

ALBERT GENAU - Smart Glazing Solutions
R&D Test Department

TEST CERTIFICATE NO. 020924 – S1

Test Date

September 02, 2024

Product Name

Bioflex Harmony Bioclimatic Pergola System

Type

Self Standing with 4 aluminum post fixed to floor. Aluminum panels covers the roof.

Dimension

(W x D x H) 4000x4000x2500 mm

Performance

According to test report No. 020924 – A1
September 02, 2024 AG R&D Department FEA
RFEM Method
Snow Load Analysis

**Measurement of deflection
According to test report No.
020924 – A1**

2000 N/ m² snow load applied.

**Deflection
55 mm**

g = 10 m/s² , self weight included



Ali E.DUĞAN
R&D Test Engineer



Tolga AKGÜNDÜZ
R&D Manager

Project: BIFLEX 4000X4000
KAR YÜKÜ

Model: BIOFLEX 4X4 SNOW LOAD

Date: 2.09.2024

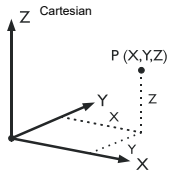
■ MODEL - GENERAL DATA

	General	Model name	: BIOFLEX 4X4 SNOW LOAD
		Project name	: BIOFLEX 4X4
		Project description	: KAR YÜKÜ
		Type of model	: 3D
		Positive direction of global axis Z	: Upward
		Classification of load cases and combinations	: According to Standard: EN 1990 National Annex: DIN - Germany
	Options	☐ RF-FORM-FINDING - Find initial equilibrium shapes of membrane and cable structures	
		☐ RF-CUTTING-PATTERN	
		☐ Piping analysis	
		☐ Use CQC Rule	
		☐ Enable CAD/BIM model	
		Standard Gravity g	: 10.00 m/s ²

■ FE MESH SETTINGS

	General	Target length of finite elements	l_{FE}	: 500.0 mm
		Maximum distance between a node and a line to integrate it into the line	ϵ	: 1.0 mm
		Maximum number of mesh nodes (in thousands)		: 500
	Members	Number of divisions of members with cable, elastic foundation, taper, or plastic characteristic		: 10
		☒ Activate member divisions for large deformation or post-critical analysis		
		☒ Use division for members with node lying on them		
	Surfaces	Maximum ratio of FE rectangle diagonals	Δ_D	: 1.8
		Maximum out-of-plane inclination of two finite elements	α	: 0.50 °
		Shape direction of finite elements		: Triangles and quadrangles ☒ Same squares where possible

■ 1.1 NODES



Node No.	Node Type	Reference Node	Coordinate System	Node Coordinates			Comment
				X [mm]	Y [mm]	Z [mm]	
1	Standard	-	Cartesian	0.0	0.0	2500.0	
2	Standard	-	Cartesian	4000.0	0.0	2500.0	
3	Standard	-	Cartesian	0.0	4000.0	2500.0	
4	Standard	-	Cartesian	4000.0	4000.0	2500.0	
5	Standard	-	Cartesian	0.0	0.0	0.0	Supported
6	Standard	-	Cartesian	4000.0	0.0	0.0	Supported
7	Standard	-	Cartesian	0.0	4000.0	0.0	Supported
8	Standard	-	Cartesian	4000.0	4000.0	0.0	Supported
9	On Line	5	Cartesian	0.0	3750.0	2500.0	
10	On Line	5	Cartesian	0.0	3500.0	2500.0	
11	On Line	5	Cartesian	0.0	3250.0	2500.0	
12	On Line	5	Cartesian	0.0	3000.0	2500.0	
13	On Line	5	Cartesian	0.0	2750.0	2500.0	
14	On Line	5	Cartesian	0.0	2500.0	2500.0	
15	On Line	5	Cartesian	0.0	2250.0	2500.0	
16	On Line	5	Cartesian	0.0	2000.0	2500.0	
17	On Line	5	Cartesian	0.0	1750.0	2500.0	
18	On Line	5	Cartesian	0.0	1500.0	2500.0	
19	On Line	5	Cartesian	0.0	1250.0	2500.0	
20	On Line	5	Cartesian	0.0	1000.0	2500.0	
21	On Line	5	Cartesian	0.0	750.0	2500.0	
22	On Line	5	Cartesian	0.0	500.0	2500.0	
23	On Line	5	Cartesian	0.0	250.0	2500.0	
24	On Line	7	Cartesian	4000.0	250.0	2500.0	
25	On Line	7	Cartesian	4000.0	500.0	2500.0	
26	On Line	7	Cartesian	4000.0	750.0	2500.0	
27	On Line	7	Cartesian	4000.0	1000.0	2500.0	
28	On Line	7	Cartesian	4000.0	1250.0	2500.0	
29	On Line	7	Cartesian	4000.0	1500.0	2500.0	
30	On Line	7	Cartesian	4000.0	1750.0	2500.0	
31	On Line	7	Cartesian	4000.0	2000.0	2500.0	
32	On Line	7	Cartesian	4000.0	2250.0	2500.0	
33	On Line	7	Cartesian	4000.0	2500.0	2500.0	
34	On Line	7	Cartesian	4000.0	2750.0	2500.0	
35	On Line	7	Cartesian	4000.0	3000.0	2500.0	
36	On Line	7	Cartesian	4000.0	3250.0	2500.0	
37	On Line	7	Cartesian	4000.0	3500.0	2500.0	
38	On Line	7	Cartesian	4000.0	3750.0	2500.0	

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1.1.1 NODES OF TYPE 'ON LINE'

Node No.	Reference Line No.	Parameter δ [%]	Comment
9	5	6.25	
10	5	12.50	
11	5	18.75	
12	5	25.00	
13	5	31.25	
14	5	37.50	
15	5	43.75	
16	5	50.00	
17	5	56.25	
18	5	62.50	
19	5	68.75	
20	5	75.00	
21	5	81.25	
22	5	87.50	
23	5	93.75	
24	7	6.25	
25	7	12.50	
26	7	18.75	
27	7	25.00	
28	7	31.25	
29	7	37.50	
30	7	43.75	
31	7	50.00	
32	7	56.25	
33	7	62.50	
34	7	68.75	
35	7	75.00	
36	7	81.25	
37	7	87.50	
38	7	93.75	

1.2 LINES

Line No.	Line Type	Nodes No.	Line Length L [mm]		Comment
1	Polyline	1,5	2500.0	Z	
2	Polyline	3,7	2500.0	Z	
3	Polyline	2,6	2500.0	Z	
4	Polyline	4,8	2500.0	Z	
5	Polyline	3,1	4000.0	Y	
6	Polyline	4,3	4000.0	X	
7	Polyline	2,4	4000.0	Y	
8	Polyline	1,2	4000.0	X	
9	Polyline	9,38	4000.0	X	
10	Polyline	10,37	4000.0	X	
11	Polyline	11,36	4000.0	X	
12	Polyline	12,35	4000.0	X	
13	Polyline	13,34	4000.0	X	
14	Polyline	14,33	4000.0	X	
15	Polyline	15,32	4000.0	X	
16	Polyline	16,31	4000.0	X	
17	Polyline	17,30	4000.0	X	
18	Polyline	18,29	4000.0	X	
19	Polyline	19,28	4000.0	X	
20	Polyline	20,27	4000.0	X	
21	Polyline	21,26	4000.0	X	
22	Polyline	22,25	4000.0	X	
23	Polyline	23,24	4000.0	X	

1.3 MATERIALS

Matl. No.	Modulus E [Pa]	Modulus G [Pa]	Poisson's Ratio ν [-]	Spec. Weight γ [N/m ³]	Coeff. of Th. Ex α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Concrete C30/37 3.30000E+10	EN 1992-1-1:2004/A1:2014 1.37500E+10	0.200	25000.0	1.00E-05	1.00	Isotropic Linear Elastic
2	Steel S 235 EN 1993-1-1:2005-05 2.10000E+11	8.07692E+10	0.300	78500.0	1.20E-05	1.00	Isotropic Linear Elastic
3	Aluminum EN-AW 6063 (DT) T6 EN 1999-1-1:2007 7.00000E+10	2.70000E+10	0.296	27000.0	2.30E-05	1.00	Isotropic Linear Elastic

1.4 SURFACES

Surface No.	Surface Type Geometry	Stiffness	Boundary Lines No.	Matl. No.	Thickness Type	d [mm]	Area A [mm ²]	Weight W [kg]
1	Plane	Standard	8-5	3	Constant	1.0	16000000.0	43.20

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■ 1.4.2 SURFACES - INTEGRATED OBJECTS

Surface No.	Nodes	Integrated Objects No. Lines	Openings	Comment
1		9-23		

■ 1.7 NODAL SUPPORTS

Support No.	Nodes No.	Axis System	Column in Z	Support Conditions						
1	5-8	Global X,Y,Z	☐	☒	☒	☒	☒	☒	☒	☒

■ 1.13 CROSS-SECTIONS

Section No.	Matl. No.	J [mm ⁴] A [mm ²]	I _u [mm ⁴] A _u [mm ²]	I _v [mm ⁴] A _v [mm ²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm]	
							Width b	Height h
1	SHAPE-THIN B.F.160X160 DIKME PROFILI 3	5067996.5 1426.7	5037846.0 519.2	4145129.5 546.3	45.00	0.00	159.3	159.3
2	SHAPE-THIN B.F.270X46 PANEL PROFILI 3	553096.1 1353.0	280220.5 851.8	8829177.0 124.4	4.47	0.00	270.0	46.0
3	SHAPE-THIN B.F. KIRIS-OLUK PROFILI 3	1593515.3 3098.4	22284046.0 954.1	7590407.0 914.6	40.50	0.00	217.3	227.3

■ 1.17 MEMBERS

Mbr. No.	Line No.	Member	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [mm]	
1	1	Beam	Angle	0.00	1	1	-	-	-	-	2500.0	Z
2	2	Beam	Angle	90.00	1	1	-	-	-	-	2500.0	Z
3	3	Beam	Angle	-90.00	1	1	-	-	-	-	2500.0	Z
4	4	Beam	Angle	180.00	1	1	-	-	-	-	2500.0	Z
6	6	Beam	Angle	0.00	3	3	-	-	-	-	4000.0	X
8	8	Beam	Angle	0.00	3	3	-	-	-	-	4000.0	X
9	5	Beam	Angle	0.00	3	3	-	-	-	-	4000.0	Y
10	7	Beam	Angle	0.00	3	3	-	-	-	-	4000.0	Y
11	9	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
12	10	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
13	11	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
14	12	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
15	13	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
16	14	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
17	15	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
18	16	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
19	17	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
20	18	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
21	19	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
22	20	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
23	21	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
24	22	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X
25	23	Beam	Angle	0.00	2	2	-	-	-	-	4000.0	X

■ 2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 DIN Action Category	Self-Weight - Factor in Direction			
			Active	X	Y	Z
LC1	Snow	Snow (H ≤ 1000 m a.s.l.)	☒	0.000	0.000	-1.000

■ 2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters	
LC1	Snow	Method of analysis	: ☒ Geometrically linear analysis : ☒ Newton-Raphson
		Method for solving system of nonlinear algebraic equations	
		Activate stiffness factors of:	: ☒ Cross-sections (factor for J, I _y , I _z , A, A _y , A _z) : ☒ Members (factor for GJ, EI _y , EI _z , EA, GA _y , GA _z)

■ 3.4 SURFACE LOADS

LC1: Snow

No.	On Surfaces No.	Load Type	Load Distribution	Load Direction	Symbol	Load Parameters Value	Unit
1	1	Force	Uniform	ZL	p	-2000.0	Pa

LC1
Snow

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■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
Load Case LC1 - Snow				
	Sum of loads in X	0.0	N	
	Sum of support reactions in X	0.0	N	
	Sum of loads in Y	0.0	N	
	Sum of support reactions in Y	0.0	N	
	Sum of loads in Z	-36347.6	N	
	Sum of support reactions in Z	-36347.6	N	Deviation 0.00%
	Resultant of reactions about X	0.0	Nmm	At center of gravity of model (X:2000.0, Y:2000.0, Z:2389.2 mm)
	Resultant of reactions about Y	0.0	Nmm	At center of gravity of model
	Resultant of reactions about Z	0.0	Nmm	At center of gravity of model
	Max. displacement in X	-1.4	mm	Member No. 2, x: 833.3 mm
	Max. displacement in Y	2.1	mm	Member No. 2, x: 833.3 mm
	Max. displacement in Z	-55.0	mm	FE Mesh Node No. 77 (X: 2000.0, Y: 2000.0, Z: 2500.0 mm)
	Max. vector displacement	55.0	mm	FE Mesh Node No. 77 (X: 2000.0, Y: 2000.0, Z: 2500.0 mm)
	Max. rotation about X	3.13	°	FE Mesh Node No. 140 (X: 2000.0, Y: 3750.0, Z: 2500.0 mm)
	Max. rotation about Y	-1.97	°	FE Mesh Node No. 31 (X: 4000.0, Y: 2000.0, Z: 2500.0 mm)
	Max. rotation about Z	-0.01	°	FE Mesh Node No. 73 (X: 3500.0, Y: 2000.0, Z: 2500.0 mm)
	Maximum member strain	0.000	‰	Member No. 0, x: 0.0 mm
	Maximum surface strain	0.000	‰	FE Mesh Node No. 0 (X: 0.0, Y: 0.0, Z: 0.0 mm)
	Method of analysis	Linear		Geometrically linear analysis
	Reduction of stiffness			Cross-sections, Members, Surfaces
	Number of load increments	1		
	Number of iterations	1		
	Maximum value of element of stiffness matrix on diagonal	1.872E+09		
	Minimum value of element of stiffness matrix on diagonal	3.632E+05		
	Stiffness matrix determinant	1.325E+6506		
	Infinity Norm	3.835E+09		

Summary				
Other Settings:				
	Number of 1D finite elements	172		
	Number of 2D finite elements	128		
	Number of 3D finite elements	0		
	Number of FE mesh nodes	157		
	Number of equations	942		
	Max. number of iterations	100		
	Number of divisions for member results	10		
	Division of cable/foundation/tapered members	10		
	Number of member divisions for searching maximum values	10		
	Subdivisions of FE mesh for graphical results	3		
	Percentage of iterations according to Picard method in combination with Newton-Raphson method	5	%	
Options:				
	Activate shear stiffness of members (Ay, Az)	☒		
	Activate member divisions for large deformation or post-critical analysis	☒		
	Activate entered stiffness modifications	☒		
	Ignore rotational degrees of freedom	☐		
	Check of critical forces of members	☒		
	Nonsymmetric direct solver if demanded by nonlinear model	☐		
	Method for the system of equations	Direct		
	Plate bending theory	Mindlin		
	Solver version	64-bit		
Precision and Tolerance:				
	Change default setting	☐		

■ 4.1 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [N]			Support Moments [Nmm]			
		P _x	P _y	P _z	M _x	M _y	M _z	
5	LC1	-943.9	-1582.0	-9087.7	1288290.0	-769632.0	-2221.0	Snow
6	LC1	943.9	-1582.0	-9087.7	1288290.0	769632.0	2221.0	Snow
7	LC1	-953.0	1582.0	-9086.1	-1291400.0	-779633.0	7585.1	Snow
8	LC1	953.0	1582.0	-9086.1	-1291400.0	779633.0	-7585.1	Snow
Σ Supp.	LC1	0.0	0.0	-36347.6				
Σ Loads	LC1	0.0	0.0	-36347.6				

■ 4.5 MEMBERS - GLOBAL DEFORMATIONS

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section
				u	u _x	u _y	u _z	φ _x	φ _y	φ _z	
1	LC1	1	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	0.00	1 - SHAPE-THIN B.F.160X160 DIKME PROFILI
		5	2500.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
		Max u _x	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00	
		Min u _x	833.3	2.5	-1.4	-2.1	-0.2	-0.01	0.01	-0.00	
		Max u _y	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00	
		Min u _y	833.3	2.5	-1.4	-2.1	-0.2	-0.01	0.01	-0.00	
		Max u _z	2500.0	0.0	0.0	0.0	0.0	0.00	-0.00	0.00	

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section			
				u	u _x	u _y	u _z	φ _x	φ _y	φ _z				
1	LC1	Min u _z	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
		Max φ _x	1666.7	1.3	-0.7	-1.1	-0.1	0.10	-0.07	-0.00				
		Min φ _x	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
		Max φ _y	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
		Min φ _y	1666.7	1.3	-0.7	-1.1	0.10	-0.07	-0.00					
		Max φ _z	2500.0	0.0	0.0	0.0	0.00	-0.00	0.00					
		Min φ _z	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
		3	0.0	0.2	0.0	0.0	-0.2	0.33	0.22	0.01		1 - SHAPE-THIN B.F.160X160 DIKME PROFILI		
7	2500.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00						
Max u _x	2500.0	0.0	0.0	0.0	0.0	-0.00	-0.00	0.00						
Min u _x	833.3	2.5	-1.4	2.1	-0.2	0.01	0.01	0.01						
Max u _y	833.3	2.5	-1.4	2.1	-0.2	0.01	0.01	0.01						
Min u _y	2500.0	0.0	0.0	0.0	0.0	-0.00	-0.00	0.00						
Max u _z	2500.0	0.0	0.0	0.0	0.0	-0.00	-0.00	0.00						
Min u _z	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22	0.01						
Max φ _x	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22	0.01						
Min φ _x	1666.7	1.3	-0.7	1.1	-0.1	-0.10	-0.07	0.00						
Max φ _y	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22	0.01						
Min φ _y	1666.7	1.3	-0.7	1.1	-0.1	-0.10	-0.07	0.00						
Max φ _z	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22	0.01						
Min φ _z	2500.0	0.0	0.0	0.0	0.0	-0.00	-0.00	0.00						
3	LC1	2	0.0	0.2	0.0	0.0	-0.2	-0.33	-0.21	0.00	1 - SHAPE-THIN B.F.160X160 DIKME PROFILI			
		6	2500.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00				
		Max u _x	833.3	2.5	1.4	-2.1	-0.2	-0.01	-0.01	0.00				
		Min u _x	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Max u _y	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Min u _y	833.3	2.5	1.4	-2.1	-0.2	-0.01	-0.01	0.00				
		Max u _z	2500.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00				
		Min u _z	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Max φ _x	1666.7	1.3	0.7	-1.1	-0.1	0.10	0.07	0.00				
		Min φ _x	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Max φ _y	1666.7	1.3	0.7	-1.1	-0.1	0.10	0.07	0.00				
		Min φ _y	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Max φ _z	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
		Min φ _z	2500.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00				
		4	LC1	4	0.0	0.2	0.0	0.0	-0.2	0.33		-0.22	-0.01	1 - SHAPE-THIN B.F.160X160 DIKME PROFILI
				8	2500.0	0.0	0.0	0.0	0.0	0.00		0.00	0.00	
Max u _x	833.3			2.5	1.4	2.1	-0.2	0.01	-0.01	-0.01				
Min u _x	2500.0			0.0	0.0	0.0	0.0	-0.00	0.00	0.00				
Max u _y	833.3			2.5	1.4	2.1	-0.2	0.01	-0.01	-0.01				
Min u _y	2500.0			0.0	0.0	0.0	0.0	-0.00	0.00	0.00				
Max u _z	2500.0			0.0	0.0	0.0	0.0	-0.00	0.00	0.00				
Min u _z	0.0			0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
Max φ _x	0.0			0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
Min φ _x	1666.7			1.3	0.7	1.1	-0.1	-0.10	0.07	-0.00				
Max φ _y	1666.7			1.3	0.7	1.1	-0.1	-0.10	0.07	-0.00				
Min φ _y	0.0			0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
Max φ _z	2500.0			0.0	0.0	0.0	0.0	-0.00	0.00	0.00				
Min φ _z	0.0			0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
6	LC1			4	0.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01	3 - SHAPE-THIN B.F. KIRIS-OLUK PROFILI	
				3	4000.0	0.2	0.0	0.0	-0.2	0.33	0.22	0.01		
		Max u _x	500.0	2.2	0.0	0.0	-2.2	0.57	-0.21	-0.01				
		Min u _x	3500.0	2.2	-0.0	0.0	-2.2	0.57	0.21	0.01				
		Max u _y	2000.0	5.4	0.0	0.1	-5.4	0.92	0.00	0.00				
		Min u _y	0.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
		Max u _z	0.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
		Min u _z	2000.0	5.4	0.0	0.1	-5.4	0.92	0.00	0.00				
		Max φ _x	2000.0	5.4	0.0	0.1	-5.4	0.92	0.00	0.00				
		Min φ _x	0.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
		Max φ _y	4000.0	0.2	-0.0	0.0	-0.2	0.33	0.22	0.01				
		Min φ _y	0.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01				
		Max φ _z	3500.0	2.2	-0.0	0.0	-2.2	0.57	0.21	0.01				
		Min φ _z	500.0	2.2	0.0	0.0	-2.2	0.57	-0.21	-0.01				
		8	LC1	1	0.0	0.2	0.0	0.0	-0.2	-0.33	0.21	0.00		3 - SHAPE-THIN B.F. KIRIS-OLUK PROFILI
				2	4000.0	0.2	0.0	0.0	-0.2	-0.33	-0.21	0.00		
Max u _x	0.0			0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
Min u _x	4000.0			0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
Max u _y	2000.0			5.3	0.0	0.1	-5.3	-0.92	0.00	0.00				
Min u _y	0.0			0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
Max u _z	0.0			0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
Min u _z	2000.0			5.3	0.0	0.1	-5.3	-0.92	0.00	0.00				
Max φ _x	4000.0			0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
Min φ _x	2000.0			5.3	0.0	0.1	-5.3	-0.92	0.00	0.00				
Max φ _y	0.0			0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
Min φ _y	4000.0			0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
Max φ _z	4000.0			0.2	-0.0	0.0	-0.2	-0.33	-0.21	0.00				
Min φ _z	0.0			0.2	0.0	0.0	-0.2	-0.33	0.21	-0.00				
9	LC1			3	0.0	0.2	0.0	0.0	-0.2	0.33	0.22	0.01	3 - SHAPE-THIN B.F. KIRIS-OLUK PROFILI	

Project: BIFLEX 4000X4000
KAR YÜKÜ

Model: BIOFLEX 4X4 SNOW LOAD

Date: 2.09.2024

■ 4.5 MEMBERS - GLOBAL DEFORMATIONS

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section	
				u	u _x	u _u	u _v	φ _x	φ _u	φ _v		
9	LC1		250.0	1.8	0.0	0.0	-1.8	0.35	0.57	0.00		
			250.0	1.8	0.0	0.0	-1.8	0.35	0.57	0.00		
			500.0	3.4	0.0	0.0	-3.4	0.35	0.95	0.00		
			500.0	3.4	0.0	0.0	-3.4	0.35	0.95	0.00		
			750.0	4.9	0.0	0.0	-4.9	0.32	1.27	0.00		
			750.0	4.9	0.0	0.0	-4.9	0.32	1.27	0.00		
			1000.0	6.2	0.0	0.0	-6.2	0.28	1.53	0.00		
			1000.0	6.2	0.0	0.0	-6.2	0.28	1.53	0.00		
			1250.0	7.4	0.0	0.0	-7.4	0.22	1.72	0.00		
			1250.0	7.4	0.0	0.0	-7.4	0.22	1.72	0.00		
			1500.0	8.2	0.0	0.0	-8.2	0.15	1.86	0.00		
			1500.0	8.2	0.0	0.0	-8.2	0.15	1.86	0.00		
			1750.0	8.7	0.0	0.0	-8.7	0.08	1.94	0.00		
			1750.0	8.7	0.0	0.0	-8.7	0.08	1.94	0.00		
			2000.0	8.9	0.0	0.0	-8.9	0.00	1.97	0.00		
			2000.0	8.9	0.0	0.0	-8.9	0.00	1.97	0.00		
			2250.0	8.7	0.0	0.0	-8.7	-0.08	1.94	0.00		
			2250.0	8.7	0.0	0.0	-8.7	-0.08	1.94	0.00		
			2500.0	8.2	0.0	0.0	-8.2	-0.15	1.86	0.00		
			2500.0	8.2	0.0	0.0	-8.2	-0.15	1.86	0.00		
			2750.0	7.4	0.0	0.0	-7.4	-0.22	1.73	0.00		
			2750.0	7.4	0.0	0.0	-7.4	-0.22	1.73	0.00		
			3000.0	6.2	0.0	0.0	-6.2	-0.28	1.53	0.00		
			3000.0	6.2	0.0	0.0	-6.2	-0.28	1.53	0.00		
			3250.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01		
			3250.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01		
			3500.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01		
			3500.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01		
			3750.0	1.8	0.0	0.0	-1.8	-0.35	0.58	0.01		
			3750.0	1.8	0.0	0.0	-1.8	-0.35	0.58	0.01		
			1	4000.0	0.2	0.0	0.0	-0.2	-0.33	0.21		0.00
			Max u _x	4000.0	0.2	0.0	0.0	-0.2	-0.33	0.21		-0.00
			Min u _x	1500.0	8.2	-0.0	0.0	-8.2	0.15	1.86		-0.00
			Max u _y	4000.0	0.2	0.0	0.0	-0.2	-0.33	0.21		-0.00
			Min u _y	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22		0.01
			Max u _z	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22		0.01
			Min u _z	2000.0	8.9	-0.0	0.0	-8.9	-0.00	1.97		0.00
			Max φ _x	250.0	1.8	0.0	0.0	-1.8	0.35	0.57		-0.00
			Min φ _x	3750.0	1.8	0.0	0.0	-1.8	-0.35	0.58		0.01
			Max φ _y	2000.0	8.9	-0.0	0.0	-8.9	-0.00	1.97		0.00
			Min φ _y	4000.0	0.2	0.0	0.0	-0.2	-0.33	0.21		-0.00
			Max φ _z	0.0	0.2	-0.0	0.0	-0.2	0.33	0.22		0.01
			Min φ _z	500.0	3.4	0.0	0.0	-3.4	0.35	0.95		-0.00
10	LC1	2	0.0	0.2	0.0	0.0	-0.2	-0.33	-0.21	0.00	3 - SHAPE-THIN B.F. KIRIS-OLUK PROFILI	
			250.0	1.8	0.0	0.0	-1.8	-0.35	-0.58	-0.01		
			250.0	1.8	0.0	0.0	-1.8	-0.35	-0.58	-0.01		
			500.0	3.4	0.0	0.0	-3.4	-0.35	-0.96	-0.01		
			500.0	3.4	0.0	0.0	-3.4	-0.35	-0.96	-0.01		
			750.0	4.9	0.0	0.0	-4.9	-0.32	-1.28	-0.01		
			750.0	4.9	0.0	0.0	-4.9	-0.32	-1.28	-0.01		
			1000.0	6.2	0.0	0.0	-6.2	-0.28	-1.53	0.00		
			1000.0	6.2	0.0	0.0	-6.2	-0.28	-1.53	0.00		
			1250.0	7.4	0.0	0.0	-7.4	-0.22	-1.73	0.00		
			1250.0	7.4	0.0	0.0	-7.4	-0.22	-1.73	0.00		
			1500.0	8.2	0.0	0.0	-8.2	-0.15	-1.86	0.00		
			1500.0	8.2	0.0	0.0	-8.2	-0.15	-1.86	0.00		
			1750.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	0.00		
			1750.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	0.00		
			2000.0	8.9	0.0	0.0	-8.9	0.00	-1.97	0.00		
			2000.0	8.9	0.0	0.0	-8.9	0.00	-1.97	0.00		
			2250.0	8.7	0.0	0.0	-8.7	0.08	-1.94	0.00		
			2250.0	8.7	0.0	0.0	-8.7	0.08	-1.94	0.00		
			2500.0	8.2	0.0	0.0	-8.2	0.15	-1.86	0.00		
			2500.0	8.2	0.0	0.0	-8.2	0.15	-1.86	0.00		
			2750.0	7.4	0.0	0.0	-7.4	0.22	-1.72	0.00		
			2750.0	7.4	0.0	0.0	-7.4	0.22	-1.72	0.00		
			3000.0	6.2	0.0	0.0	-6.2	0.28	-1.53	0.00		
			3000.0	6.2	0.0	0.0	-6.2	0.28	-1.53	0.00		
			3250.0	4.9	0.0	0.0	-4.9	0.32	-1.27	0.00		
			3250.0	4.9	0.0	0.0	-4.9	0.32	-1.27	0.00		
			3500.0	3.4	0.0	0.0	-3.4	0.35	-0.95	0.00		
			3500.0	3.4	0.0	0.0	-3.4	0.35	-0.95	0.00		
			3750.0	1.8	0.0	0.0	-1.8	0.35	-0.57	0.00		
			3750.0	1.8	0.0	0.0	-1.8	0.35	-0.57	0.00		
			4	4000.0	0.2	0.0	0.0	-0.2	0.33	-0.22		-0.01
			Max u _x	2500.0	8.2	0.0	0.0	-8.2	0.15	-1.86		0.00
			Min u _x	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21		0.00
			Max u _y	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21		0.00
			Min u _y	4000.0	0.2	0.0	0.0	-0.2	0.33	-0.22		-0.01
			Max u _z	4000.0	0.2	0.0	0.0	-0.2	0.33	-0.22		-0.01
			Min u _z	2000.0	8.9	0.0	0.0	-8.9	-0.00	-1.97		-0.00
			Max φ _x	3750.0	1.8	-0.0	0.0	-1.8	0.35	-0.57		0.00
			Min φ _x	250.0	1.8	-0.0	0.0	-1.8	-0.35	-0.58		-0.01
			Max φ _y	0.0	0.2	-0.0	0.0	-0.2	-0.33	-0.21		0.00
			Min φ _y	2000.0	8.9	0.0	0.0	-8.9	-0.00	-1.97		-0.00
			Max φ _z	3500.0	3.4	-0.0	0.0	-3.4	0.35	-0.95		0.00
	Min φ _z	4000.0	0.2	0.0	0.0	-0.2	0.33	-0.22	-0.01			
11	LC1	9	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFILI	

Project: BIFLEX 4000X4000
KAR YÜKÜ

Model: BIOFLEX 4X4 SNOW LOAD

Date: 2.09.2024

■ 4.5 MEMBERS - GLOBAL DEFORMATIONS

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section
				u	u _x	u _y	u _z	φ _x	φ _y	φ _z	
11	LC1	38	4000.0	1.8	0.0	0.0	-1.8	0.35	-0.57	0.00	
		Max u _x	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	-0.00	
		Min u _x	4000.0	1.8	-0.0	0.0	-1.8	0.35	-0.57	0.00	
		Max u _y	2000.0	14.4	0.0	0.1	-14.4	3.13	0.00	0.00	
		Min u _y	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	-0.00	
		Max u _z	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	-0.00	
		Min u _z	2000.0	14.4	0.0	0.1	-14.4	3.13	0.00	0.00	
		Max φ _x	2000.0	14.4	0.0	0.1	-14.4	3.13	0.00	0.00	
		Min φ _x	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	-0.00	
		Max φ _y	0.0	1.8	0.0	0.0	-1.8	0.35	0.57	-0.00	
		Min φ _y	4000.0	1.8	-0.0	0.0	-1.8	0.35	-0.57	0.00	
		Max φ _z	1000.0	10.6	0.0	0.1	-10.6	2.32	0.41	0.01	
		Min φ _z	3000.0	10.6	-0.0	0.1	-10.6	2.32	-0.41	-0.01	
12	LC1	10	0.0	3.4	0.0	0.0	-3.4	0.35	0.95	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		37	4000.0	3.4	0.0	0.0	-3.4	0.35	-0.95	0.00	
		Max u _x	0.0	3.4	0.0	0.0	-3.4	0.35	0.95	-0.00	
		Min u _x	4000.0	3.4	-0.0	0.0	-3.4	0.35	-0.95	0.00	
		Max u _y	2000.0	26.5	0.0	0.1	-26.5	2.39	0.00	0.00	
		Min u _y	0.0	3.4	0.0	0.0	-3.4	0.35	0.95	-0.00	
		Max u _z	0.0	3.4	0.0	0.0	-3.4	0.35	0.95	-0.00	
		Min u _z	2000.0	26.5	0.0	0.1	-26.5	2.39	0.00	0.00	
		Max φ _x	2000.0	26.5	0.0	0.1	-26.5	2.39	0.00	0.00	
		Min φ _x	0.0	3.4	0.0	0.0	-3.4	0.35	0.95	-0.00	
		Max φ _y	500.0	12.0	0.0	0.0	-12.0	1.08	0.99	0.01	
		Min φ _y	3500.0	12.0	-0.0	0.0	-12.0	1.08	-0.99	-0.01	
		Max φ _z	500.0	12.0	0.0	0.0	-12.0	1.08	0.99	0.01	
		Min φ _z	3500.0	12.0	-0.0	0.0	-12.0	1.08	-0.99	-0.01	
13	LC1	11	0.0	4.9	0.0	0.0	-4.9	0.32	1.27	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		36	4000.0	4.9	0.0	0.0	-4.9	0.32	-1.27	0.00	
		Max u _x	4000.0	4.9	0.0	0.0	-4.9	0.32	-1.27	0.00	
		Min u _x	0.0	4.9	-0.0	0.0	-4.9	0.32	1.27	-0.00	
		Max u _y	2000.0	35.8	0.0	0.1	-35.8	1.86	0.00	0.00	
		Min u _y	0.0	4.9	-0.0	0.0	-4.9	0.32	1.27	-0.00	
		Max u _z	0.0	4.9	-0.0	0.0	-4.9	0.32	1.27	-0.00	
		Min u _z	2000.0	35.8	0.0	0.1	-35.8	1.86	0.00	0.00	
		Max φ _x	2000.0	35.8	0.0	0.1	-35.8	1.86	0.00	0.00	
		Min φ _x	0.0	4.9	-0.0	0.0	-4.9	0.32	1.27	-0.00	
		Max φ _y	500.0	16.3	-0.0	0.0	-16.3	0.90	1.31	0.01	
		Min φ _y	3500.0	16.3	0.0	0.0	-16.3	0.90	-1.31	-0.01	
		Max φ _z	500.0	16.3	-0.0	0.0	-16.3	0.90	1.31	0.01	
		Min φ _z	3500.0	16.3	0.0	0.0	-16.3	0.90	-1.31	-0.01	
14	LC1	12	0.0	6.2	0.0	0.0	-6.2	0.28	1.53	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		35	4000.0	6.2	0.0	0.0	-6.2	0.28	-1.53	0.00	
		Max u _x	4000.0	6.2	0.0	0.0	-6.2	0.28	-1.53	0.00	
		Min u _x	0.0	6.2	-0.0	0.0	-6.2	0.28	1.53	-0.00	
		Max u _y	2000.0	43.0	0.0	0.1	-43.0	1.42	0.00	0.00	
		Min u _y	0.0	6.2	-0.0	0.0	-6.2	0.28	1.53	-0.00	
		Max u _z	0.0	6.2	-0.0	0.0	-6.2	0.28	1.53	-0.00	
		Min u _z	2000.0	43.0	0.0	0.1	-43.0	1.42	0.00	0.00	
		Max φ _x	2000.0	43.0	0.0	0.1	-43.0	1.42	0.00	0.00	
		Min φ _x	0.0	6.2	-0.0	0.0	-6.2	0.28	1.53	-0.00	
		Max φ _y	500.0	19.8	-0.0	0.0	-19.8	0.71	1.55	0.01	
		Min φ _y	3500.0	19.8	0.0	0.0	-19.8	0.71	-1.55	-0.01	
		Max φ _z	500.0	19.8	-0.0	0.0	-19.8	0.71	1.55	0.01	
		Min φ _z	3500.0	19.8	0.0	0.0	-19.8	0.71	-1.55	-0.01	
15	LC1	13	0.0	7.4	0.0	0.0	-7.4	0.22	1.72	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		34	4000.0	7.4	0.0	0.0	-7.4	0.22	-1.72	0.00	
		Max u _x	4000.0	7.4	0.0	0.0	-7.4	0.22	-1.72	0.00	
		Min u _x	0.0	7.4	-0.0	0.0	-7.4	0.22	1.72	-0.00	
		Max u _y	2000.0	48.4	0.0	0.1	-48.4	1.03	0.00	0.00	
		Min u _y	0.0	7.4	-0.0	0.0	-7.4	0.22	1.72	-0.00	
		Max u _z	0.0	7.4	-0.0	0.0	-7.4	0.22	1.72	-0.00	
		Min u _z	2000.0	48.4	0.0	0.1	-48.4	1.03	0.00	0.00	
		Max φ _x	2000.0	48.4	0.0	0.1	-48.4	1.03	0.00	0.00	
		Min φ _x	0.0	7.4	-0.0	0.0	-7.4	0.22	1.72	-0.00	
		Max φ _y	500.0	22.6	-0.0	0.0	-22.6	0.54	1.73	0.01	
		Min φ _y	3500.0	22.6	0.0	0.0	-22.6	0.54	-1.73	-0.01	
		Max φ _z	500.0	22.6	-0.0	0.0	-22.6	0.54	1.73	0.01	
		Min φ _z	3500.0	22.6	0.0	0.0	-22.6	0.54	-1.73	-0.01	
16	LC1	14	0.0	8.2	0.0	0.0	-8.2	0.15	1.86	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		33	4000.0	8.2	0.0	0.0	-8.2	0.15	-1.86	0.00	
		Max u _x	4000.0	8.2	0.0	0.0	-8.2	0.15	-1.86	0.00	
		Min u _x	0.0	8.2	-0.0	0.0	-8.2	0.15	1.86	-0.00	
		Max u _y	2000.0	52.1	0.0	0.1	-52.1	0.67	0.00	0.00	
		Min u _y	0.0	8.2	-0.0	0.0	-8.2	0.15	1.86	-0.00	
		Max u _z	0.0	8.2	-0.0	0.0	-8.2	0.15	1.86	-0.00	
		Min u _z	2000.0	52.1	0.0	0.1	-52.1	0.67	0.00	0.00	

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■ 4.5 MEMBERS - GLOBAL DEFORMATIONS

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section
				u	u _x	u _y	u _z	φ _x	φ _y	φ _z	
16	LC1	Max φ _x	2000.0	52.1	0.0	0.1	-52.1	0.67	0.00	0.00	
		Min φ _x	0.0	8.2	-0.0	0.0	-8.2	0.15	1.86	-0.00	
		Max φ _y	0.0	8.2	-0.0	0.0	-8.2	0.15	1.86	-0.00	
		Min φ _y	4000.0	8.2	0.0	0.0	-8.2	0.15	-1.86	0.00	
		Max φ _z	500.0	24.5	-0.0	0.0	-24.5	0.36	1.85	0.01	
		Min φ _z	3500.0	24.5	0.0	0.0	-24.5	0.36	-1.85	-0.01	
17	LC1	15	0.0	8.7	0.0	0.0	-8.7	0.08	1.94	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		32	4000.0	8.7	0.0	0.0	-8.7	0.08	-1.94	0.00	
		Max u _x	4000.0	8.7	0.0	0.0	-8.7	0.08	-1.94	-0.00	
		Min u _x	0.0	8.7	-0.0	0.0	-8.7	0.08	1.94	0.00	
		Max u _y	2000.0	54.3	0.0	0.1	-54.3	0.33	0.00	0.00	
		Min u _y	0.0	8.7	-0.0	0.0	-8.7	0.08	1.94	0.00	
		Max u _z	0.0	8.7	-0.0	0.0	-8.7	0.08	1.94	0.00	
		Min u _z	2000.0	54.3	0.0	0.1	-54.3	0.33	0.00	0.00	
		Max φ _x	2000.0	54.3	0.0	0.1	-54.3	0.33	0.00	0.00	
		Min φ _x	0.0	8.7	-0.0	0.0	-8.7	0.08	1.94	0.00	
		Max φ _y	0.0	8.7	-0.0	0.0	-8.7	0.08	1.94	0.00	
		Min φ _y	4000.0	8.7	0.0	0.0	-8.7	0.08	-1.94	-0.00	
		Max φ _z	500.0	25.7	-0.0	0.0	-25.7	0.18	1.92	0.01	
		Min φ _z	3500.0	25.7	0.0	0.0	-25.7	0.18	-1.92	-0.01	
18	LC1	16	0.0	8.9	0.0	0.0	-8.9	0.00	1.97	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		31	4000.0	8.9	0.0	0.0	-8.9	0.00	-1.97	0.00	
		Max u _x	4000.0	8.9	0.0	0.0	-8.9	-0.00	-1.97	-0.00	
		Min u _x	0.0	8.9	-0.0	0.0	-8.9	-0.00	1.97	0.00	
		Max u _y	2000.0	55.0	0.0	0.1	-55.0	-0.00	0.00	0.00	
		Min u _y	0.0	8.9	-0.0	0.0	-8.9	-0.00	1.97	0.00	
		Max u _z	0.0	8.9	-0.0	0.0	-8.9	-0.00	1.97	0.00	
		Min u _z	2000.0	55.0	0.0	0.1	-55.0	-0.00	0.00	0.00	
		Max φ _x	500.0	26.1	-0.0	0.0	-26.1	-0.00	1.94	0.01	
		Min φ _x	2000.0	55.0	0.0	0.1	-55.0	-0.00	0.00	0.00	
		Max φ _y	0.0	8.9	-0.0	0.0	-8.9	-0.00	1.97	0.00	
		Min φ _y	4000.0	8.9	0.0	0.0	-8.9	-0.00	-1.97	-0.00	
		Max φ _z	500.0	26.1	-0.0	0.0	-26.1	-0.00	1.94	0.01	
		Min φ _z	3500.0	26.1	0.0	0.0	-26.1	-0.00	-1.94	-0.01	
19	LC1	17	0.0	8.7	0.0	0.0	-8.7	-0.08	1.94	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		30	4000.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	0.00	
		Max u _x	4000.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	-0.00	
		Min u _x	0.0	8.7	-0.0	0.0	-8.7	-0.08	1.94	0.00	
		Max u _y	2000.0	54.2	0.0	0.1	-54.2	-0.33	0.00	0.00	
		Min u _y	4000.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	-0.00	
		Max u _z	0.0	8.7	-0.0	0.0	-8.7	-0.08	1.94	0.00	
		Min u _z	2000.0	54.2	0.0	0.1	-54.2	-0.33	0.00	0.00	
		Max φ _x	0.0	8.7	-0.0	0.0	-8.7	-0.08	1.94	0.00	
		Min φ _x	2000.0	54.2	0.0	0.1	-54.2	-0.33	0.00	0.00	
		Max φ _y	0.0	8.7	-0.0	0.0	-8.7	-0.08	1.94	0.00	
		Min φ _y	4000.0	8.7	0.0	0.0	-8.7	-0.08	-1.94	-0.00	
		Max φ _z	500.0	25.7	-0.0	0.1	-25.7	-0.18	1.91	0.01	
		Min φ _z	3500.0	25.7	0.0	0.1	-25.7	-0.18	-1.91	-0.01	
20	LC1	18	0.0	8.2	0.0	0.0	-8.2	-0.15	1.86	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		29	4000.0	8.2	0.0	0.0	-8.2	-0.15	-1.86	0.00	
		Max u _x	4000.0	8.2	0.0	0.0	-8.2	-0.15	-1.86	-0.00	
		Min u _x	0.0	8.2	-0.0	0.0	-8.2	-0.15	1.86	0.00	
		Max u _y	2000.0	52.0	0.0	0.1	-52.0	-0.67	0.00	0.00	
		Min u _y	0.0	8.2	-0.0	0.0	-8.2	-0.15	1.86	0.00	
		Max u _z	0.0	8.2	-0.0	0.0	-8.2	-0.15	1.86	0.00	
		Min u _z	2000.0	52.0	0.0	0.1	-52.0	-0.67	0.00	0.00	
		Max φ _x	0.0	8.2	-0.0	0.0	-8.2	-0.15	1.86	0.00	
		Min φ _x	2000.0	52.0	0.0	0.1	-52.0	-0.67	0.00	0.00	
		Max φ _y	0.0	8.2	-0.0	0.0	-8.2	-0.15	1.86	0.00	
		Min φ _y	4000.0	8.2	0.0	0.0	-8.2	-0.15	-1.86	-0.00	
		Max φ _z	500.0	24.5	-0.0	0.1	-24.5	-0.36	1.84	0.01	
		Min φ _z	3500.0	24.5	0.0	0.1	-24.5	-0.36	-1.84	-0.01	
21	LC1	19	0.0	7.4	0.0	0.0	-7.4	-0.22	1.73	0.00	2 - SHAPE-THIN B.F.270X46 PANEL PROFİLİ
		28	4000.0	7.4	0.0	0.0	-7.4	-0.22	-1.73	0.00	
		Max u _x	4000.0	7.4	0.0	0.0	-7.4	-0.22	-1.73	-0.00	
		Min u _x	0.0	7.4	-0.0	0.0	-7.4	-0.22	1.73	0.00	
		Max u _y	2000.0	48.3	0.0	0.1	-48.3	-1.03	0.00	0.00	
		Min u _y	0.0	7.4	-0.0	0.0	-7.4	-0.22	1.73	0.00	
		Max u _z	0.0	7.4	-0.0	0.0	-7.4	-0.22	1.73	0.00	
		Min u _z	2000.0	48.3	0.0	0.1	-48.3	-1.03	0.00	0.00	
		Max φ _x	0.0	7.4	-0.0	0.0	-7.4	-0.22	1.73	0.00	
		Min φ _x	2000.0	48.3	0.0	0.1	-48.3	-1.03	0.00	0.00	
		Max φ _y	0.0	7.4	-0.0	0.0	-7.4	-0.22	1.73	0.00	
		Min φ _y	4000.0	7.4	0.0	0.0	-7.4	-0.22	-1.73	-0.00	
		Max φ _z	500.0	22.6	-0.0	0.1	-22.6	-0.54	1.72	0.01	
		Min φ _z	3500.0	22.6	0.0	0.1	-22.6	-0.54	-1.72	-0.01	
22	LC1	20	0.0	6.2	0.0	0.0	-6.2	-0.28	1.53	0.00	2 - SHAPE-THIN B

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■ 4.5 MEMBERS - GLOBAL DEFORMATIONS

Member No.	LC/CO	Node No.	Location x [mm]	Displacements [mm]				Rotations [°]			Section
				u	u _x	u _y	u _z	φ _x	φ _y	φ _z	
23	LC1	27	4000.0	6.2	0.0	0.0	-6.2	-0.28	-1.53	0.00	B.F.270X46 PANEL PROFILI
		Max u _x	4000.0	6.2	0.0	0.0	-6.2	-0.28	-1.53	-0.00	
		Min u _x	0.0	6.2	-0.0	0.0	-6.2	-0.28	1.53	0.00	
		Max u _y	2000.0	42.9	0.0	0.1	-42.9	-1.42	0.00	0.00	
		Min u _y	0.0	6.2	-0.0	0.0	-6.2	-0.28	1.53	0.00	
		Max u _z	0.0	6.2	-0.0	0.0	-6.2	-0.28	1.53	0.00	
		Min u _z	2000.0	42.9	0.0	0.1	-42.9	-1.42	0.00	0.00	
		Max φ _x	0.0	6.2	-0.0	0.0	-6.2	-0.28	1.53	0.00	
		Min φ _x	2000.0	42.9	0.0	0.1	-42.9	-1.42	0.00	0.00	
		Max φ _y	500.0	19.8	0.0	0.1	-19.8	-0.72	1.55	0.01	
		Min φ _y	3500.0	19.8	-0.0	0.1	-19.8	-0.72	-1.55	-0.01	
		Max φ _z	500.0	19.8	0.0	0.1	-19.8	-0.72	1.55	0.01	
		Min φ _z	3500.0	19.8	-0.0	0.1	-19.8	-0.72	-1.55	-0.01	
24	LC1	21	0.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01	2 - SHAPE-THIN B.F.270X46 PANEL PROFILI
		26	4000.0	4.9	0.0	0.0	-4.9	-0.32	-1.28	-0.01	
		Max u _x	500.0	16.3	0.0	0.1	-16.3	-0.90	1.31	0.01	
		Min u _x	3500.0	16.3	-0.0	0.1	-16.3	-0.90	-1.31	-0.01	
		Max u _y	2000.0	35.7	0.0	0.1	-35.7	-1.86	0.00	0.00	
		Min u _y	0.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01	
		Max u _z	0.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01	
		Min u _z	2000.0	35.7	0.0	0.1	-35.7	-1.86	0.00	0.00	
		Max φ _x	0.0	4.9	0.0	0.0	-4.9	-0.32	1.28	0.01	
		Min φ _x	2000.0	35.7	0.0	0.1	-35.7	-1.86	0.00	0.00	
		Max φ _y	500.0	16.3	0.0	0.1	-16.3	-0.90	1.31	0.01	
		Min φ _y	3500.0	16.3	-0.0	0.1	-16.3	-0.90	-1.31	-0.01	
		Max φ _z	500.0	16.3	0.0	0.1	-16.3	-0.90	1.31	0.01	
		Min φ _z	3500.0	16.3	-0.0	0.1	-16.3	-0.90	-1.31	-0.01	
25	LC1	22	0.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01	2 - SHAPE-THIN B.F.270X46 PANEL PROFILI
		25	4000.0	3.4	0.0	0.0	-3.4	-0.35	-0.96	-0.01	
		Max u _x	0.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01	
		Min u _x	4000.0	3.4	-0.0	0.0	-3.4	-0.35	-0.96	-0.01	
		Max u _y	2000.0	26.4	0.0	0.1	-26.4	-2.38	0.00	0.00	
		Min u _y	0.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01	
		Max u _z	0.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01	
		Min u _z	2000.0	26.4	0.0	0.1	-26.4	-2.38	0.00	0.00	
		Max φ _x	0.0	3.4	0.0	0.0	-3.4	-0.35	0.96	0.01	
		Min φ _x	2000.0	26.4	0.0	0.1	-26.4	-2.38	0.00	0.00	
		Max φ _y	500.0	12.0	0.0	0.1	-12.0	-1.08	0.98	0.01	
		Min φ _y	3500.0	12.0	-0.0	0.1	-12.0	-1.08	-0.98	-0.01	
		Max φ _z	500.0	12.0	0.0	0.1	-12.0	-1.08	0.98	0.01	
		Min φ _z	3500.0	12.0	-0.0	0.1	-12.0	-1.08	-0.98	-0.01	

■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [mm]	Forces [N]			Moments [Nmm]			
				N	V _u	V _v	M _T	M _u	M _v	
Section No. 1: SHAPE-THIN B.F.160X160 DIKME PROFILI										
1	LC1	1	0.0	-8991.4	-1786.1	451.2	-2221.0	-761257.0	-3010150.	
		5	2500.0	-9087.7	-1786.1	451.2	-2221.0	366748.0	1455170.0	
2	LC1	3	0.0	-8989.8	-1792.5	-444.8	7585.1	750094.0	-3016910.	
		7	2500.0	-9086.1	-1792.5	-444.8	7585.1	-361875.0	1464440.0	
3	LC1	2	0.0	-8991.4	-1786.1	-451.2	2221.0	761258.0	-3010150.	
		6	2500.0	-9087.7	-1786.1	-451.2	2221.0	-366748.0	1455170.0	
4	LC1	4	0.0	-8989.8	-1792.5	444.8	-7585.1	-750094.0	-3016910.	
		8	2500.0	-9086.1	-1792.5	444.8	-7585.1	361876.0	1464440.0	
Section No. 2: SHAPE-THIN B.F.270X46 PANEL PROFILI										
11	LC1	9	0.0	-1035.0	-670.3	-18.2	586264.0	25858.4	-348094.0	
		38	4000.0	-1035.0	670.3	18.2	-586264.0	25858.4	-348094.0	
12	LC1	10	0.0	-353.0	-295.8	304.6	393299.0	-143482.0	-172928.0	
		37	4000.0	-353.0	295.8	-304.6	-393299.0	-143482.0	-172928.0	
13	LC1	11	0.0	106.9	-116.0	316.7	317779.0	-164479.0	-134093.0	
		36	4000.0	106.9	116.0	-316.7	-317779.0	-164479.0	-134093.0	
14	LC1	12	0.0	304.5	87.0	324.8	244663.0	-162393.0	-107709.0	
		35	4000.0	304.5	-87.0	-324.8	-244663.0	-162393.0	-107709.0	
15	LC1	13	0.0	376.8	254.6	326.3	178661.0	-153202.0	-89572.3	

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■ 4.12 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [mm]	Forces [N]			Moments [Nmm]		
				N	V _u	V _v	M _T	M _u	M _v
15	LC1	34	4000.0	376.8	-254.6	-326.3	-178661.0	-153202.0	-89572.3
16	LC1	14	0.0	394.3	390.8	327.3	116779.0	-143980.0	-72530.8
		33	4000.0	394.3	-390.8	-327.3	-116779.0	-143980.0	-72530.8
17	LC1	15	0.0	388.8	500.1	327.0	57851.2	-137067.0	-52257.7
		32	4000.0	388.8	-500.1	-327.0	-57851.2	-137067.0	-52257.7
18	LC1	16	0.0	374.2	587.7	325.2	390.1	-133366.0	-26095.6
		31	4000.0	374.2	-587.7	-325.2	-390.1	-133366.0	-26095.6
19	LC1	17	0.0	357.6	657.2	321.5	-57127.5	-133082.0	7427.3
		30	4000.0	357.6	-657.2	-321.5	57127.5	-133082.0	7427.3
20	LC1	18	0.0	343.0	711.8	316.0	-116237.0	-135937.0	49061.7
		29	4000.0	343.0	-711.8	-316.0	116237.0	-135937.0	49061.7
21	LC1	19	0.0	332.8	756.6	308.5	-178463.0	-140970.0	99032.8
		28	4000.0	332.8	-756.6	-308.5	178463.0	-140970.0	99032.8
22	LC1	20	0.0	321.7	803.0	299.3	-245006.0	-145894.0	156753.0
		27	4000.0	321.7	-803.0	-299.3	245006.0	-145894.0	156753.0
23	LC1	21	0.0	269.9	865.0	282.5	-318788.0	-144125.0	216664.0
		26	4000.0	269.9	-865.0	-282.5	318788.0	-144125.0	216664.0
24	LC1	22	0.0	27.4	967.0	263.7	-394481.0	-121646.0	255122.0
		25	4000.0	27.4	-967.0	-263.7	394481.0	-121646.0	255122.0
25	LC1	23	0.0	-885.8	476.5	-51.9	-586392.0	42193.5	28017.7
		24	4000.0	-885.8	-476.5	51.9	586392.0	42193.5	28017.7
Section No. 3: SHAPE-THIN B.F. KIRIS-OLUK PROFILI									
6	LC1	4	0.0	-1111.6	1028.6	3711.2	-395694.0	-531432.0	173838.0
		3	4000.0	-1111.6	-1028.6	-3711.2	395694.0	-531432.0	173838.0
8	LC1	1	0.0	-1541.0	909.6	3802.4	-395305.0	-584548.0	65445.4
		2	4000.0	-1541.0	-909.6	-3802.4	395305.0	-584548.0	65445.4
9	LC1	3	0.0	-3116.4	3438.9	3999.1	-1072990.0	-1874390.0	1287050.0
			250.0	-3116.4	3425.4	3983.2	-1072990.0	-876608.0	429017.0
			250.0	-2197.5	2630.4	4710.2	-1132250.0	-144372.0	334308.0
			500.0	-2197.5	2616.8	4694.3	-1132250.0	1031200.0	-321589.0
			500.0	-1404.6	1878.7	4318.3	-958615.0	1557760.0	-381916.0
			750.0	-1404.6	1865.1	4302.4	-958615.0	2635350.0	-849893.0
			750.0	-941.5	1481.8	3660.2	-772490.0	3069110.0	-889653.0
			1000.0	-941.5	1468.2	3644.3	-772490.0	3982180.0	-125841.0
			1000.0	-723.9	1201.6	2847.2	-587608.0	4330900.0	-1271330.0
			1250.0	-723.9	1188.0	2831.3	-587608.0	5040710.0	-1570040.0
			1250.0	-672.5	957.4	1973.4	-411792.0	5315840.0	-1555210.0
			1500.0	-672.5	943.8	1957.5	-411792.0	5807210.0	-1792860.0
			1500.0	-732.3	711.7	1079.1	-244470.0	6013710.0	-1752070.0
			1750.0	-732.3	698.1	1063.2	-244470.0	6281490.0	-1928310.0
			1750.0	-866.6	450.8	185.4	-82866.4	6420210.0	-1865560.0
			2000.0	-866.6	437.2	169.5	-82866.4	6464580.0	-1976550.0
			2000.0	-1050.7	170.6	-695.7	76806.2	6533280.0	-1896860.0
			2250.0	-1050.7	157.0	-711.6	76806.2	6357360.0	-1937800.0
			2250.0	-1267.8	-128.0	-1556.8	238602.0	6351520.0	-1846390.0
			2500.0	-1267.8	-141.6	-1572.7	238602.0	5960340.0	-1812680.0
			2500.0	-1506.4	-441.0	-2392.8	406378.0	5873610.0	-1714470.0
			2750.0	-1506.4	-454.6	-2408.7	406378.0	5273440.0	-1602520.0
			2750.0	-1761.9	-762.7	-3199.2	583099.0	5097750.0	-1501820.0
			3000.0	-1761.9	-776.2	-3215.1	583099.0	4295980.0	-1309460.0
			3000.0	-2045.3	-1092.5	-3968.6	769790.0	4021700.0	-1209930.0
			3250.0	-2045.3	-1106.0	-3984.5	769790.0	3027570.0	-935114.0
			3250.0	-2397.2	-1451.7	-4657.7	959593.0	2644390.0	-836336.0
			3500.0	-2397.2	-1465.3	-4673.6	959593.0	1477990.0	-471704.0
			3500.0	-2886.9	-2043.7	-5185.8	1140370.0	992857.0	-362879.0
			3750.0	-2886.9	-2057.3	-5201.7	1140370.0	-305577.0	149752.0
			3750.0	-3428.3	-2873.9	-4458.5	1089840.0	-832243.0	484834.0
			4000.0	-3428.3	-2887.4	-4474.4	1089840.0	-1948840.0	1205000.0
10	LC1	1	0.0	-3428.3	2887.4	4474.4	-1089840.0	-1948840.0	1205000.0
		2	250.0	-3428.3	2873.9	4458.5	-1089840.0	-832243.0	484834.0
			250.0	-2886.9	2057.3	5201.7	-1140370.0	-305577.0	149752.0
			500.0	-2886.9	2043.7	5185.8	-1140370.0	992857.0	-362879.0
			500.0	-2397.2	1465.3	4673.6	-959593.0	1477990.0	-471704.0
			750.0	-2397.2	1451.7	4657.7	-959593.0	2644390.0	-836336.0
			750.0	-2045.3	1106.0	3984.5	-769790.0	3027570.0	-935114.0
			1000.0	-2045.3	1092.5	3968.6	-769790.0	4021700.0	-1209930.0
			1000.0	-1761.9	776.2	3215.1	-583099.0	4295980.0	-1309460.0
			1250.0	-1761.9	762.7	3199.2	-583099.0	5097750.0	-1501820.0
			1250.0	-1506.4	454.6	2408.7	-406378.0	5273440.0	-1602520.0
			1500.0	-1506.4	441.0	2392.8	-406378.0	5873610.0	-1714470.0
			1500.0	-1267.8	141.6	1572.7	-238602.0	5960340.0	-1812680.0
			1750.0	-1267.8	128.0	1556.8	-238602.0	6351520.0	-1846390.0
			1750.0	-1050.7	-157.0	711.6	-76806.2	6357360.0	-1937800.0
			2000.0	-1050.7	-170.6	695.7	-76806.2	6533280.0	-1896860.0
			2000.0	-866.6	-437.2	-169.5	82866.4	6464580.0	-1976550.0
			2250.0	-866.6	-450.8	-185.4	82866.4	6420210.0	-1865560.0
			2250.0	-732.3	-698.1	-1063.2	244470.0	6281490.0	-1928310.0
			2500.0	-732.3	-711.7	-1079.1	244470.0	6013710.0	-1752070.0
			2500.0	-672.5	-943.8	-1957.5	411792.0	5807210.0	-1792860.0
			2750.0	-672.5	-957.4	-1973.4	411792.0	5315840.0	-1555210.0
			2750.0	-723.9	-1188.0	-2831.3	587608.0	5040710.0	-1570040.0
			3000.0	-723.9	-1201.6	-2847.2	587608.0	4330900.0	-1271330.0
			3000.0	-941.5	-1468.2	-3644.3	772490.0	3982180.0	-1258410.0
			3250.0	-941.5	-1481.8	-3660.2	772490.0	3069110.0	-889653.0
			3250.0	-1404.6	-1865.1	-4302.4	958615.0	2635350.0	-849893.0
			3500.0	-1404.6	-1878.7	-4318.3	958615.0	1557760.0	-381916.0
			3500.0	-2197.5	-2616.8	-4694.3	1132250.0	1031200.0	-321589.0
			3750.0	-2197.5	-2630.4	-4710.2	1132250.0	-144372.0	334308.0
			3750.0	-3116.4	-3425.4	-3983.2	1072990.0	-876608.0	429017.0
		4	4000.0	-3116.4	-3438.9	-3999.1	1072990.0	-1874390.0	1287060.0

Project: BIFLEX 4000X4000

Model: BIOFLEX 4X4 SNOW LOAD

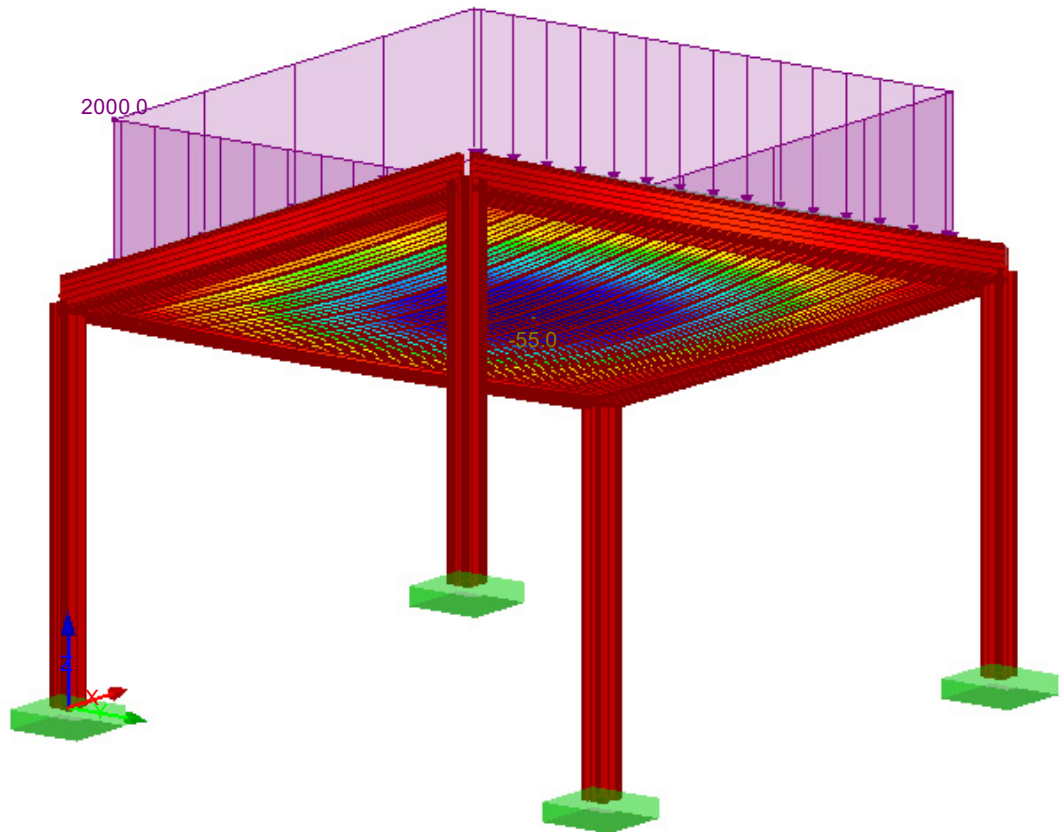
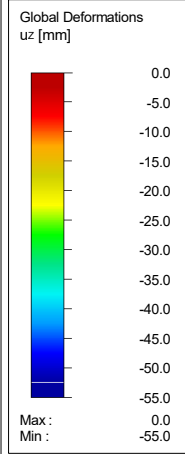
Date: 2.09.2024

KAR YÜKÜ

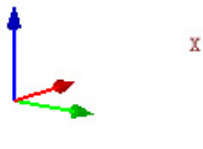
■ GLOBAL DEFORMATIONS u_z

LC1 : Snow
Loads [Pa]
Global Deformations u-Z [mm]

Isometric



Z



Factor of deformations: 3.00
Max u-Z: 0.0, Min u-Z: -55.0 mm