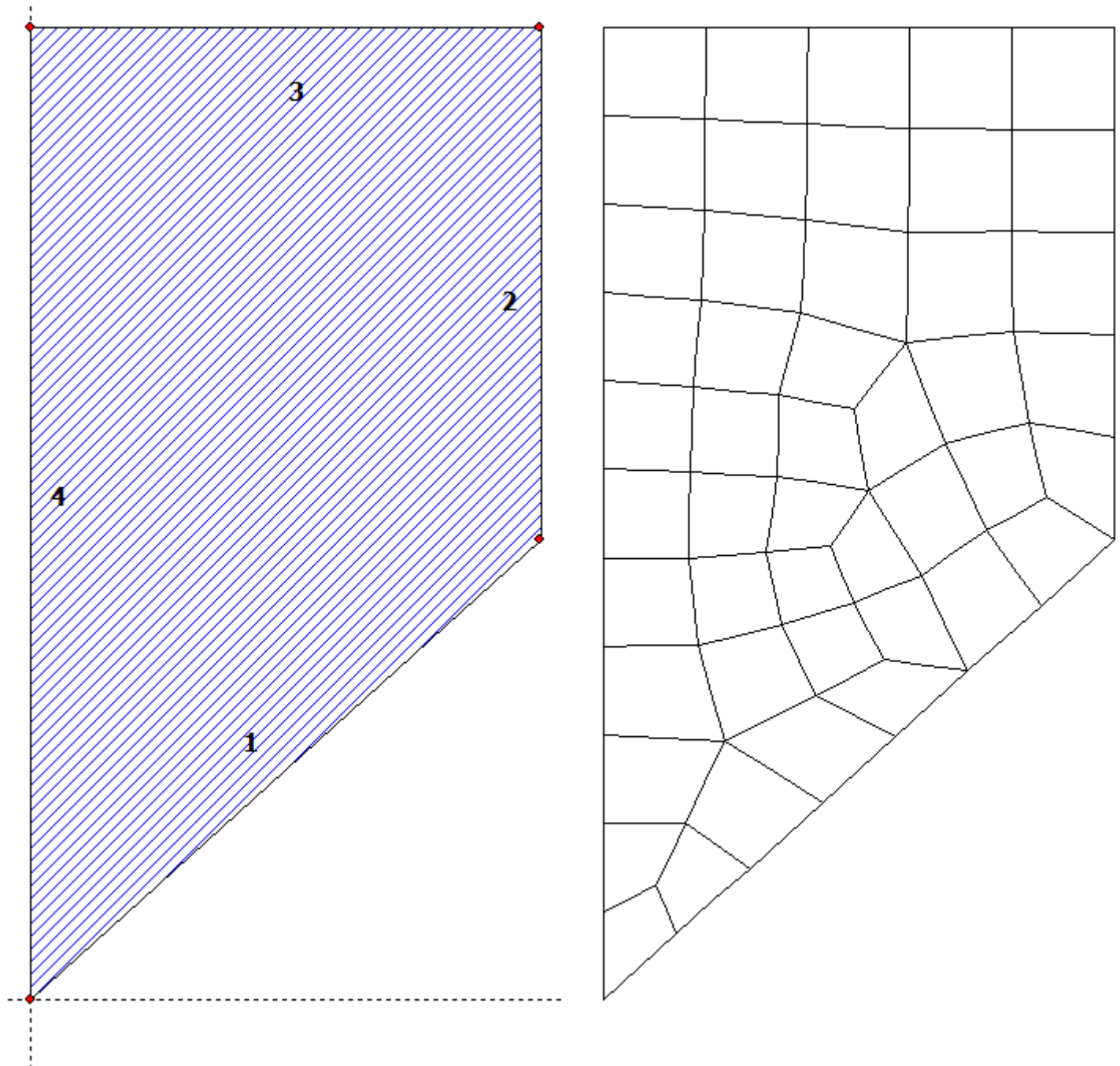


SJ MEPLA Calculation protocol:



Geometry:

Edge	Borderpoint		Arccenter		Direction of rotation +/-
	mm	mm	mm	mm	
1	0.00	0.00			
2	504.00	455.00			
3	504.00	961.00			
4	0.00	961.00			

Supports:

Edge supports:

Edge	Type of supports	
1	w	: fixed - u,v,φ,θ : free (simply supported)
2	w	: fixed - u,v,φ,θ : free (simply supported)
3	w	: fixed - u,v,φ,θ : free (simply supported)
4	w	: fixed - u,v,φ,θ : free (simply supported)

Spacers in insulating glass units:

Edge	E-modul	G-modul	Width
	N/mm ²	N/mm ²	mm
1	100.00	0.00	5.00
2	100.00	0.00	5.00
3	100.00	0.00	5.00
4	100.00	0.00	5.00

Spring supports:

Package	Layer	x	y	z	C _x	C _y	C _z	C _φ
C _θ		mm	mm	mm	N/mm	N/mm	N/mm	Nmm
1	1	0.0	0.0	0.0	1.000e+000	1.000e+000	0.000e+000	0.00e+000
0.00e+000								
1	1	504.0	455.0	0.0	0.000e+000	1.000e+000	0.000e+000	0.00e+000
0.00e+000								
2	1	0.0	0.0	0.0	1.000e+000	1.000e+000	0.000e+000	0.00e+000
0.00e+000								
2	1	504.0	455.0	0.0	0.000e+000	1.000e+000	0.000e+000	0.00e+000
0.00e+000								

Layers:

Layer order:

Package	Layer	Description
2	1	Glass, heat toughened
1	3	Float glass
1	2	PVB long time loading
1	1	Float glass

Mechanical properties:

Package	Layer	E-mod.	ν	Thickness	Density	α _t	ΔT
		N/mm ²		mm	kg/m ³	1/K	K
2	1	70000.00	0.23	8.00	2550.00	1.0000e-005	0.00
1	3	70000.00	0.23	5.00	2550.00	1.0000e-005	0.00
1	2	0.03	0.50	0.76	1070.00	8.0000e-005	0.00
1	1	70000.00	0.23	5.00	2550.00	1.0000e-005	0.00

Intermediate pane space:

Package	Thick	Int.-pressure	ΔT	γ
from_to	mm	N/mm ²	K	1/K
1 2	16.00	1.01000e-001	0.00	3.66000e-003

External pressure:

Pressure	ΔH (Difference of height)
N/mm ²	m
1.01000e-001	0.0 (= 1.01000e-001 N/mm ²)

Loads:

Climate loads:

	p_a	p_i	p_i	p_i	ΔT	ΔT	ΔT	ΔH	Situation
	N/mm ²	N/mm ²	N/mm ²	N/mm ²	K	K	K	m	
	0.1030	0.0990	0.0990	0.0990	-25.0	-25.0	-25.0	-300	Winter (default)
	0.1010	0.1030	0.1030	0.1030	29.0	29.0	29.0	600	Summer (default)
climate load	0.1010	0.1010	0.0000	0.0000	0.0	0.0	0.0	0	Self defined
loads	0.1010	0.1010	0.1010	0.1010	0.0	0.0	0.0	0	without climate

Constant and linear increasing faceloads: see loadcase

Dead weight:

Inclination of pane: 90.00° degree

Direction vector of gravity acceleration [9.81 m/s²]:

Vx	Vy	Vz
0.00000	-1.00000	0.00000

Calculation approaches:

large deflections, non-linear, (transversal to the plane surface)

static calculation

Insulating unit spacer with linear behavior for tension and compression

Characteristics of the finite element mesh:

Element size	: 90.0 mm
Number of elements	: 47
Number of nodes	: 217 (per package)
Number of unknown	: 2926

Loadcase: 1 (ciężar własny + wiatr parcie + klimatyczne zima)

=====

Coefficients / safety factors:

-- Climate --

Dead weight	Wind	Snow	Line	Point	$\Delta p, \Delta T$	ΔH	Shear
1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	-0.00040	0.00000	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²	
outside	-0.00040 N/mm ² = -0.00040 * 1.00 + 0.00000 * 0.00	
inside	0.00000 N/mm ² = 0.00000 * 1.00	

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height	: -300.0 m = -300.0 * 1.00
Outside air pressure	: 0.10660 N/mm ² = 0.10300 - 12.e-6 * -300.0
Inside pressure, gap 1	: 0.09900 N/mm ²
Temperature difference, gap 1	: -25.0°C = -25.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

	- Position-	Displacement
Package	x y w	
	mm mm mm	
2	228.42 627.21 -1.17 (min)	
	0.00 0.00 0.00 (max)	
1	0.00 0.00 0.00 (min)	
	228.42 627.21 2.21 (max)	

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	16.85
1	3	488.51	452.80	23.95
1	1	488.51	452.80	23.92

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
----- (Szz) -----				
1	1	8.11	7.33	0.000 (max)

1	8.11	7.33	0.000 (min)
			----- (Szz) -----
2	1	504.00	466.41 0.000 (max)
	1	504.00	466.41 0.000 (min)
			----- (Szz) -----
3	1	492.64	961.00 0.000 (max)
	1	492.64	961.00 0.000 (min)
			----- (Szz) -----
4	1	0.00	9.85 0.000 (max)
	1	0.00	9.85 0.000 (min)

Intermediate pane space:

Package Inside pressure
 from_to_____N/mm²____
 1 2 9.84012927e-002

Springs:

	Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M_φ	M_θ									
(x / y)	mm	mm	mm	rad	rad		N	N	N	Nmm
	(0.00 /	0.00)							
1	1	-0.00	-52.65	-0.00	0.0002	0.0000	-0.00	-52.65	-0.00	
0.00	0.00									
	(504.00 /	455.00)							
1	1	-8.91	-42.78	-0.00	0.0029	-0.0013	-0.00	-42.78	-0.00	
0.00	-0.00									
	(0.00 /	0.00)							
2	1	-0.00	-40.82	0.00	-0.0000	-0.0000	-0.00	-40.82	0.00	-
0.00	-0.00									
	(504.00 /	455.00)							
2	1	-6.91	-33.17	0.00	-0.0019	0.0008	-0.00	-33.17	0.00	-
0.00	0.00									

Loadcase: 2 (ciężar własny + wiatr parcie + klimatyczne lato)

=====

Coefficients / safety factors:

-- Climate --

Dead weight_____Wind_____Snow_____Line_____Point_____Δp,ΔT_____ΔH_____Shear_____

1.00 1.00 0.00 0.00 0.00 1.00 1.00 1.00

Loadcase combination:

Wind Snow Climate

_____N/mm²_____N/mm²_____

outside -0.00040 0.00000 Summer (default)

inside 0.00000

Resulting face load from wind and snow:

_____ N/mm² _____
 outside -0.00040 N/mm² = -0.00040 * 1.00 + 0.00000 * 0.00
 inside 0.00000 N/mm² = 0.00000 * 1.00

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height : 600.0 m = 600.0 * 1.00
 Outside air pressure : 0.09380 N/mm² = 0.10100 - 12.e-6 * 600.0
 Inside pressure, gap 1 : 0.10300 N/mm²
 Temperature difference, gap 1 : 29.0°C = 29.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

Package	- Position-		Displacement w
	x	y	
	mm	mm	
2	0.00	0.00	0.00 (min)
	228.42	627.21	1.28 (max)
1	228.42	627.21	-2.61 (min)
	0.00	0.00	0.00 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	18.46
1	3	488.51	452.80	28.45
1	1	488.51	452.80	28.42

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
----- (Szz) -----				
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
----- (Szz) -----				
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
----- (Szz) -----				
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
----- (Szz) -----				

4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package Inside pressure
 from_to _____ N/mm² ____
 1 2 1.03629095e-001

Springs:

Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M_φ	M_θ	(x /							
y)		mm	mm	mm	rad	rad	N	N	Nmm
		(0.00 /	0.00)						
1	1	-0.00	-52.65	0.00	-0.0003	-0.0000	-0.00	-52.65	0.00 -
0.00		-0.00							
		(504.00 /	455.00)						
1	1	-8.91	-42.78	0.00	-0.0034	0.0016	-0.00	-42.78	0.00 -
0.00		0.00							
		(0.00 /	0.00)						
2	1	-0.00	-40.82	-0.00	0.0000	0.0000	-0.00	-40.82	-0.00
0.00		0.00							
		(504.00 /	455.00)						
2	1	-6.91	-33.17	-0.00	0.0021	-0.0009	-0.00	-33.17	-0.00
0.00		-0.00							

Loadcase: 3 (ciężar własny + wiatr ssanie + klimatyczne zima)

=====

Coefficients / safety factors:

-- Climate --

Dead weight	Wind	Snow	Line	Point	Δp, ΔT	ΔH	Shear
1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	0.00066	0.00000	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²	
outside	0.00066 N/mm ² =	0.00066 * 1.00 + 0.00000 * 0.00
inside	0.00000 N/mm ² =	0.00000 * 1.00

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height : -300.0 m = -300.0 * 1.00
 Outside air pressure : 0.10660 N/mm² = 0.10300 - 12.e-6 * -300.0
 Inside pressure, gap 1 : 0.09900 N/mm²
 Temperature difference, gap 1 : -25.0°C = -25.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

Package	- Position-		Displacement
	x	y	w
	mm	mm	mm
2	228.42	627.21	-1.05 (min)
	0.00	0.00	0.00 (max)
1	0.00	0.00	0.00 (min)
	228.42	627.21	2.25 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	15.15
1	3	488.51	452.80	24.47
1	1	488.51	452.80	24.45

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
				(Szz) -----
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
				(Szz) -----
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
				(Szz) -----
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
				(Szz) -----
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package	Inside pressure
from_to	N/mm ²
1 2	9.82124710e-002

Springs:

Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M φ	M θ								
(x /	y)	mm	mm	mm	rad	rad	N	N	Nmm
(0.00 /	0.00)							
1	1	-0.00	-52.65	-0.00	0.0002	0.0000	-0.00	-52.65	-0.00
0.00	0.00								
(504.00 /	455.00)							
1	1	-8.91	-42.78	-0.00	0.0029	-0.0014	-0.00	-42.78	-0.00
0.00	-0.00								
(0.00 /	0.00)							
2	1	-0.00	-40.82	0.00	-0.0000	-0.0000	-0.00	-40.82	0.00
0.00	-0.00								-
(504.00 /	455.00)							
2	1	-6.91	-33.17	0.00	-0.0017	0.0008	-0.00	-33.17	0.00
0.00	0.00								-

Loadcase: 4 (ciężar własny + wiatr ssanie + klimatyczne lato)

=====

Coefficients / safety factors:

-- Climate --

Dead weight	Wind	Snow	Line	Point	$\Delta p, \Delta T$	ΔH	Shear
1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	0.00066	0.00000	Summer (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²
outside	0.00066 N/mm ² = 0.00066 * 1.00 + 0.00000 * 0.00
inside	0.00000 N/mm ² = 0.00000 * 1.00

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height	:	600.0 m = 600.0 * 1.00
Outside air pressure	:	0.09380 N/mm ² = 0.10100 - 12.e-6 * 600.0
Inside pressure, gap 1	:	0.10300 N/mm ²
Temperature difference, gap 1	:	29.0°C = 29.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

Package	- Position-		Displacement
	x	y	w
	mm	mm	mm
2	0.00	0.00	0.00 (min)
	228.42	627.21	1.40 (max)
1	228.42	627.21	-2.57 (min)
	0.00	0.00	0.00 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	20.18
1	3	488.51	452.80	27.96
1	1	488.51	452.80	27.94

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
				(Szz) -----
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
				(Szz) -----
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
				(Szz) -----
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
				(Szz) -----
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package	Inside pressure
from_to	N/mm ²
1 2	1.03451613e-001

Springs:

Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M _φ	M _θ								
(x /		mm	mm	mm	rad	rad	N	N	N
y)									Nmm
(0.00 /	0.00						
1	1	0.00	-52.65	0.00	-0.0003	-0.0000	0.00	-52.65	0.00
0.00		-0.00							-

(504.00 / 455.00)										
1	1	-8.91	-42.78	0.00	-0.0033	0.0016	-0.00	-42.78	0.00	-
0.00	0.00									
(0.00 / 0.00)										
2	1	-0.00	-40.82	-0.00	0.0000	0.0000	-0.00	-40.82	-0.00	
0.00	0.00									
(504.00 / 455.00)										
2	1	-6.91	-33.17	-0.00	0.0023	-0.0010	-0.00	-33.17	-0.00	
0.00	-0.00									

Loadcase: 5 (ciężar własny + wiatr parcie)

=====

Coefficients / safety factors:

-- Climate --

Dead weight	Wind	Snow	Line	Point	$\Delta p, \Delta T$	ΔH	Shear
1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	-0.00040	0.00000	without climate loads
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²	
outside	-0.00040 N/mm ² = -0.00040 * 1.00 + 0.00000 * 0.00	
inside	0.00000 N/mm ² = 0.00000 * 1.00	

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height	:	0.0 m = 0.0 * 0.00
Outside air pressure	:	0.10100 N/mm ² = 0.10100 - 12.e-6 * 0.0
Inside pressure, gap 1	:	0.10100 N/mm ²
Temperature difference, gap 1	:	0.0°C = 0.0 * 0.00

Calculation results:

Minimum and maximum displacements w:

	- Position-		Displacement
Package	x	y	w
	mm	mm	mm
2	228.42	627.21	-0.05 (min)

	0.00	0.00	0.00 (max)
1	228.42	627.21	-0.02 (min)
	0.00	0.00	0.00 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	0.64
1	3	488.51	452.80	0.20
1	1	61.86	63.63	0.51

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
				(Szz) -----
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
				(Szz) -----
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
				(Szz) -----
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
				(Szz) -----
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package	Inside pressure
from_to	N/mm ²
1 2	1.01067766e-001

Springs:

Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M _φ	M _θ								
(x /	y)	mm	mm	mm	rad	rad	N	N	Nmm
		(0.00 / 0.00)							
1	1	0.00	-52.65	0.00	-0.0000	-0.0000	0.00	-52.65	0.00
0.00		-0.00							-
		(504.00 / 455.00)							
1	1	-8.91	-42.78	0.00	-0.0000	0.0000	-0.00	-42.78	0.00
0.00		0.00							-
		(0.00 / 0.00)							
2	1	0.00	-40.82	0.00	-0.0000	-0.0000	0.00	-40.82	0.00
0.00		-0.00							-
		(504.00 / 455.00)							
2	1	-6.90	-33.17	0.00	-0.0001	0.0000	-0.00	-33.17	0.00
									-

0.00 0.00

Loadcase: 6 (ciężar własny + wiatr ssanie)

=====

Coefficients / safety factors:

-- Climate ---

Dead weight	Wind	Snow	Line	Point	$\Delta p, \Delta T$	ΔH	Shear
1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	0.00066	0.00000	without climate loads
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²
outside	0.00066 N/mm ² = 0.00066 * 1.00 + 0.00000 * 0.00
inside	0.00000 N/mm ² = 0.00000 * 1.00

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height	:	0.0 m = 0.0 * 0.00
Outside air pressure	:	0.10100 N/mm ² = 0.10100 - 12.e-6 * 0.0
Inside pressure, gap 1	:	0.10100 N/mm ²
Temperature difference, gap 1	:	0.0°C = 0.0 * 0.00

Calculation results:

Minimum and maximum displacements w:

	- Position-	Displacement
Package	x y w	
	mm mm mm	
2	0.00 0.00 0.00 (min)	
	228.42 627.21 0.07 (max)	
1	0.00 0.00 0.00 (min)	
	228.42 627.21 0.03 (max)	

Maximum principal stress:

Package Layer	x	y	σ
	mm	mm	N/mm ²

2	1	488.51	452.80	1.07
1	3	488.51	452.80	0.34
1	1	61.86	63.63	0.52

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
				(Szz) -----
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
				(Szz) -----
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
				(Szz) -----
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
				(Szz) -----
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package	Inside pressure
from_to	N/mm ²
1 2	1.00888293e-001

Springs:

	Package	Layer	u	v	w	ϕ	θ	Fx	Fy	Fz
M _φ	M _θ									
(x /	mm	mm	mm	rad	rad					
y)										
	(0.00 /	0.00)							
1	1	-0.00	-52.65	-0.00	0.0000	0.0000	-0.00	-52.65	-0.00	
0.00		0.00								
	(504.00 /	455.00)							
1	1	-8.91	-42.78	-0.00	0.0000	-0.0000	-0.00	-42.78	-0.00	
0.00		-0.00								
	(0.00 /	0.00)							
2	1	-0.00	-40.82	-0.00	0.0000	0.0000	-0.00	-40.82	-0.00	
0.00		0.00								
	(504.00 /	455.00)							
2	1	-6.90	-33.17	-0.00	0.0001	-0.0001	-0.00	-33.17	-0.00	
0.00		-0.00								

Loadcase: 7 (klimatyczne zima)

=====

Coefficients / safety factors:

-- Climate ---							
Dead weight	Wind	Snow	Line	Point	$\Delta p, \Delta T$	ΔH	Shear
0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm ²	N/mm ²	
outside	0.00000	0.00000	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm ²	
outside	0.00000 N/mm ² = 0.00000 * 0.00 + 0.00000 * 0.00	
inside	0.00000 N/mm ² = 0.00000 * 0.00	

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height	: -300.0 m = -300.0 * 1.00
Outside air pressure	: 0.10660 N/mm ² = 0.10300 - 12.e-6 * -300.0
Inside pressure, gap 1	: 0.09900 N/mm ²
Temperature difference, gap 1	: -25.0°C = -25.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

		- Position-	Displacement
Package		x y	w
		mm mm	mm
2		228.42 627.21	-1.13 (min)
		0.00 0.00	0.00 (max)
1		0.00 0.00	0.00 (min)
		228.42 627.21	2.22 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm ²
2	1	488.51	452.80	16.22
1	3	488.51	452.80	24.14
1	1	488.51	452.80	24.14

Stresses within the spacer:

Edge	Gap	x	y	σ
		mm	mm	N/mm ²
----- (Szz) -----				

1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
		----- (Szz) -----		
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
		----- (Szz) -----		
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)
		----- (Szz) -----		
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package Inside pressure
 from_to_____N/mm²____
 1 2 9.83292720e-002

Springs:

Package Layer	u	v	w	φ	θ	Fx	Fy	Fz
M_φ	M_θ							
(x /								
y)_____mm_____mm_____mm_____rad_____rad_____N_____N_____N_____Nmm_____								
(0.00 / 0.00)								
1 1 0.00 0.00 -0.00 0.0002 0.0000 0.00 0.00 -0.00								
0.00 0.00								
(504.00 / 455.00)								
1 1 -0.01 -0.00 -0.00 0.0029 -0.0013 -0.00 -0.00 -0.00								
0.00 -0.00								
(0.00 / 0.00)								
2 1 -0.00 -0.00 0.00 -0.0000 -0.0000 -0.00 -0.00 0.00 -								
0.00 -0.00								
(504.00 / 455.00)								
2 1 -0.00 0.00 0.00 -0.0018 0.0008 -0.00 0.00 0.00 -								
0.00 0.00								

Loadcase: 8 (klimatyczne lato)

=====

Coefficients / safety factors:

-- Climate --

Dead weight_____Wind_____Snow_____Line_____Point_____Δp,ΔT_____ΔH_____Shear_____

0.00 0.00 0.00 0.00 0.00 1.00 1.00 1.00

Loadcase combination:

Wind Snow Climate

_____N/mm²_____N/mm²_____

outside 0.00000 0.00000 Summer (default)
inside 0.00000

Resulting face load from wind and snow:

	<u>N/mm²</u>	
outside	0.00000 N/mm ² =	0.00000 * 0.00 + 0.00000 * 0.00
inside	0.00000 N/mm ² =	0.00000 * 0.00

Additional partial faceloads (linear distributed, outside) - here not selected

Climatic loading:

Difference of height : 600.0 m = 600.0 * 1.00
Outside air pressure : 0.09380 N/mm² = 0.10100 - 12.e-6 * 600.0
Inside pressure, gap 1 : 0.10300 N/mm²
Temperature difference, gap 1 : 29.0°C = 29.0 * 1.00

Calculation results:

Minimum and maximum displacements w:

	- Position-		Displacement
Package	x	y	w
	<u>mm</u>	<u>mm</u>	<u>mm</u>
2	0.00	0.00	0.00 (min)
	228.42	627.21	1.33 (max)
1	228.42	627.21	-2.60 (min)
	0.00	0.00	0.00 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		<u>mm</u>	<u>mm</u>	<u>N/mm²</u>
2	1	488.51	452.80	19.12
1	3	488.51	452.80	28.26
1	1	488.51	452.80	28.26

Stresses within the spacer:

Edge	Gap	x	y	σ
		<u>mm</u>	<u>mm</u>	<u>N/mm²</u>
				----- (Szz) -----
1	1	8.11	7.33	0.000 (max)
	1	8.11	7.33	0.000 (min)
				----- (Szz) -----
2	1	504.00	466.41	0.000 (max)
	1	504.00	466.41	0.000 (min)
				----- (Szz) -----
3	1	492.64	961.00	0.000 (max)
	1	492.64	961.00	0.000 (min)

----- (Szz) -----				
4	1	0.00	9.85	0.000 (max)
	1	0.00	9.85	0.000 (min)

Intermediate pane space:

Package	Inside pressure
from_to	N/mm ²
1 2	1.03562860e-001

Springs:

Package	Layer	u	v	w	φ	θ	Fx	Fy	Fz
M _φ	M _θ								
(x /									
y) mm	mm	mm	mm	rad	rad	N	N	N	Nmm
(0.00 /	0.00)								
1 1	0.00	0.00	0.00	-0.0003	-0.0000	0.00	0.00	0.00	-
0.00	-0.00								
(504.00 /	455.00)								
1 1	-0.01	-0.00	0.00	-0.0034	0.0016	-0.00	-0.00	0.00	-
0.00	0.00								
(0.00 /	0.00)								
2 1	0.00	0.00	-0.00	0.0000	0.0000	0.00	0.00	-0.00	
0.00	0.00								
(504.00 /	455.00)								
2 1	-0.00	-0.00	-0.00	0.0021	-0.0010	-0.00	-0.00	-0.00	
0.00	-0.00								

Loadcase result:

Maximum principal stress:

Package	Layer	σ	Loadcase
		N/mm ²	
2	1	20.18	4
1	3	28.45	2
1	1	28.42	2

Minimum and maximum displacements w:

Package	Displacement	Loadcase
	mm	
2	1.40 (max)	4
2	-1.17 (min)	1
1	2.25 (max)	3
1	-2.61 (min)	2