

Structural Analysis co-venient



Analyzed File	SIMULATIONS 3D MODEL 07.06 v14
Version	Autodesk Fusion (2602.1.14)
Creation Date	2025-06-08, 07:06:57
Author	Waad Zumrawi

☐ **Report Properties**

Title	Studies
Author	ASUS

☐ **Simulation Model 2**

☐ **Study 1 - Static Stress**

☐ **Study Properties**

Study Type	Static Stress
Last Modification Date	2025-06-08, 06:57:55

☐ **Settings**

☐ **General**

Contact Tolerance	0.10 mm
Remove Rigid Body Modes	No

☐ **Mesh**

Average Element Size (% of model size)	
Solids	10
Scale Mesh Size Per Part	No
Average Element Size (absolute value)	-
Element Order	Parabolic
Create Curved Mesh Elements	No
Max. Turn Angle on Curves (Deg.)	60
Max. Adjacent Mesh Size Ratio	1.5
Max. Aspect Ratio	10
Minimum Element Size (% of average size)	20

☐ **Adaptive Mesh Refinement**

Number of Refinement Steps	0
Results Convergence Tolerance (%)	20
Portion of Elements to Refine (%)	10
Results for Baseline Accuracy	von Mises Stress

☐ **Materials**

Component	Material	Safety Factor
Component8:1/Body1	Steel ASTM A572	Yield Strength
Component8:1/Body2	Steel ASTM A572	Yield Strength
Component8:1/Body3	Steel ASTM A572	Yield Strength
Component8:1/Body4	Steel ASTM A572	Yield Strength
Component8:1/Body5	Steel ASTM A572	Yield Strength
Component8:1/Body6	Steel ASTM A572	Yield Strength
Component8:1/Body7	Steel ASTM A572	Yield Strength
Component8:1/Body8	Steel ASTM A572	Yield Strength
Component22:1	Steel ASTM A572	Yield Strength
Component23:1	Steel ASTM A572	Yield Strength
Component124:1	Steel ASTM A572	Yield Strength
Component125:1	Steel ASTM A572	Yield Strength
Component130:1	Steel ASTM A572	Yield Strength
Component131:1	Steel ASTM A572	Yield Strength
Component146:1	Steel ASTM A572	Yield Strength
Component149:1	Steel ASTM A572	Yield Strength
Component191:1	Steel ASTM A572	Yield Strength

☐ **Steel ASTM A572**

Density	7.850E-06 kg / mm^3
Young's Modulus	199959.00 MPa
Poisson's Ratio	0.30
Yield Strength	344.756 MPa
Ultimate Tensile Strength	448.20 MPa
Thermal Conductivity	0.045 W / (mm C)
Thermal Expansion Coefficient	1.170E-05 / C
Specific Heat	480.00 J / (kg C)

☐ **Contacts**

☐ **Bonded**

Name
[S] Bonded1 [Component146:1 Component191:1]
[S] Bonded2 [Component146:1 Component191:1]
[S] Bonded3 [Component131:1 Component149:1]
[S] Bonded4 [Component130:1 Component191:1]
[S] Bonded5 [Component130:1 Component191:1]
[S] Bonded6 [Component125:1 Component149:1]
[S] Bonded7 [Component124:1 Component149:1]
[S] Bonded8 [Component23:1 Component130:1]
[S] Bonded9 [Component22:1 Component23:1]
[S] Bonded10 [Component8:1(Body8) Component130:1]
[S] Bonded11 [Component8:1(Body7) Component130:1]
[S] Bonded12 [Component8:1(Body6) Component130:1]
[S] Bonded13 [Component8:1(Body5) Component130:1]
[S] Bonded14 [Component8:1(Body4) Component130:1]
[S] Bonded15 [Component8:1(Body3) Component130:1]
[S] Bonded16 [Component8:1(Body2) Component130:1]
[S] Bonded17 [Component8:1(Body1) Component130:1]

☐ **Mesh**

Type	Nodes	Elements
Solids	187117	104851

☐ **Load Case1**

☐ **Constraints**

☐ **Fixed1**

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

☐ **Selected Entities**



Fixed2

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

Selected Entities



Fixed3

Type	Fixed
Ux	Fixed
Uy	Fixed

Uz	Fixed
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Selected Entities



Fixed4

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

Selected Entities



Fixed5

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

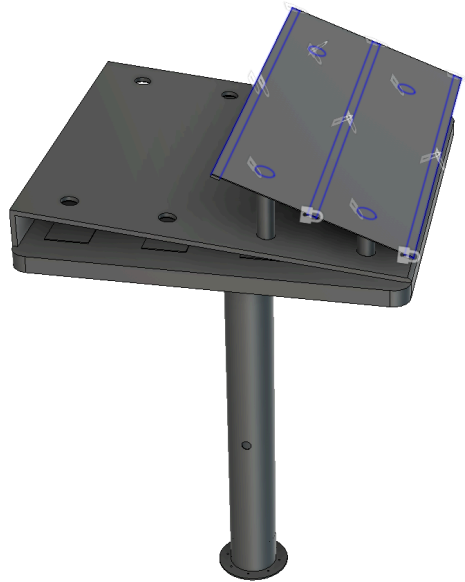
 Selected Entities



 Fixed6

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

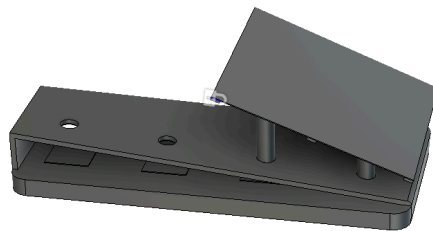
 Selected Entities



Fixed7

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

Selected Entities



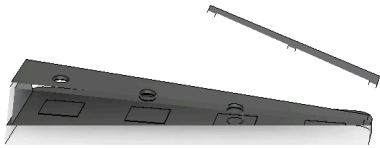
Loads

Gravity

Type	Gravity
Magnitude	9.807 m / s ²

X Value	0.00 m / s ²
Y Value	0.00 m / s ²
Z Value	-9.807 m / s ²

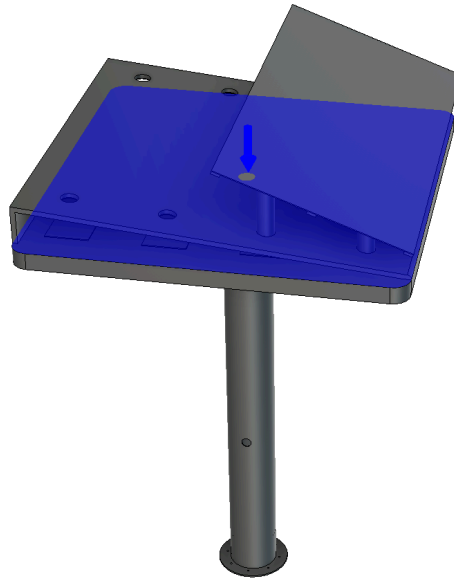
 Selected Entities



 Force1

Type	Force
Magnitude	3000.00 N
X Value	0.00 N
Y Value	0.00 N
Z Value	-3000.00 N
Force Per Entity	No

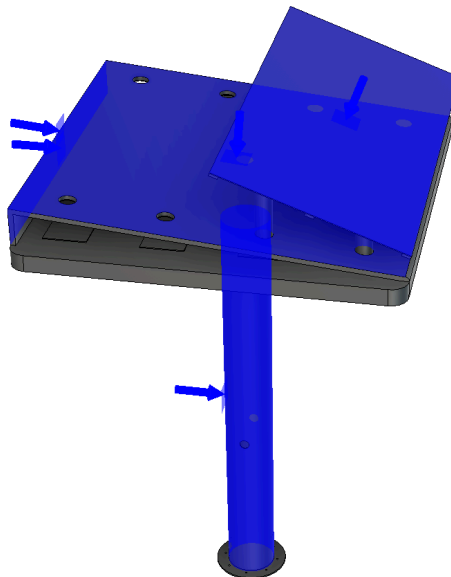
 Selected Entities



Pressure1

Type	Pressure
Magnitude	0.009 MPa

Selected Entities



Results

Result Summary

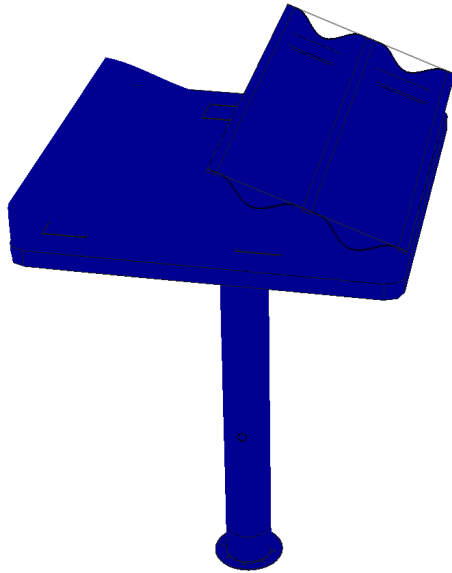
Name	Minimum	Maximum
Safety Factor		
Safety Factor (Per Body)	5.401	15.00
Stress		

von Mises	3.253E-05 MPa	63.837 MPa
1st Principal	-20.173 MPa	89.866 MPa
3rd Principal	-48.946 MPa	34.043 MPa
Normal XX	-39.091 MPa	80.811 MPa
Normal YY	-36.64 MPa	49.924 MPa
Normal ZZ	-30.601 MPa	36.655 MPa
Shear XY	-28.942 MPa	14.346 MPa
Shear YZ	-13.49 MPa	10.78 MPa
Shear ZX	-11.129 MPa	22.646 MPa
Displacement		
Total	0.00 mm	0.623 mm
X	-0.013 mm	0.015 mm
Y	-0.115 mm	0.011 mm
Z	-0.621 mm	0.069 mm
Reaction Force		
Total	0.00 N	12715.848 N
X	-2457.538 N	1522.929 N
Y	-3699.044 N	3438.438 N
Z	-7649.444 N	12496.143 N
Strain		
Equivalent	1.545E-10	5.199E-04
1st Principal	-4.950E-07	5.547E-04
3rd Principal	-3.037E-04	1.312E-06
Normal XX	-1.344E-04	3.199E-04
Normal YY	-1.792E-04	2.075E-04
Normal ZZ	-1.252E-04	9.707E-05
Shear XY	-3.763E-04	1.865E-04
Shear YZ	-1.754E-04	1.402E-04
Shear ZX	-1.447E-04	2.945E-04
Contact Pressure		
Total	0.00 MPa	28.754 MPa
X	-13.426 MPa	21.845 MPa
Y	-9.865 MPa	16.679 MPa
Z	-11.66 MPa	8.453 MPa
Contact Force		
Total	0.00 N	13614.163 N
X	-8515.573 N	6770.546 N
Y	-3699.123 N	4459.995 N
Z	-10621.844 N	12496.144 N

☐ Safety Factor

☐ Safety Factor (Per Body)

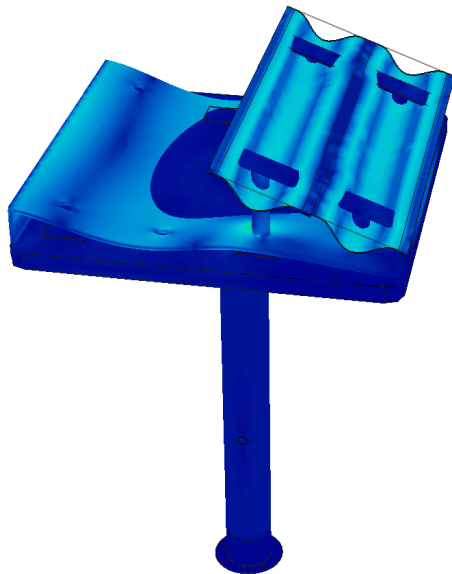
0.00  8.00



☐ Stress

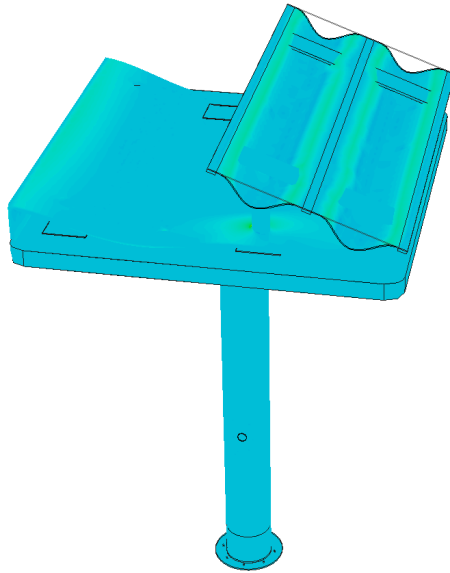
☐ von Mises

[MPa] 0.00  63.837



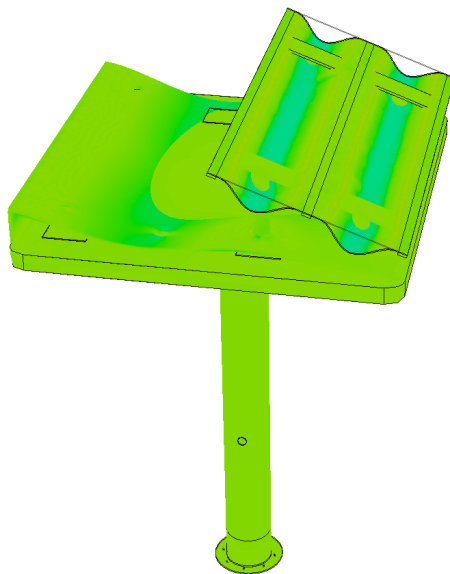
☐ 1st Principal

[MPa] -20.173  89.866



3d Principal

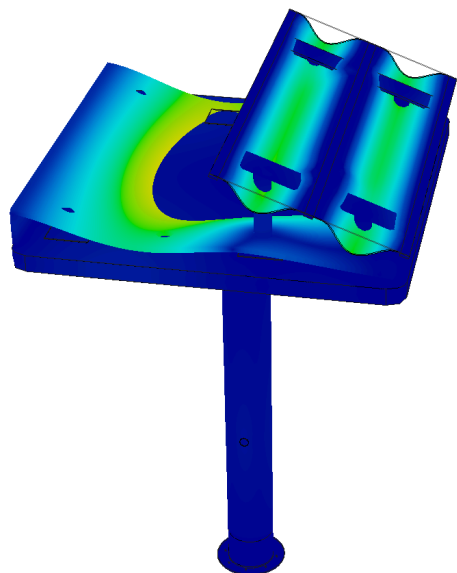
[MPa] -48.946 34.043



Displacement

Total

[mm] 0.00 0.623



Analysis TABLE 2000N

MESH:

Entity	Size
Nodes	7207
Elements	24388

ELEMENT TYPE:

Connectivity	Statistics
TE4	24388 (100.00%)

ELEMENT QUALITY:

Criterion	Good	Poor	Bad	Worst	Average
Stretch	23378 (95.86%)	1010 (4.14%)	0 (0.00%)	0.058	0.569
Aspect Ratio	18233 (74.76%)	5631 (23.09%)	524 (2.15%)	35.832	2.273

Materials.1

Material	Aluminium
Young's modulus	7e+010N_m2
Poisson's ratio	0.346
Density	2710kg_m3
Coefficient of thermal expansion	2.36e-005_Kdeg
Yield strength	9.5e+007N_m2

Material	WOOD OAK CUSTOM
Young's modulus	1.32e+010N_m2
Poisson's ratio	0.35
Density	753kg_m3

Yield strength	4e+007N_m2
Coefficient of thermal expansion	3e-005_Kdeg

Static Case

Boundary Conditions

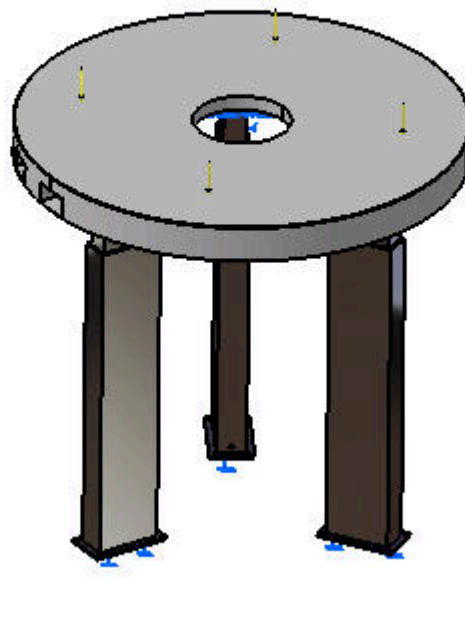


Figure 1

STRUCTURE Computation

Number of nodes : 7207
 Number of elements : 24388
 Number of D.O.F. : 21621
 Number of Contact relations : 0
 Number of Kinematic relations : 0

Linear tetrahedron : 24388

RESTRAINT Computation

Name: Restraints.1

Number of S.P.C : 2952

LOAD Computation

Name: Loads.1

Applied load resultant :

$F_x = 2.328e-010 \text{ N}$

$F_y = -2.037e-010 \text{ N}$

$F_z = -2.000e+003 \text{ N}$

$M_x = -8.659e-007 \text{ Nxm}$

$M_y = -1.220e-006 \text{ Nxm}$

$M_z = 1.246e-010 \text{ Nxm}$

STIFFNESS Computation

Number of lines : 21621

Number of coefficients : 378681

Number of blocks : 1

Maximum number of coefficients per bloc : 378681

Total matrix size : 4.42 Mb

SINGULARITY Computation

Restraint: Restraints.1

Number of local singularities : 0

Number of singularities in translation : 0

Number of singularities in rotation : 0

Generated constraint type : MPC

CONSTRAINT Computation

Restraint: Restraints.1

Number of constraints : 2952

Number of coefficients : 0

Number of factorized constraints : 2952

Number of coefficients : 0

Number of deferred constraints : 0

FACTORIZED Computation

Method : SPARSE

Number of factorized degrees : 18669
 Number of supernodes : 1607
 Number of overhead indices : 78708
 Number of coefficients : 1431453
 Maximum front width : 285
 Maximum front size : 40755
 Size of the factorized matrix (Mb) : 10 . 9211
 Number of blocks : 1
 Number of Mflops for factorization : 1 . 688e+002
 Number of Mflops for solve : 5 . 819e+000
 Minimum relative pivot : 3 . 056e-003

Minimum and maximum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
2.8067e+007	Tz	4961	-2.3753e+002	-2.7574e+002	1.5580e+003
4.4540e+010	Ty	747	-1.3170e+002	3.2811e+002	8.9051e+002

Minimum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
3.3235e+007	Tz	3963	4.9887e+002	-3.8000e+001	1.3571e+003
3.3520e+007	Tz	2544	-2.0930e+002	3.1665e+002	1.2930e+003
3.8631e+007	Tz	3051	-2.1358e+002	4.2183e+002	1.4074e+003
3.8976e+007	Tz	2834	-1.7263e+002	3.5872e+002	1.5650e+003
4.4247e+007	Tz	6843	3.8082e+002	9.5079e+001	1.6130e+003
5.3882e+007	Tx	4696	-1.6993e+002	-3.7033e+002	1.2930e+003
5.5419e+007	Tx	4725	-1.3737e+002	-3.9794e+002	1.5630e+003
5.6320e+007	Ty	3050	-2.1266e+002	4.2067e+002	1.3886e+003
5.8374e+007	Tx	2834	-1.7263e+002	3.5872e+002	1.5650e+003

Translational pivot distribution

Value	Percentage
10.E7 --> 10.E8	2.0355e-001
10.E8 --> 10.E9	2.0767e+001
10.E9 --> 10.E10	7.5617e+001

10.E10 --> 10.E11	3.4121e+000
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DIRECT METHOD Computation

Name: Static Case Solution.1

Restraint: Restraints.1

Load: Loads.1

Strain Energy : 5.565e-003 J

Equilibrium

Components	Applied Forces	Reactions	Residual	Relative Magnitude Error
Fx (N)	2.3283e-010	-2.3727e-010	-4.4409e-012	1.1605e-014
Fy (N)	-2.0373e-010	2.3470e-010	3.0973e-011	8.0936e-014
Fz (N)	-2.0000e+003	2.0000e+003	-1.3506e-010	3.5293e-013
Mx (Nxm)	-8.6594e-007	8.6577e-007	-1.7094e-010	2.7694e-013
My (Nxm)	-1.2200e-006	1.2200e-006	-3.1527e-011	5.1076e-014
Mz (Nxm)	1.2460e-010	-1.5043e-010	-2.5822e-011	4.1833e-014

Static Case Solution.1 - Deformed mesh.2

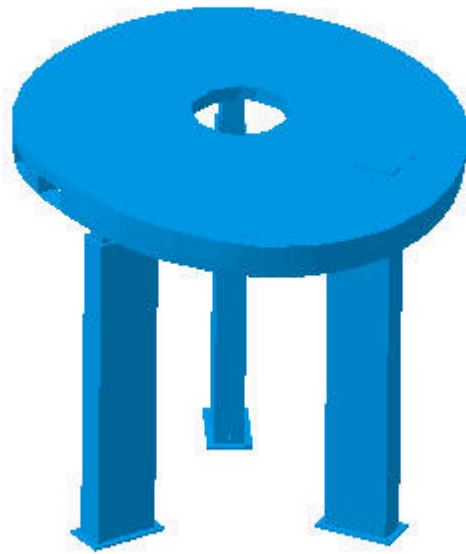


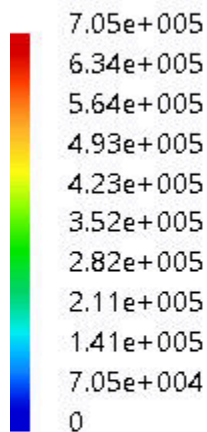
Figure 2

On deformed mesh ---- On boundary ---- Over all the model

Static Case Solution.1 - Von Mises stress (nodal values).2

Von Mises stress (nodal values).2

N_m2



On Boundary

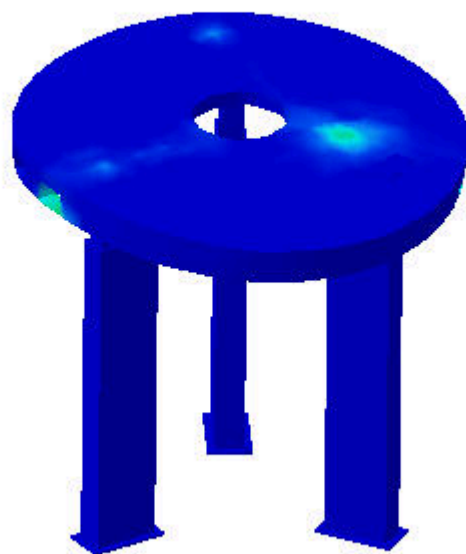


Figure 3

3D elements: : Components: : All

On deformed mesh ---- On boundary ---- Over all the model

Global Sensors

Sensor Name	Sensor Value
Energy	0.006J

BENCH 6000N

MESH:

Entity	Size
Nodes	1926
Elements	5481

ELEMENT TYPE:

Connectivity	Statistics
TE4	5481 (100.00%)

ELEMENT QUALITY:

Criterion	Good	Poor	Bad	Worst	Average
Stretch	5363 (97.85%)	118 (2.15%)	0 (0.00%)	0.206	0.566
Aspect Ratio	3801 (69.35%)	1617 (29.50%)	63 (1.15%)	8.324	2.251

Materials.1

Material	Aluminium
Young's modulus	7e+010N_m2
Poisson's ratio	0.346
Density	2710kg_m3
Coefficient of thermal expansion	2.36e-005_Kdeg
Yield strength	9.5e+007N_m2

Material	WOOD OAK CUSTOM
Young's modulus	1.32e+010N_m2
Poisson's ratio	0.35
Density	753kg_m3

Yield strength	4e+007N_m2
Coefficient of thermal expansion	3e-005_Kdeg

Static Case

Boundary Conditions

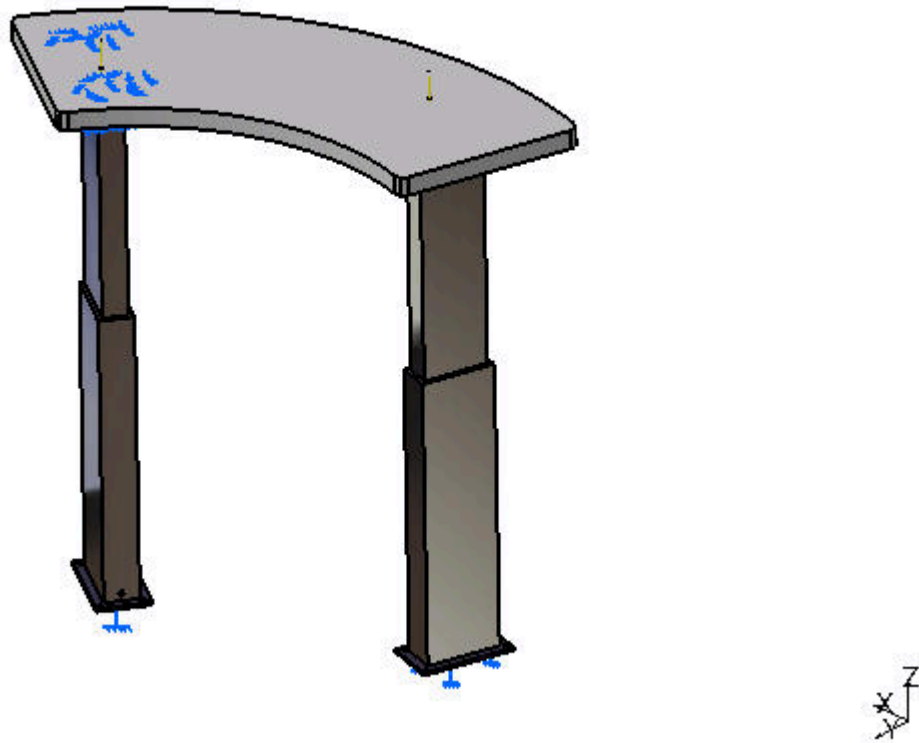


Figure 1

STRUCTURE Computation

Number of nodes : 1926
 Number of elements : 5481
 Number of D.O.F. : 5778
 Number of Contact relations : 0
 Number of Kinematic relations : 0

Linear tetrahedron : 5481

RESTRAINT Computation

Name: Restraints.1

Number of S.P.C : 1641

LOAD Computation

Name: Loads.1

Applied load resultant :

$F_x = -3.281 \times 10^{-12} \text{ N}$

$F_y = -1.555 \times 10^{-12} \text{ N}$

$F_z = -6.000 \times 10^3 \text{ N}$

$M_x = 4.542 \times 10^3 \text{ Nxm}$

$M_y = 1.662 \times 10^3 \text{ Nxm}$

$M_z = -3.389 \times 10^{-12} \text{ Nxm}$

STIFFNESS Computation

Number of lines : 5778

Number of coefficients : 94113

Number of blocks : 1

Maximum number of coefficients per bloc : 94113

Total matrix size : 1.10 Mb

SINGULARITY Computation

Restraint: Restraints.1

Number of local singularities : 0

Number of singularities in translation : 0

Number of singularities in rotation : 0

Generated constraint type : MPC

CONSTRAINT Computation

Restraint: Restraints.1

Number of constraints : 1641

Number of coefficients : 0

Number of factorized constraints : 1458

Number of coefficients : 0

Number of deferred constraints : 0

FACTORIZED Computation

Method : SPARSE

Number of factorized degrees : 4320
 Number of supernodes : 605
 Number of overhead indices : 17865
 Number of coefficients : 175572
 Maximum front width : 117
 Maximum front size : 6903
 Size of the factorized matrix (Mb) : 1 . 33951
 Number of blocks : 1
 Number of Mflops for factorization : 1 . 078e+001
 Number of Mflops for solve : 7 . 239e-001
 Minimum relative pivot : 3 . 586e-003

Minimum and maximum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
5.9686e+007	Tx	1926	3.3631e+002	-8.7885e+002	1.5881e+003
3.3308e+010	Ty	481	-1.1816e+002	-9.0950e+002	2.7309e+002

Minimum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
1.4626e+008	Tz	11	-1.0022e+002	-1.0911e+003	1.8800e+002
1.5893e+008	Ty	1926	3.3631e+002	-8.7885e+002	1.5881e+003
1.7550e+008	Tz	127	-5.4845e+001	-8.8727e+002	2.3803e+002
1.7886e+008	Tx	12	-1.1222e+002	-1.0911e+003	1.8800e+002
1.9112e+008	Tx	11	-1.0022e+002	-1.0911e+003	1.8800e+002
1.9253e+008	Tz	12	-1.1222e+002	-1.0911e+003	1.8800e+002
1.9617e+008	Tx	1392	-1.6444e+002	-9.7989e+002	1.1505e+003
2.0155e+008	Ty	122	-1.7837e+002	-9.8446e+002	1.8800e+002
2.0497e+008	Ty	11	-1.0022e+002	-1.0911e+003	1.8800e+002

Translational pivot distribution

Value	Percentage
10.E7 --> 10.E8	2.3148e-002
10.E8 --> 10.E9	1.1435e+001
10.E9 --> 10.E10	8.4282e+001

10.E10 --> 10.E11	4.2593e+000
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DIRECT METHOD Computation

Name: Static Case Solution.1

Restraint: Restraints.1

Load: Loads.1

Strain Energy : 4.702e-004 J

Equilibrium

Components	Applied Forces	Reactions	Residual	Relative Magnitude Error
Fx (N)	-3.2814e-012	3.3147e-012	3.3289e-014	2.5470e-016
Fy (N)	-1.5549e-012	1.3642e-012	-1.9067e-013	1.4589e-015
Fz (N)	-6.0000e+003	6.0000e+003	1.8190e-012	1.3917e-014
Mx (Nxm)	4.5420e+003	-4.5420e+003	0.0000e+000	0.0000e+000
My (Nxm)	1.6616e+003	-1.6616e+003	3.1832e-012	1.5099e-014
Mz (Nxm)	-3.3888e-012	3.3378e-012	-5.1046e-014	2.4213e-016

Static Case Solution.1 - Deformed mesh.2

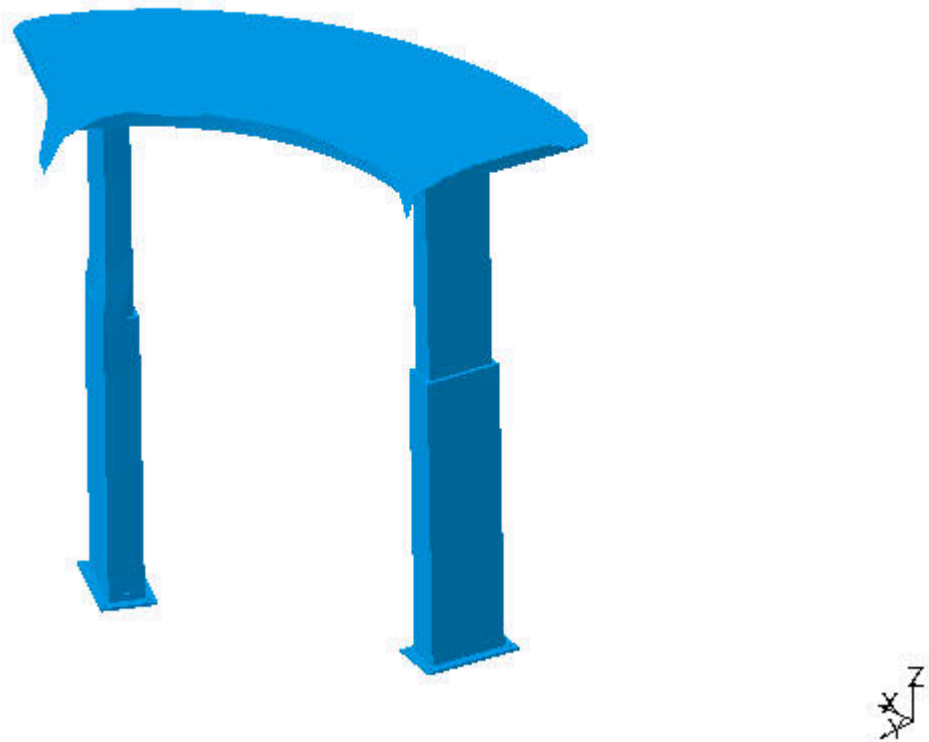


Figure 2

On deformed mesh ---- On boundary ---- Over all the model

Static Case Solution.1 - Von Mises stress (nodal values).2

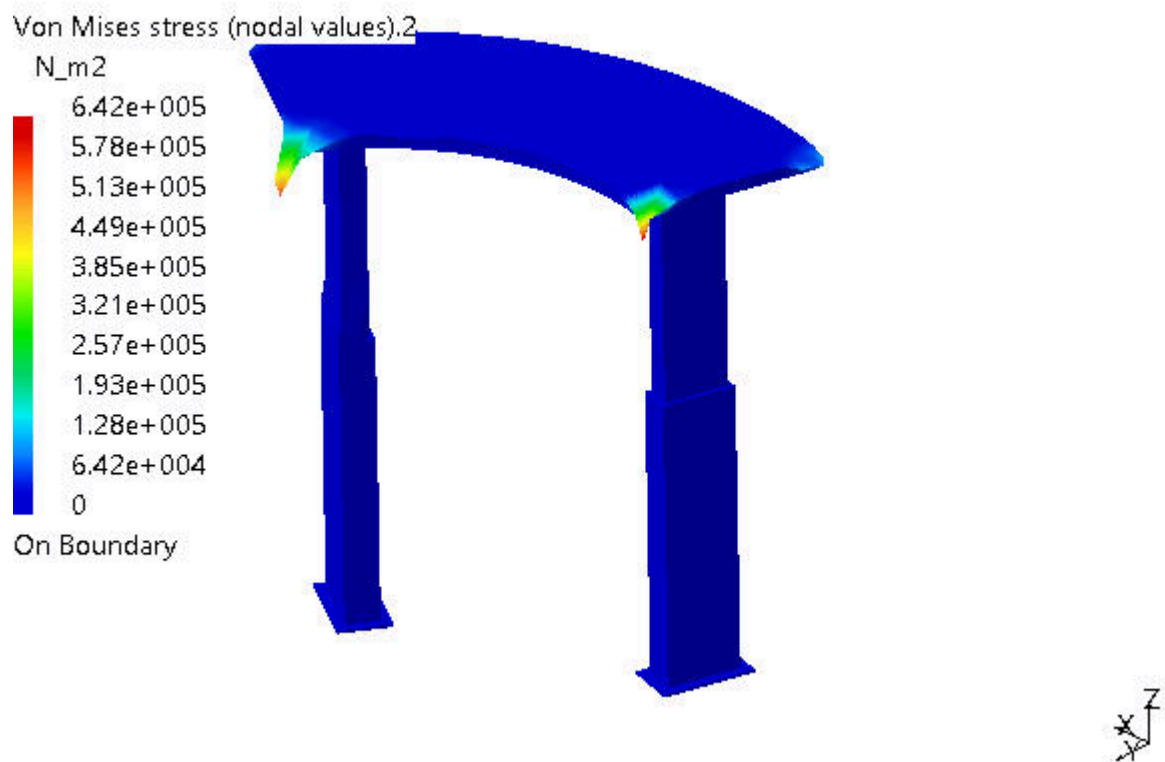


Figure 3

3D elements: : Components: : All

On deformed mesh ---- On boundary ---- Over all the model

Global Sensors

Sensor Name	Sensor Value
Energy	4.702e-004J

Analysis BACKREST

MESH:

Entity	Size
Nodes	6811
Elements	18597

ELEMENT TYPE:

Connectivity	Statistics
TE4	18597 (100.00%)

ELEMENT QUALITY:

Criterion	Good	Poor	Bad	Worst	Average
Stretch	18443 (99.17%)	154 (0.83%)	0 (0.00%)	0.082	0.570
Aspect Ratio	12453 (66.96%)	6093 (32.76%)	51 (0.27%)	13.173	2.285

Materials.1

Material	Aluminium
Young's modulus	7e+010N_m2
Poisson's ratio	0.346
Density	2710kg_m3
Coefficient of thermal expansion	2.36e-005_Kdeg
Yield strength	9.5e+007N_m2

Material	WOOD OAK CUSTOM
Young's modulus	1.32e+010N_m2
Poisson's ratio	0.35
Density	753kg_m3

Yield strength	4e+007N_m2
Coefficient of thermal expansion	3e-005_Kdeg

Static Case

Boundary Conditions

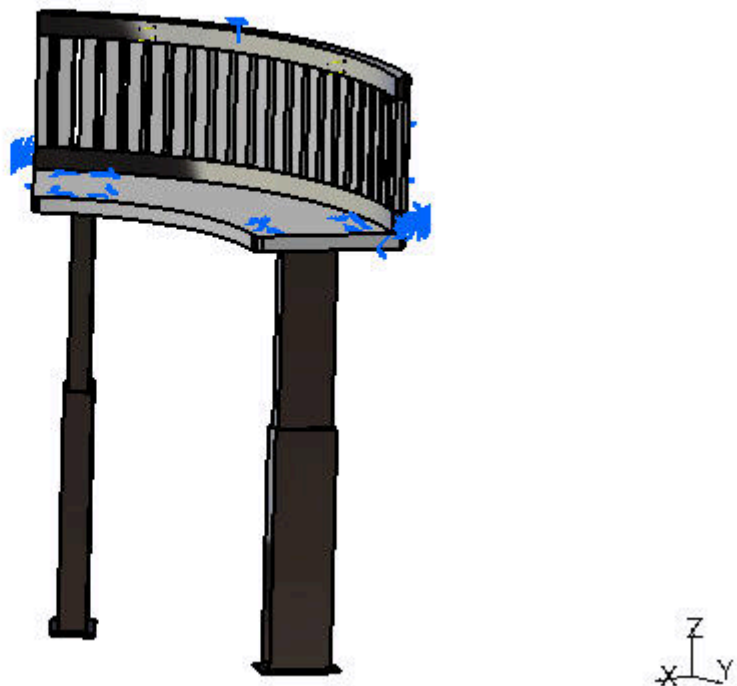


Figure 1

STRUCTURE Computation

Number of nodes : 6811
 Number of elements : 18597
 Number of D.O.F. : 20433
 Number of Contact relations : 0
 Number of Kinematic relations : 0

Linear tetrahedron : 18597

RESTRAINT Computation

Name: Restraints.1

Number of S.P.C : 5061

LOAD Computation

Name: Loads.1

Applied load resultant :

$F_x = -1.500 \times 10^3 \text{ N}$

$F_y = 5.701 \times 10^{-11} \text{ N}$

$F_z = 1.008 \times 10^{-9} \text{ N}$

$M_x = 3.880 \times 10^{-9} \text{ Nxm}$

$M_y = -2.809 \times 10^3 \text{ Nxm}$

$M_z = -2.992 \times 10^2 \text{ Nxm}$

STIFFNESS Computation

Number of lines : 20433

Number of coefficients : 324456

Number of blocks : 1

Maximum number of coefficients per bloc : 324456

Total matrix size : 3.79 Mb

SINGULARITY Computation

Restraint: Restraints.1

Number of local singularities : 0

Number of singularities in translation : 0

Number of singularities in rotation : 0

Generated constraint type : MPC

CONSTRAINT Computation

Restraint: Restraints.1

Number of constraints : 5061

Number of coefficients : 0

Number of factorized constraints : 5037

Number of coefficients : 0

Number of deferred constraints : 0

FACTORIZED Computation

Method : SPARSE

Number of factorized degrees : 15396
 Number of supernodes : 1194
 Number of overhead indices : 37308
 Number of coefficients : 611412
 Maximum front width : 123
 Maximum front size : 7626
 Size of the factorized matrix (Mb) : 4 . 6647
 Number of blocks : 1
 Number of Mflops for factorization : 3 . 106e+001
 Number of Mflops for solve : 2 . 523e+000
 Minimum relative pivot : 1 . 752e-004

Minimum and maximum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
1.2487e+006	Ty	6811	-8.5231e+002	-8.7127e+002	1.9991e+003
5.4873e+010	Ty	6663	-8.5446e+002	-8.4255e+002	1.9049e+003

Minimum pivot

Value	Dof	Node	x (mm)	y (mm)	z (mm)
3.7730e+006	Tx	6169	-1.0398e+003	-6.1990e+002	1.7504e+003
3.8553e+006	Ty	6169	-1.0398e+003	-6.1990e+002	1.7504e+003
4.1042e+006	Tz	1334	-8.8606e+002	9.9293e+001	1.5630e+003
4.4966e+006	Tx	6811	-8.5231e+002	-8.7127e+002	1.9991e+003
4.2263e+007	Tx	3185	-8.8603e+002	-8.0929e+002	1.7955e+003
4.3255e+007	Tx	3039	-8.8949e+002	-8.5661e+002	1.6830e+003
4.5887e+007	Tz	4884	-1.1702e+003	-2.6590e+002	2.0430e+003
4.6071e+007	Tz	3039	-8.8949e+002	-8.5661e+002	1.6830e+003
4.6850e+007	Ty	2139	-1.1943e+003	-1.1714e+002	1.8630e+003

Translational pivot distribution

Value	Percentage
10.E6 --> 10.E7	3.2476e-002
10.E7 --> 10.E8	8.7685e-001
10.E8 --> 10.E9	7.4201e+001

10.E9 --> 10.E10	2.3207e+001
10.E10 --> 10.E11	1.6823e+000

DIRECT METHOD Computation

Name: Static Case Solution.1

Restraint: Restraints.1

Load: Loads.1

Strain Energy : 1.821e-005 J

Equilibrium

Components	Applied Forces	Reactions	Residual	Relative Magnitude Error
Fx (N)	-1.5000e+003	1.5000e+003	1.5916e-012	3.1388e-013
Fy (N)	5.7014e-011	-5.7053e-011	-3.8858e-014	7.6630e-015
Fz (N)	1.0077e-009	-1.0077e-009	-1.0353e-014	2.0416e-015
Mx (Nxm)	3.8801e-009	-3.8800e-009	6.2475e-014	5.8308e-015
My (Nxm)	-2.8092e+003	2.8092e+003	-8.1855e-012	7.6395e-013
Mz (Nxm)	-2.9920e+002	2.9920e+002	-7.3896e-013	6.8967e-014

Static Case Solution.1 - Deformed mesh.2



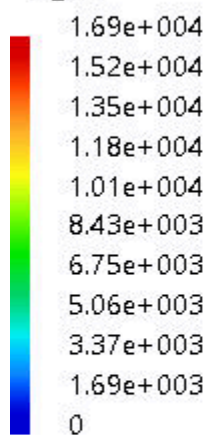
Figure 2

On deformed mesh ---- On boundary ---- Over all the model

Static Case Solution.1 - Von Mises stress (nodal values).2

Von Mises stress (nodal values).2

N_m2



On Boundary

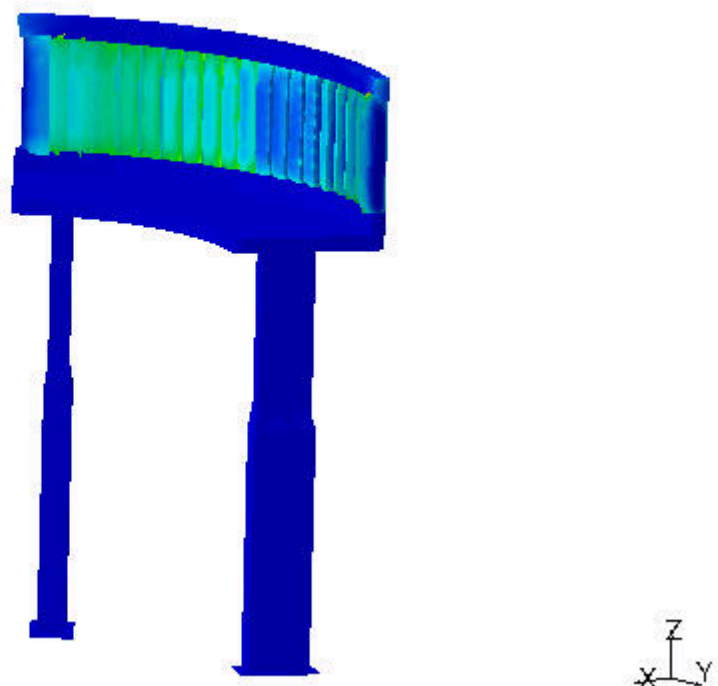


Figure 3

3D elements: : Components: : All

On deformed mesh ---- On boundary ---- Over all the model

Global Sensors

Sensor Name	Sensor Value
Energy	1.821e-005J