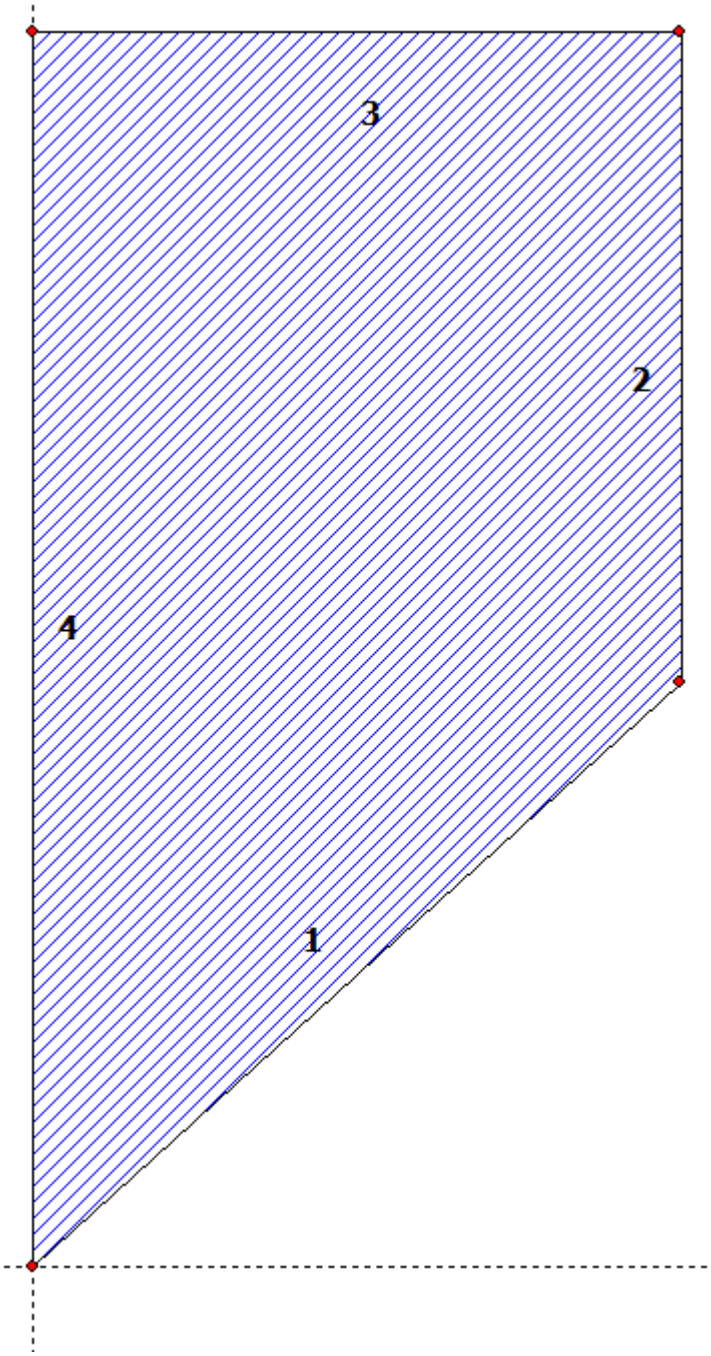
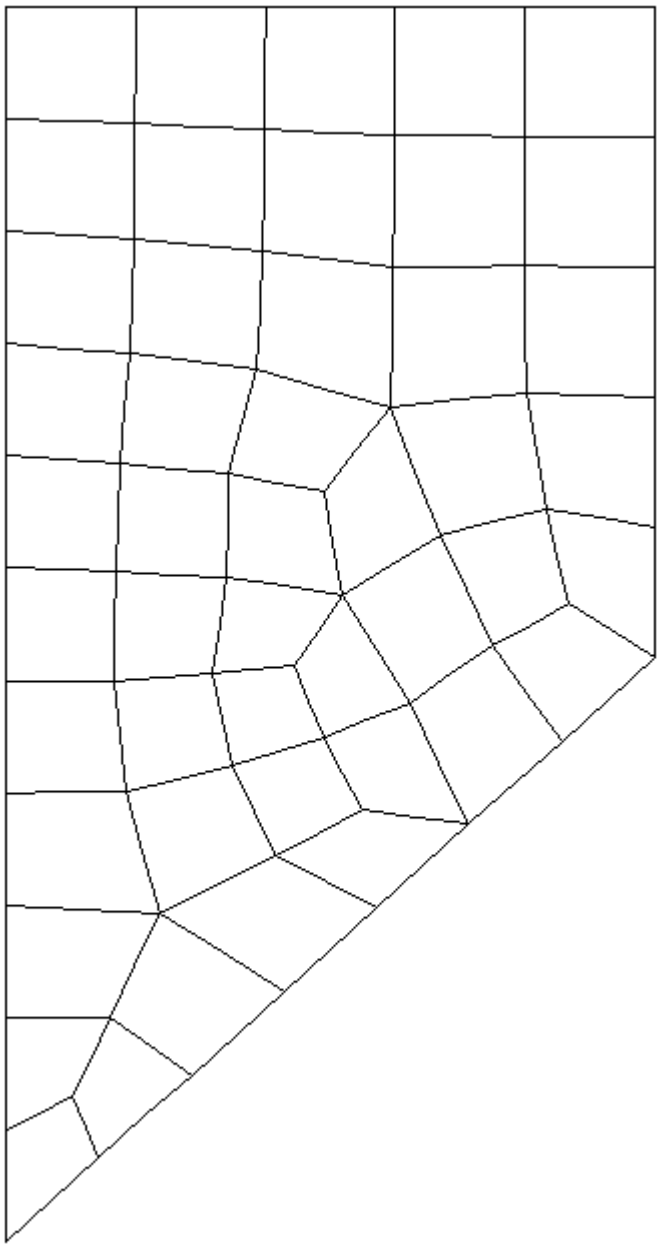
SJ MEPLA Calculation protocol:





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 N/mm²	G-modul N/mm²	Width 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 mm	y mm	z mm	C_x N/mm	C_y N/mm	C_z N/mm	C_φ Nmm	C_θ
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. N/mm²	ν	Thickness mm	Density kg/m³	αt 1/K	ΔT 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 from_to	Thick mm	Int.-pressure N/mm²	ΔT K	γ 1/K
1 2	16.00	1.01000e-001	0.00	3.66000e-003

External pressure:

Pressure N/mm²	ΔH (Difference of height) m	
1.01000e-001	0.0	(= 1.01000e-001 N/mm²)

Loads:

Climate loads:

p_a N/mm²	p_i N/mm²	p_i N/mm²	p_i N/mm²	ΔT K	ΔT K	ΔT K	ΔH m	Situation
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)
0.1010	0.1010	0.0000	0.0000	0.0	0.0	0.0	0	Self defined climate load
0.1010	0.1010	0.1010	0.1010	0.0	0.0	0.0	0	without climate loads

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	∆p,∆T	∆H	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	-0.00066	0.00000	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²	
outside	-0.00066 N/mm²	= -0.00066 * 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	: -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:

	- Position-		Displacement	
Package	x	y	w	
	mm	mm	mm	
2	228.42	627.21	-1.20	(min)
	0.00	0.00	0.00	(max)
1	0.00	0.00	0.00	(min)
	228.42	627.21	2.19	(max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm²
2	1	488.51	452.80	17.26
1	3	488.51	452.80	23.82
1	1	488.51	452.80	23.79

Stresses within the spacer:

Edge	Gap	x	y	σ	
		mm	mm	N/mm²	
	----------			(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 from_to	Inside pressure N/mm²
1 2	9.84475995e-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	0.0028	-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	0.0009	-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 N/mm²	Snow N/mm²	Climate
outside	-0.00066	0.00000	Summer (default)

inside 0.00000

Resulting face load from wind and snow:

	N/mm²	
outside	-0.00066	N/mm² = -0.00066 * 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:

	- Position-		Displacement	
Package	x	y	w	
	mm	mm	mm	
2	0.00	0.00	0.00	(min)
	228.42	627.21	1.25	(max)
1	228.42	627.21	-2.63	(min)
	0.00	0.00	0.00	(max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm²
2	1	488.51	452.80	18.04
1	3	488.51	452.80	28.56
1	1	488.51	452.80	28.54

Stresses within the spacer:

Edge	Gap	x	y	σ	
		mm	mm	N/mm²	
		----------		(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 from	to	Inside pressure N/mm²
1	2	1.03672739e-001

Springs:

Package from	Layer to	u mm	v mm	w mm	φ rad	θ rad	Fx N	Fy N	Fz N	M_φ Nmm	M_θ
(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	0.0020	-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 N/mm²	Snow N/mm²	Climate
outside	0.00099	0.00000	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²
outside	0.00099 N/mm² = 0.00099 * 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 : -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- x mm	y mm	Displacement w mm	
2	228.42	627.21	-1.02	(min)
	0.00	0.00	0.00	(max)
1	0.00	0.00	0.00	(min)
	228.42	627.21	2.27	(max)

Maximum principal stress:

Package	Layer	x mm	y mm	σ N/mm²
2	1	488.51	452.80	14.62
1	3	488.51	452.80	24.64
1	1	488.51	452.80	24.61

Stresses within the spacer:

Edge	Gap	x mm	y mm	σ N/mm²	
				(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 from_to	Inside pressure N/mm²
1 2	9.81536786e-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	-0.0014	-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	-0.0016	0.0007	-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	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	0.00099	0.00000	Summer (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²	
outside	0.00099 N/mm² =	0.00099 * 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- x	y	Displacement w	
	mm	mm	mm	
2	0.00	0.00	0.00	(min)
	228.42	627.21	1.44	(max)
1	228.42	627.21	-2.56	(min)
	0.00	0.00	0.00	(max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm²
2	1	488.51	452.80	20.71
1	3	488.51	452.80	27.81
1	1	488.51	452.80	27.79

Stresses within the spacer:

Edge	Gap	x	y	σ	
		mm	mm	N/mm²	
	----------			(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 from_to	Inside pressure N/mm²
1 2	1.03396509e-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	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 -0.0033  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	∆p,∆T	∆H	Shear
1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm²	N/mm²	
outside	-0.00066	0.00000	without climate loads
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²	
outside	-0.00066 N/mm²	= -0.00066 * 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	:	0.0 m = 0.0 * 0.00
Outside air pressure	:	0.10100 N/mm² = 0.10100 - 12.e-6 * 0.0
Inside pressure, gap 1	:	0.10100 N/mm²
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	-0.07 (min)

	0.00	0.00	0.00 (max)
1	228.42	627.21	-0.03 (min)
	0.00	0.00	0.00 (max)

Maximum principal stress:

Package	Layer	x [mm]	y [mm]	σ [N/mm²]
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 [mm]	y [mm]	σ [N/mm²]	
		----------	----------	(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 from_to	Inside pressure [N/mm²]
1 2	1.01111833e-001

Springs:

Package	Layer	u [mm]	v [mm]	w [mm]	φ [rad]	θ [rad]	Fx [N]	Fy [N]	Fz [N]	M_φ [Nmm]	M_θ
(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: 6 (ciężar własny + wiatr ssanie)

Coefficients / safety factors:

					-- Climate ---		
Dead weight	Wind	Snow	Line	Point	∆p,∆T	∆H	Shear
1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00

Loadcase combination:

	Wind	Snow	Climate
	N/mm²	N/mm²	
outside	0.00099	0.00000	without climate loads
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²	
outside	0.00099 N/mm² =	0.00099 * 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	:	0.0 m = 0.0 * 0.00
Outside air pressure	:	0.10100 N/mm² = 0.10100 - 12.e-6 * 0.0
Inside pressure, gap 1	:	0.10100 N/mm²
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	0.11 (max)
1	0.00	0.00	0.00 (min)
	228.42	627.21	0.05 (max)

Maximum principal stress:

Package	Layer	x	y	σ
		mm	mm	N/mm²

2	1	488.51	452.80	1.61
1	3	488.51	452.80	0.50
1	1	61.86	63.63	0.52

Stresses within the spacer:

Edge	Gap	x	y	σ	
		mm	mm	N/mm²	
		----------	----------	(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 from_to	Inside pressure N/mm²
1 2	1.00832481e-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	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	0.0001	-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	0.0002	-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	∆p,∆T	∆H	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	Winter (default)
inside	0.00000		

Resulting face load from wind and snow:

	N/mm²	
outside	0.00000 N/mm² =	0.00000 * 0.00 +0.00000 * 0.00
inside	0.00000 N/mm² =	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/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:

	- 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/mm²
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/mm²
	---------- (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 from_to	Inside pressure 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 N/mm²	Snow N/mm²	Climate

outside 0.00000 0.00000 Summer (default)
inside 0.00000

Resulting face load from wind and snow:

	N/mm²		
outside	0.00000 N/mm² =	0.00000 * 0.00	+0.00000 * 0.00
inside	0.00000 N/mm² =	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:

Package	- Position- x mm	y mm	Displacement w mm	
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 mm	y mm	σ N/mm²
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 mm	y mm	σ N/mm²	
				(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 from	to	Inside pressure N/mm²
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	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 N/mm²	Loadcase
2	1	20.71	4
1	3	28.56	2
1	1	28.54	2

Minimum and maximum displacements w:

Package	Displacement mm		Loadcase
2	1.44	(max)	4
2	-1.20	(min)	1
1	2.27	(max)	3
1	-2.63	(min)	2