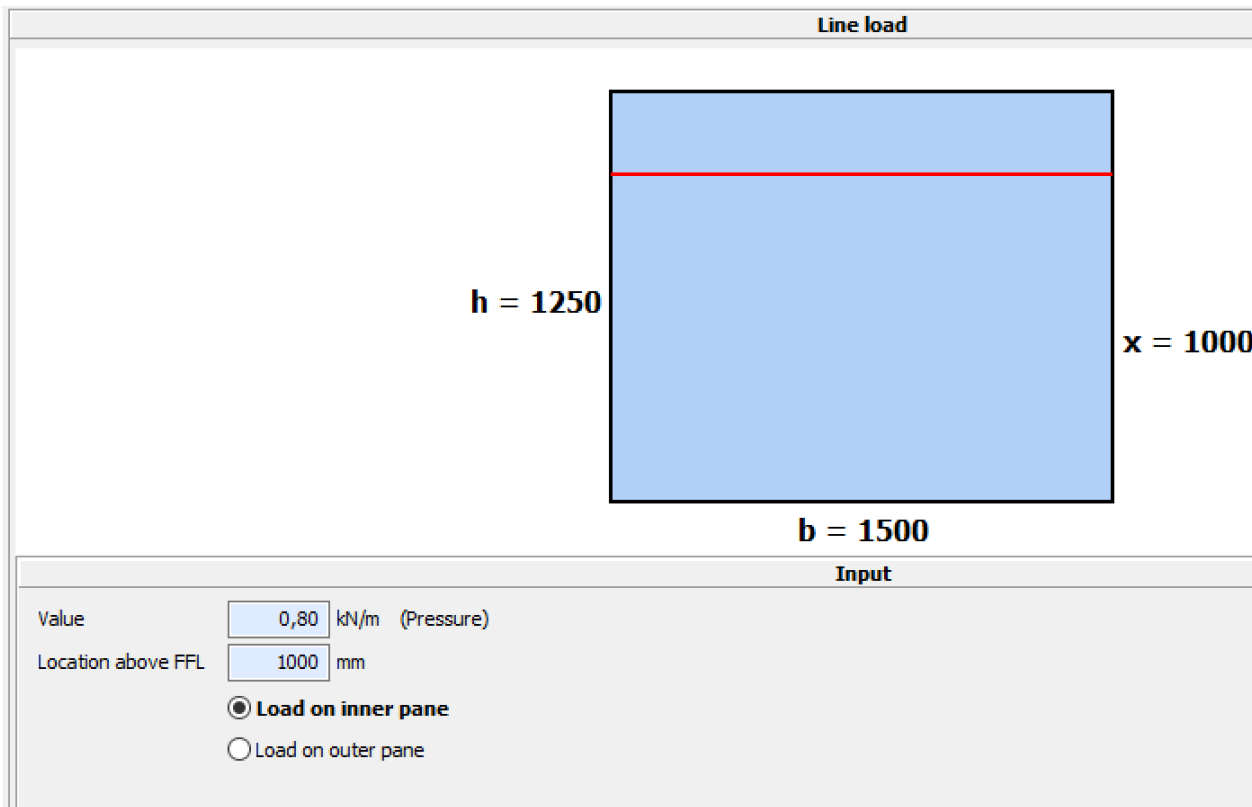
Location height

➤ The height difference between the production site and the installation site resulting in a load for insulating glass can be determined by entering the heights.

Altitude	
Difference between the local height	
<input type="radio"/> Without	Production height: <input type="text" value="300"/> m <input type="button" value="Postcode"/>
<input type="radio"/> Defaults (+600 m / -300 m)	Height of installation: <input type="text" value="0"/> m <input type="button" value="Postcode"/>
<input type="radio"/> Production level known	
<input type="radio"/> Height of installation known:	
<input checked="" type="radio"/> Both heights known	
Load in kN / m²	
<input type="checkbox"/> Manual input	maximum <input type="text" value="-3,60"/>
	minimal <input type="text" value="-3,60"/>

Line load

- Load in kN/m, attack height and load side for vertical glazing



Line load

$h = 1250$

$x = 1000$

$b = 1500$

Input

Value kN/m (Pressure)

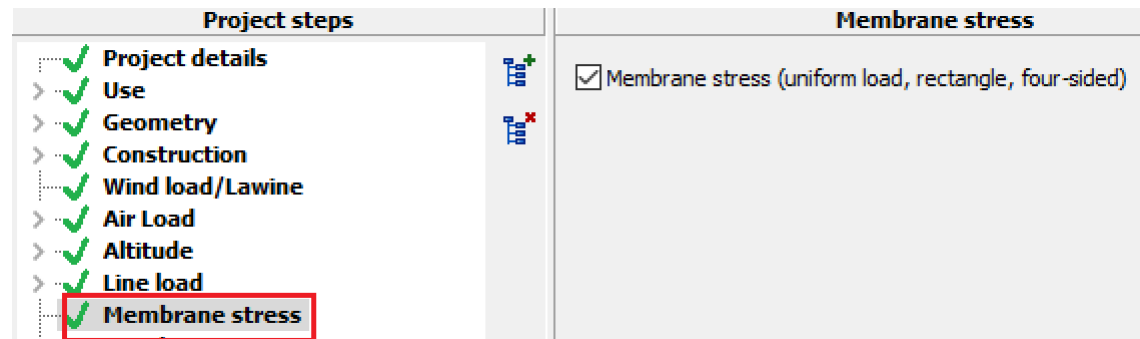
Location above FFL mm

Load on inner pane

Load on outer pane

Membrane voltage

- by simply setting a check mark, the membrane stress can be taken into account in the calculation
- Nonlinear calculation





Result

The output of the results is done by specifying the used parameters

- Overall result
- Indication of the existing utilization

h = 1250

b = 1500

Dead load			Total weight	75,00 kg	Wind load			Manual input		
cos(90,0°) = 0,00										
	top / external	Middle	Bottom / Internal				Load case: Pressure	Load outside	Load indoors	
Dead load	0,20 kN/m ²	-	0,20 kN/m ²				1,00 kN/m ²	0,00 kN/m ²		
effective	0,00 kN/m ²	-	0,00 kN/m ²				-1,00 kN/m ²	0,00 kN/m ²		
Air Load					Local heights					
	GD1	GD2	isochorous pressure				Installation	Production	Load	
Summer	19 K	-	-30 hPa				600 m	300 m	0,00 kN/m ²	
Winter	-26 K	-	30 hPa				600 m	300 m	3,60 kN/m ²	
Load summer	9,46 kN/m ²	-								
Load winter	-11,84 kN/m ²	-								
Line load										
Load	0,80 kN/m		Location above			1000 mm	Load on inner pane (Pressure)			
<p>Proof OK (max. utilization: 91,31 %) ** Check proof of impact resistance!</p> <p>Proof of impact resistance required. Pendulum fall height according to SIA 2057 table 14: 700 mm max. Load case Stress: without lamination, inside, Nr. 18: Weight (1,35 * 1,00), Low installation (1,35 * 1,00), Climate winter (1,00 * 0,60), Wind suction (1,00 * 0,60), Line load (1,50 * 1,00) max. Deflection = -9,56 mm (Load case without lamination, Nr. 15) -> max. chord shortening 0,20 mm Nachweis im Bruchzustand: SIA 2057, table 9: Keine zusätzlichen Nachweise erforderlich (NB0)</p>										



Load combinations

➤ the decisive load cases are generated automatically

➤ there is also the possibility to define own load cases

Load case combinations (Gamma * Psi)

Temporarily (Other) **constantly (weight, installation)**
 User-defined **exceptionally**

The load combinations listed are relevant generally.
 In specific cases, other load cases are relevant.
 For the definition of the load combinations of agents is responsible.

Nr	Weight	Low installation	High installation	Climate winter	Climate summer	Wind pressure	Wind suction	Line load	Print
1	1,35 * 1,00							1,50 * 1,00	Yes
2	1,35 * 1,00						1,50 * 1,00		Yes
3	1,35 * 1,00					1,50 * 1,00			Yes
4	1,35 * 1,00		1,00 * 1,00		1,50 * 1,00				Yes
5	1,35 * 1,00	1,00 * 1,00		1,50 * 1,00					Yes
6	1,35 * 1,00	1,00 * 1,00		1,50 * 0,60			1,50 * 0,60	1,50 * 1,00	Yes
7	1,35 * 1,00		1,00 * 1,00		1,50 * 0,60		1,50 * 0,60	1,50 * 1,00	Yes
8	1,35 * 1,00	1,00 * 1,00		1,50 * 0,60			1,50 * 1,00	1,50 * 0,70	Yes
9	1,35 * 1,00		1,00 * 1,00		1,50 * 0,60		1,50 * 1,00	1,50 * 0,70	Yes
10	1,35 * 1,00	1,00 * 1,00		1,50 * 1,00			1,50 * 0,60	1,50 * 0,70	Yes
11	1,35 * 1,00		1,00 * 1,00		1,50 * 1,00		1,50 * 0,60	1,50 * 0,70	Yes
12	1,35 * 1,00	1,00 * 1,00		1,50 * 0,60		1,50 * 0,60		1,50 * 1,00	Yes
13	1,35 * 1,00		1,00 * 1,00		1,50 * 0,60	1,50 * 0,60		1,50 * 1,00	Yes
14	1,35 * 1,00	1,00 * 1,00		1,50 * 0,60		1,50 * 1,00		1,50 * 0,70	Yes
15	1,35 * 1,00		1,00 * 1,00		1,50 * 0,60	1,50 * 1,00		1,50 * 0,70	Yes
16	1,35 * 1,00	1,00 * 1,00		1,50 * 1,00		1,50 * 0,60		1,50 * 0,70	Yes
17	1,35 * 1,00		1,00 * 1,00		1,50 * 1,00	1,50 * 0,60		1,50 * 0,70	Yes

Lastfall bearbeiten... [Close] [Maximize] [Minimize]

Lastfall

	γ_G, γ_Q	ψ
Gewicht	1,35	1,00
Winddruck	1,50	0,60
Windsog		
Streckenlast	1,50	1,00

[X] Abbrechen [OK]



Suggestion module - glass thicknesses

The Glass *Thicknesses* module lists different thicknesses for the outer and inner pane, which fulfill the verification, and indicates the degree of utilization for each combination

Proposal Module			
Glass thickness		Size matrix	
Thicker sheet as	↓ outside/top	symmetric	↑ inside/below
<input checked="" type="checkbox"/> Not suitable combinations Hide	5	Show suggestions.	0 for all suggestions
<input type="checkbox"/> Filter Gesamtdicke			
Pane outer / top (2x(ANG4-0,76))	Inner pane/bottom (2x(ANG4-0,76))	Result	Note
2 x 4 mm	2 x 4 mm	Proof OK (max. utilization: 76,41 %)	Depth of proof ÖNORM B 3716-1:2021-08: 9.3.2 chosen, t
2 x 5 mm	2 x 3 mm	Proof OK (max. utilization: 96,59 %)	Depth of proof ÖNORM B 3716-1:2021-08: 9.3.2 chosen, t
2 x 5 mm	2 x 4 mm	Proof OK (max. utilization: 73,42 %)	Depth of proof ÖNORM B 3716-1:2021-08: 9.3.2 chosen, t
2 x 5 mm	2 x 5 mm	Proof OK (max. utilization: 67,04 %)	Depth of proof ÖNORM B 3716-1:2021-08: 9.3.2 chosen, t
2 x 6 mm	2 x 3 mm	Proof OK (max. utilization: 92,74 %)	Depth of proof ÖNORM B 3716-1:2021-08: 9.3.2 chosen, t



Suggestion module - size matrix

The *size matrix* represents the results of the current setup as a function of any dimensions.

Proposal Module															
Glass thickness		Size matrix													
Width b	500 mm to 2000 mm	Increment 100 mm		Construction 2x(ANG4-0,76) GD 16 2x(ANG4-0,76)											
Height h	500 mm to 2000 mm	Increment 100 mm		Wind pressure/suction 500 mm x 500 mm: 0,53 / -0,67 kN/m ² 2000 mm x 2000 mm: 0,53 / -0,67 kN/m ²											
<input checked="" type="radio"/> stress utilization in % <input type="radio"/> deflection utilization in %				Snow --- Air Load 8,80 / -12,50 kN/m ² Altitude -3,60 / -3,60 kN/m ² Line load 0,50 kN/m; x = 1000 mm Membrane stress No											
Σ Proposals calculate															
h \ b	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1
500	98,1%	110,5%	122,7%	130,9%	136,4%	139,8%	141,9%	143,0%	143,5%	143,5%	143,2%	142,6%	141,9%	141,2%	140,
600	110,5%	101,3%	112,1%	119,2%	123,7%	126,6%	128,2%	129,0%	129,3%	129,2%	128,8%	128,2%	127,5%	126,6%	125,
700	122,7%	112,1%	98,6%	104,0%	107,2%	109,1%	110,2%	110,6%	110,6%	110,4%	109,9%	109,3%	108,6%	107,9%	107,
800	130,9%	119,2%	104,0%	89,7%	91,8%	92,9%	93,3%	93,4%	93,2%	92,9%	92,4%	91,8%	91,2%	90,5%	89,
900	136,4%	123,7%	107,2%	91,8%	78,7%	79,2%	79,2%	79,0%	78,7%	78,2%	77,7%	77,2%	76,6%	76,1%	75,
1000	139,8%	126,6%	109,1%	92,9%	79,2%	68,1%	67,8%	67,4%	67,0%	66,5%	65,9%	65,4%	64,9%	64,4%	63,
1100	141,9%	128,2%	110,2%	93,3%	79,2%	67,8%	58,7%	58,1%	57,6%	57,0%	56,5%	56,0%	55,5%	55,1%	54,
1200	143,0%	129,0%	110,6%	93,4%	79,0%	67,4%	60,5%	62,4%	64,9%	67,2%	69,2%	71,1%	72,7%	74,2%	75,
1300	143,5%	129,3%	110,6%	93,2%	78,7%	67,0%	68,2%	71,3%	74,4%	78,0%	81,3%	84,4%	87,1%	89,7%	92,
1400	143,5%	129,2%	110,4%	92,9%	78,2%	66,9%	70,6%	74,5%	78,4%	82,4%	86,7%	90,7%	94,5%	98,0%	101,
1500	143,2%	128,8%	109,9%	92,4%	77,7%	67,1%	70,9%	75,2%	79,7%	84,2%	88,8%	93,6%	98,1%	102,4%	106,
1600	142,6%	128,2%	109,3%	91,8%	77,2%	67,0%	70,9%	75,2%	79,9%	84,8%	89,8%	94,7%	99,9%	104,8%	109,
1700	141,9%	127,5%	108,6%	91,2%	76,6%	67,1%	70,9%	75,3%	80,0%	85,0%	90,2%	95,5%	100,8%	106,2%	111,
1800	141,2%	126,6%	107,9%	90,5%	76,1%	67,8%	71,8%	76,1%	80,6%	85,4%	90,7%	96,1%	101,6%	107,0%	112,
1900	140,4%	125,8%	107,1%	89,8%	75,5%	69,0%	73,3%	77,8%	82,6%	87,4%	92,3%	97,0%	102,4%	108,1%	113,
2000	139,6%	124,9%	106,3%	89,1%	74,9%	70,1%	74,6%	79,5%	84,5%	89,6%	94,7%	99,8%	104,7%	109,5%	115,



Interfaces

The exchange of projects is possible between all modules

WinTHS
Thermischer Stress (NF DTU 39 P3)



WINSLT® Experte
Strahlung (EN 410, EN 673, EN ISO 52022-3)



GLASGLOBAL® AGSB
Statik (ÖNORM B 3716)

WinTHS - Untitled - User: ADMIN

Projekt Drucken Import/Export Einstellungen Ansicht Hilfe Beenden

Projekt: 2021_09_22 Position: 01

Bezeichnung: 2fach-Iso VSG Gruppe: [dropdown]

Bemerkung: [text area]

Nachweis OK (max. Ausnutzung: 33,58 %)
max. Ausnutzung: Süd-West, Glasscheibe 1: VSG (Float) 2 x 4,00 (21.09 15:00)

Stammdaten

Suche	Aufbau	Nachweis	Nachweis (Diagramme)
Nr. 1	2	3	4
BE			3

Experte EN 410, EN 673, EN ISO 52022-3 - Untitled - User: ADMIN

Projekt Drucken Import/Export Einstellungen Ansicht Hilfe Beenden

Projekt: 2021_09_22 Position: 01 Einbauwinkel: 90,00°

Bezeichnung: 2fach-Iso VSG Gruppe: [dropdown] Systemhöhe: 1,50 m

Sprache: german Typ Vorlage: LE Rw (C; Ctr) [0] [0] [0]

Bemerkung: [text area]

T_v 0,70 (Lichttransmission) p_v 0,22 (Lichtreflexion außen) g (EN 410) 0,48 U_g (W/m²K) 1

Stammdaten

Suche	Aufbau	Ergebnis	Leistungserklärung	CE
Nr. 1	2	3	4	5
BE				3

Editor Statik Standard - Bearbeiter: ADMIN

Projekt Drucken Import/Export Einstellungen Hilfe Beenden

Projekt: 2021_09_22 Position: 01 Datum: 22.09.2021

Bezeichnung: 2fach-Iso VSG Gruppe: [dropdown] Bearbeiter: ADMIN

Nachweis OK (max. Ausnutzung: 49,03 %)
Membranspannung wäre möglich

max. Lastfall Spannung: voller Verbund, Außen, Nr. 5: Gewicht (1,35 * 1,00), Einbau tief (1,00 * 1,00), Klima Winter (1,00 * 1,00)
max. Durchbiegung = -4,09 mm (Lastfall ohne Verbund, Nr. 9) -> max. Sehnverkurzung 0,04 mm
Nachweis DIN 18008-2:2020-05, 6.1.4.1)
Nachweisverfahren: DIN 18008-2:2020-05, 6.1.4.1) gewährt

Vorgänge

- Projektdetails
- Geometrie
- Aufbau
- Windlast
- Klimalast
- Ortsbohle
- Streckenlast
- Membranspannung
- Ergebnis
- Lastfallkombinationen
- Vorschlagsmodul

Nr.	1	2	3	4
BE				



More information

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