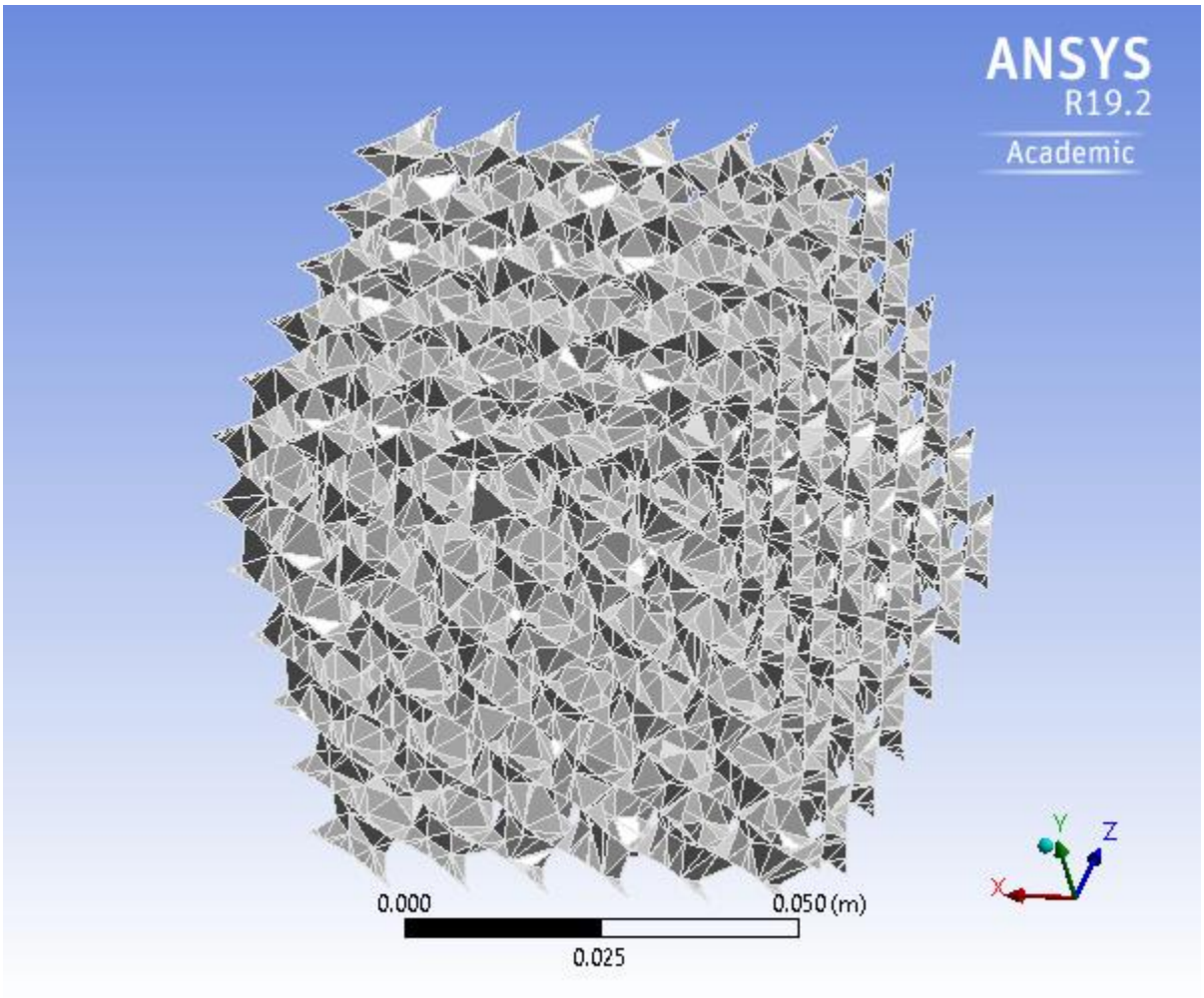
Project

First Saved	Sunday, February 3, 2019
Last Saved	Sunday, February 3, 2019
Product Version	19.2 Release
Save Project Before Solution	No
Save Project After Solution	No



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Report Not Finalized

Not all objects described below are in a finalized state. As a result, data may be incomplete, obsolete or in error. View first state problem. To finalize this report, edit objects as needed and solve the analyses.

Units

TABLE 1

Unit System	Metric (m, kg, N, s, V, A) Degrees rad/s Celsius
Angle	Degrees
Rotational Velocity	rad/s
Temperature	Celsius

Model (B4)

Geometry

TABLE 2
Model (B4) > Geometry

Object Name	*Geometry*
State	Fully Defined
Definition	
Source	C:\Users\fraja\Desktop\Models\Schwarz D\Schwarz D V2.sat
Type	ACIS
Length Unit	Millimeters
Element Control	Program Controlled

Display Style	Body Color
Bounding Box	
Length X	7.e-002 m
Length Y	7.e-002 m
Length Z	7.e-002 m
Properties	
Volume	6.6311e-006 m³
Mass	0. kg
Surface Area(approx.)	6.6311e-002 m²
Scale Factor Value	1.
Statistics	
Bodies	1
Active Bodies	1
Nodes	205304
Elements	216661
Mesh Metric	None
Update Options	
Assign Default Material	No
Basic Geometry Options	
Solid Bodies	Yes
Surface Bodies	Yes
Line Bodies	No
Parameters	Independent
Parameter Key	ANS;DS
Attributes	No
Named Selections	No
Material Properties	No
Advanced Geometry Options	
Use Associativity	Yes
Coordinate Systems	No
Reader Mode Saves Updated File	No
Use Instances	Yes
Smart CAD Update	Yes
Compare Parts On Update	No
Analysis Type	3-D
Mixed Import Resolution	None
Clean Bodies On Import	No
Stitch Surfaces On Import	No
Decompose Disjoint Geometry	Yes
Enclosure and Symmetry Processing	Yes

TABLE 3
Model (B4) > Geometry > Parts

Object Name	*Part 1*
State	Meshed
Graphics Properties	
Visible	Yes
Transparency	1
Definition	

Suppressed	No
Stiffness Behavior	Flexible
Coordinate System	Default Coordinate System
Reference Temperature	By Environment
Thickness	1.e-004 m
Thickness Mode	Manual
Offset Type	Middle
Behavior	None
Material	
Assignment	Zeolite Composite
Nonlinear Effects	Yes
Thermal Strain Effects	Yes
Bounding Box	
Length X	7.e-002 m
Length Y	7.e-002 m
Length Z	7.e-002 m
Properties	
Volume	6.6311e-006 m³
Mass	0. kg
Centroid X	-0.23537 m
Centroid Y	0.13163 m
Centroid Z	0.28835 m
Moment of Inertia Ip1	0. kg·m²
Moment of Inertia Ip2	0. kg·m²
Moment of Inertia Ip3	0. kg·m²
Surface Area(approx.)	6.6311e-002 m²
Statistics	
Nodes	205304
Elements	216661
Mesh Metric	None

Coordinate Systems

TABLE 4
Model (B4) > Coordinate Systems > Coordinate System

Object Name	*Global Coordinate System*
State	Fully Defined
Definition	
Type	Cartesian
Coordinate System ID	0.
Origin	
Origin X	0. m
Origin Y	0. m
Origin Z	0. m
Directional Vectors	
X Axis Data	[1. 0. 0.]
Y Axis Data	[0. 1. 0.]
Z Axis Data	[0. 0. 1.]

Mesh

TABLE 5
Model (B4) > Mesh

Object Name	*Mesh*
State	Solved
Display	
Display Style	Use Geometry Setting
Defaults	
Physics Preference	Mechanical
Element Order	Program Controlled
Element Size	6.5e-004 m
Sizing	
Use Adaptive Sizing	No
Growth Rate	Default (1.2)
Mesh Defeaturing	Yes
Defeature Size	Default (3.25e-006 m)
Capture Curvature	Yes
Curvature Min Size	Default (6.5e-006 m)
Curvature Normal Angle	Default (30.0°)
Capture Proximity	No
Bounding Box Diagonal	0.12124 m
Average Surface Area	5.657e-006 m²
Minimum Edge Length	5.8577e-005 m
Quality	
Check Mesh Quality	Yes, Errors
Error Limits	Standard Mechanical
Target Quality	Default (0.050000)
Smoothing	Medium
Mesh Metric	None
Inflation	
Use Automatic Inflation	None
Inflation Option	Smooth Transition
Transition Ratio	0.272
Maximum Layers	2
Growth Rate	1.2
Inflation Algorithm	Pre
View Advanced Options	No
Advanced	
Number of CPUs for Parallel Part Meshing	Program Controlled
Straight Sided Elements	No
Rigid Body Behavior	Dimensionally Reduced
Triangle Surface Mesher	Program Controlled
Topology Checking	Yes
Use Sheet Thickness for Pinch	No
Pinch Tolerance	Default (5.85e-006 m)
Generate Pinch on Refresh	No
Sheet Loop Removal	No

Statistics	
Nodes	205304
Elements	216661

Static Structural (B5)

TABLE 6
Model (B4) > Analysis

Object Name	*Static Structural (B5)*
State	Solved
Definition	
Physics Type	Structural
Analysis Type	Static Structural
Solver Target	Mechanical APDL
Options	
Environment Temperature	22. °C
Generate Input Only	No

TABLE 7
Model (B4) > Static Structural (B5) > Analysis Settings

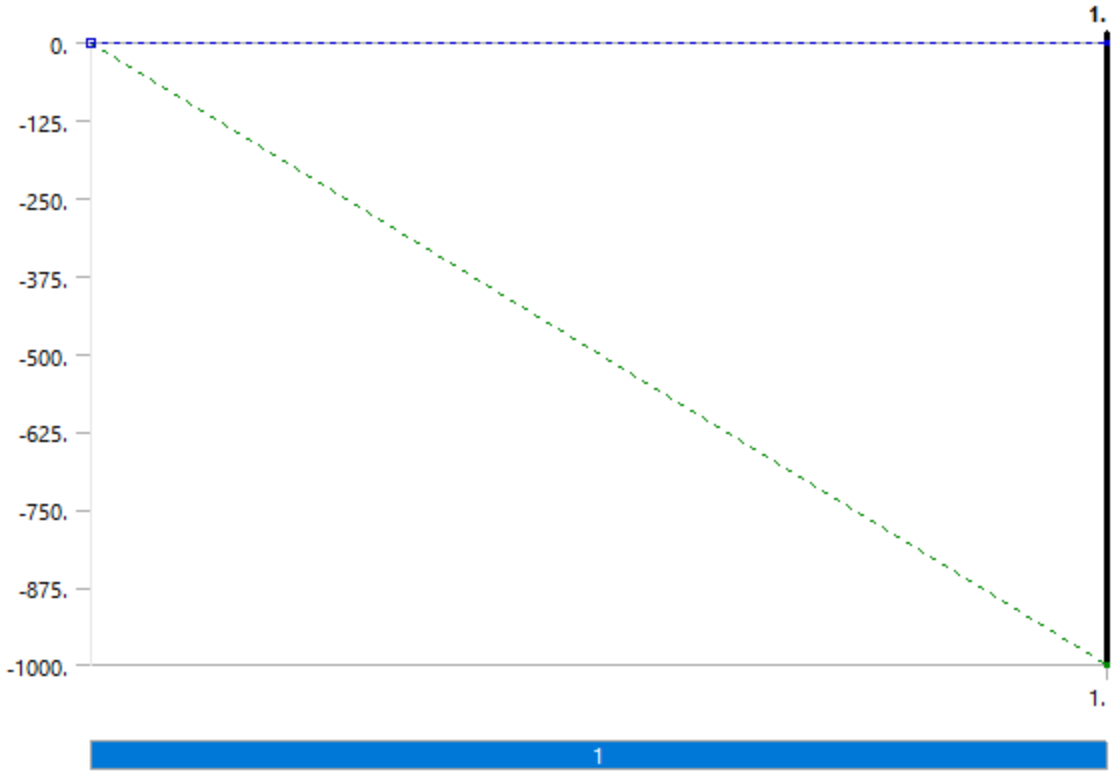
Object Name	*Analysis Settings*
State	Fully Defined
Step Controls	
Number Of Steps	1.
Current Step Number	1.
Step End Time	1. s
Auto Time Stepping	Program Controlled
Solver Controls	
Solver Type	Program Controlled
Weak Springs	Off
Solver Pivot Checking	Program Controlled
Large Deflection	Off
Inertia Relief	Off
Rotordynamics Controls	
Coriolis Effect	Off
Restart Controls	
Generate Restart Points	Program Controlled
Retain Files After Full Solve	No
Combine Restart Files	Program Controlled
Nonlinear Controls	
Newton-Raphson Option	Program Controlled
Force Convergence	Program Controlled
Moment Convergence	Program Controlled
Displacement Convergence	Program Controlled
Rotation Convergence	Program Controlled

Line Search	Program Controlled
Stabilization	Off
Output Controls	
Stress	Yes
Strain	Yes
Nodal Forces	No
Contact Miscellaneous	No
General Miscellaneous	No
Store Results At	All Time Points
Analysis Data Management	
Solver Files Directory	C:\Users\fraja\Desktop\Models\Schwarz D\ANSYS\Schwarz D Zeolite\1000N_files\dp0\SYS\MECH\
Future Analysis	None
Scratch Solver Files Directory	
Save MAPDL db	No
Contact Summary	Program Controlled
Delete Unneeded Files	Yes
Nonlinear Solution	No
Solver Units	Active System
Solver Unit System	mks

TABLE 8
Model (B4) > Static Structural (B5) > Loads

Object Name	*Fixed Support*	*Force*
State	Fully Defined	
Scope		
Scoping Method	Geometry Selection	
Geometry	775 Faces	305 Faces
Definition		
Type	Fixed Support	Force
Suppressed	No	
Define By		Components
Coordinate System		Global Coordinate System
X Component		0. N (ramped)
Y Component		-1000. N (ramped)
Z Component		0. N (ramped)

FIGURE 1
Model (B4) > Static Structural (B5) > Force



Solution (B6)

TABLE 9
Model (B4) > Static Structural (B5) > Solution

Object Name	*Solution (B6)*
State	Solve Failed
Adaptive Mesh Refinement	
Max Refinement Loops	3.
Refinement Depth	2.
Information	
Status	Adaptive Refinement Required
MAPDL Elapsed Time	3. s
MAPDL Memory Used	
MAPDL Result File Size	
Post Processing	
Beam Section Results	No
On Demand Stress/Strain	No

TABLE 10
Model (B4) > Static Structural (B5) > Solution (B6) > Solution Information

Object Name	*Solution Information*
State	Solved
Solution Information	
Solution Output	Solver Output
Newton-Raphson Residuals	0

Identify Element Violations	0
Update Interval	2.5 s
Display Points	All
FE Connection Visibility	
Activate Visibility	Yes
Display	All FE Connectors
Draw Connections Attached To	All Nodes
Line Color	Connection Type
Visible on Results	No
Line Thickness	Single
Display Type	Lines

TABLE 11
Model (B4) > Static Structural (B5) > Solution (B6) > Results

Object Name	*Total Deformation*	*Equivalent Elastic Strain*	*Equivalent Stress*
State	Solved		
Scope			
Scoping Method	Geometry Selection		
Geometry	All Bodies		
Position		Top/Bottom	
Definition			
Type	Total Deformation	Equivalent Elastic Strain	Equivalent (von-Mises) Stress
By	Time		
Display Time	Last		
Calculate Time History	Yes		
Identifier			
Suppressed	No		
Results			
Minimum	0. m	0. m/m	0. Pa
Maximum	5.194e-003 m	0.17862 m/m	4.4622e+008 Pa
Average	8.6528e-004 m	1.1923e-002 m/m	2.6396e+007 Pa
Minimum Occurs On	Part 1		
Maximum Occurs On	Part 1		
Information			
Time	1. s		
Load Step	1		
Substep	1		
Iteration Number	1		
Integration Point Results			
Display Option		Averaged	
Average Across Bodies		No	

FIGURE 2
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation

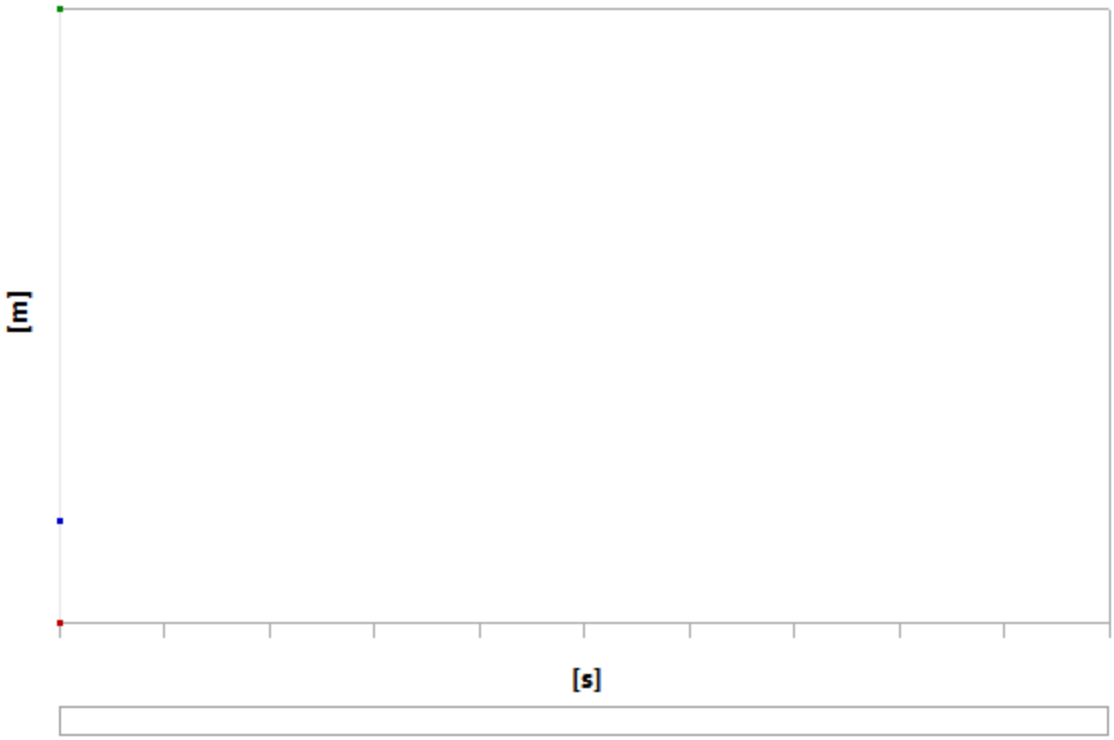


TABLE 12
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation

Time [s]	Minimum [m]	Maximum [m]	Average [m]
1.	0.	5.194e-003	8.6528e-004

FIGURE 3
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation > Deformation

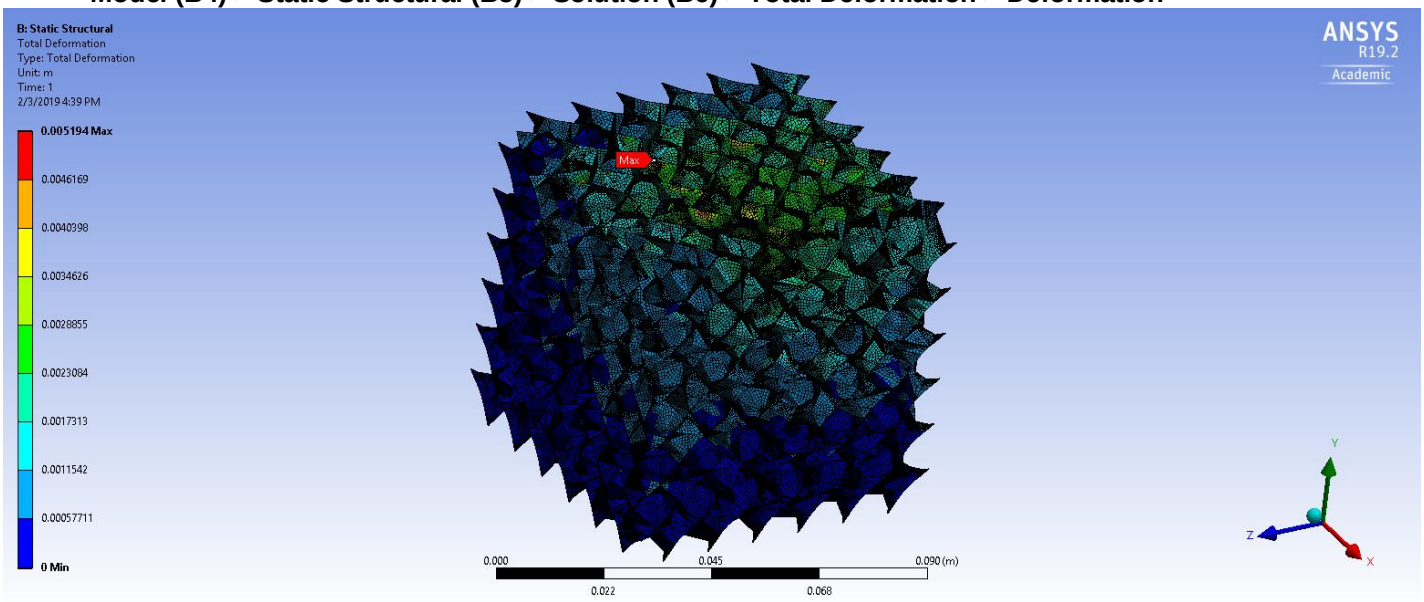


FIGURE 4
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Elastic Strain

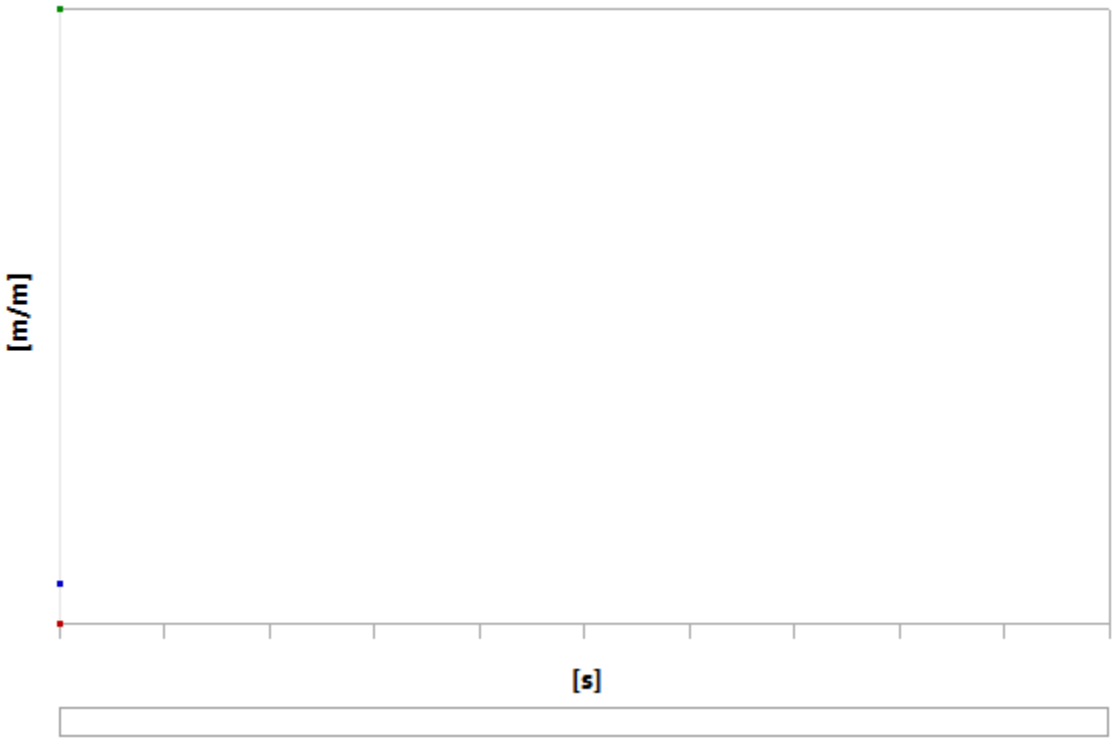


TABLE 13
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Elastic Strain

Time [s]	Minimum [m/m]	Maximum [m/m]	Average [m/m]
1.	0.	0.17862	1.1923e-002

FIGURE 5
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress

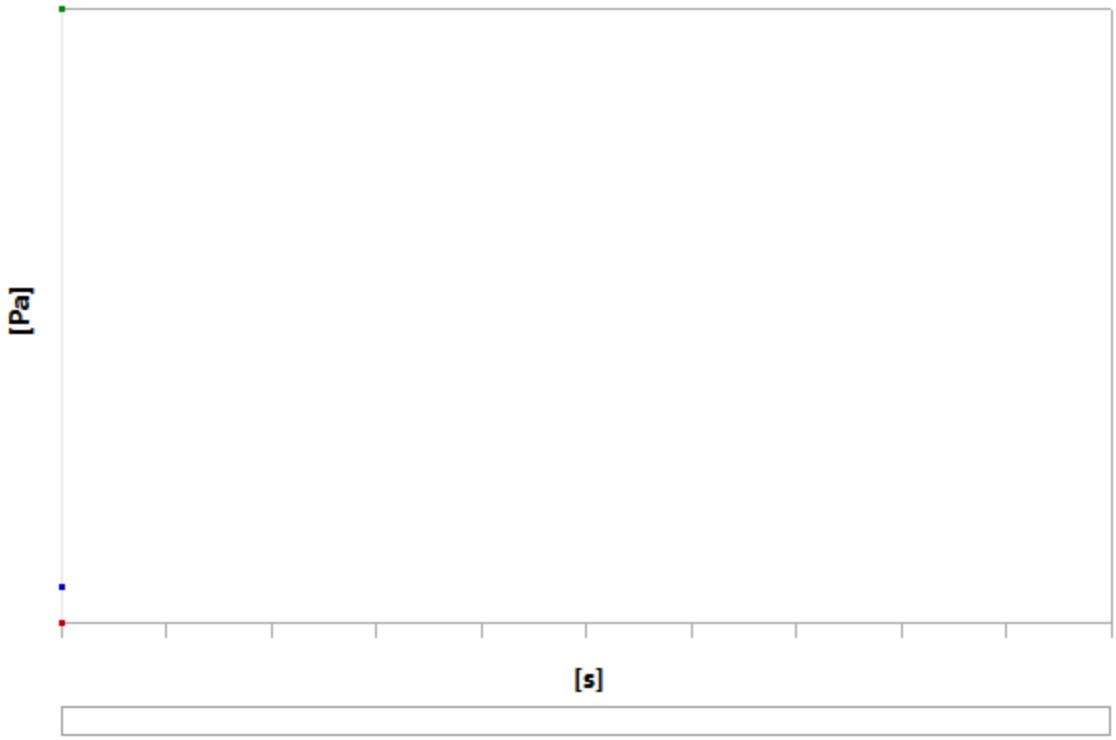


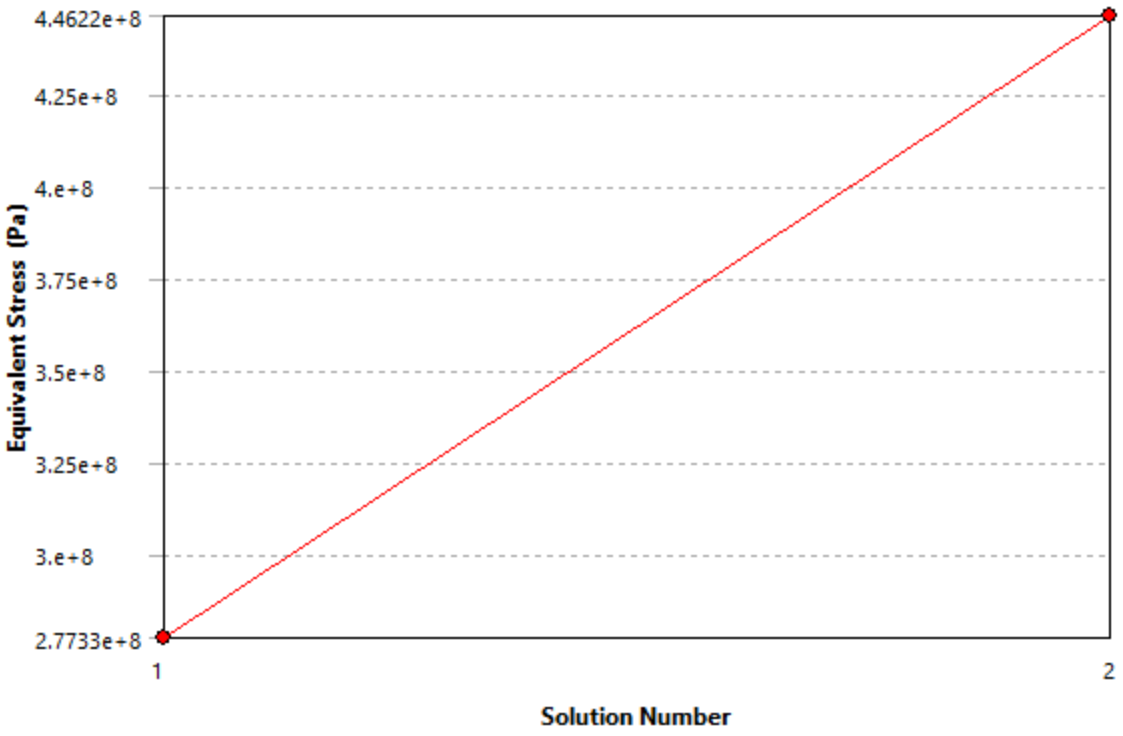
TABLE 14
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress

Time [s]	Minimum [Pa]	Maximum [Pa]	Average [Pa]
1.	0.	4.4622e+008	2.6396e+007

TABLE 15
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress > Convergences

Object Name	*Convergence*
State	Error
Definition	
Type	Maximum
Allowable Change	5. %
Results	
Last Change	46.685 %
Converged	No

FIGURE 6
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress > Convergence



Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress > Convergence

	Equivalent Stress (Pa)	Change (%)	Nodes	Elements
1	2.7733e+008		205304	216661
2	4.4622e+008	46.685	232995	244679

FIGURE 7
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress > Stress

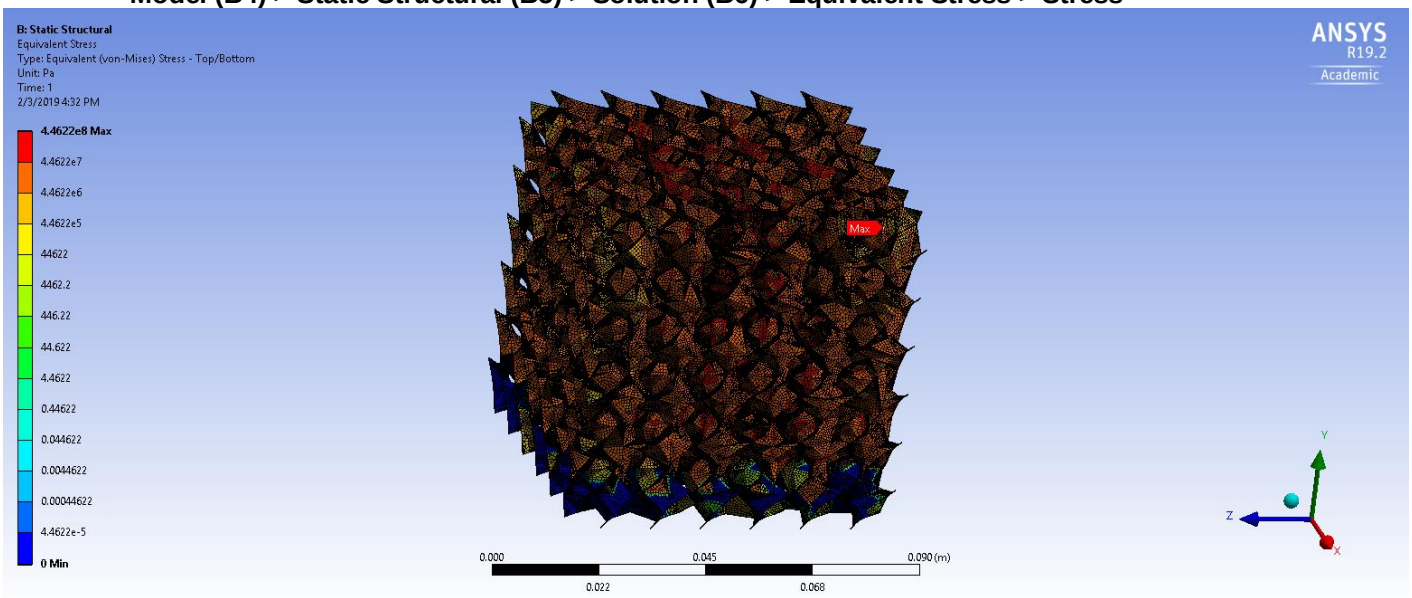
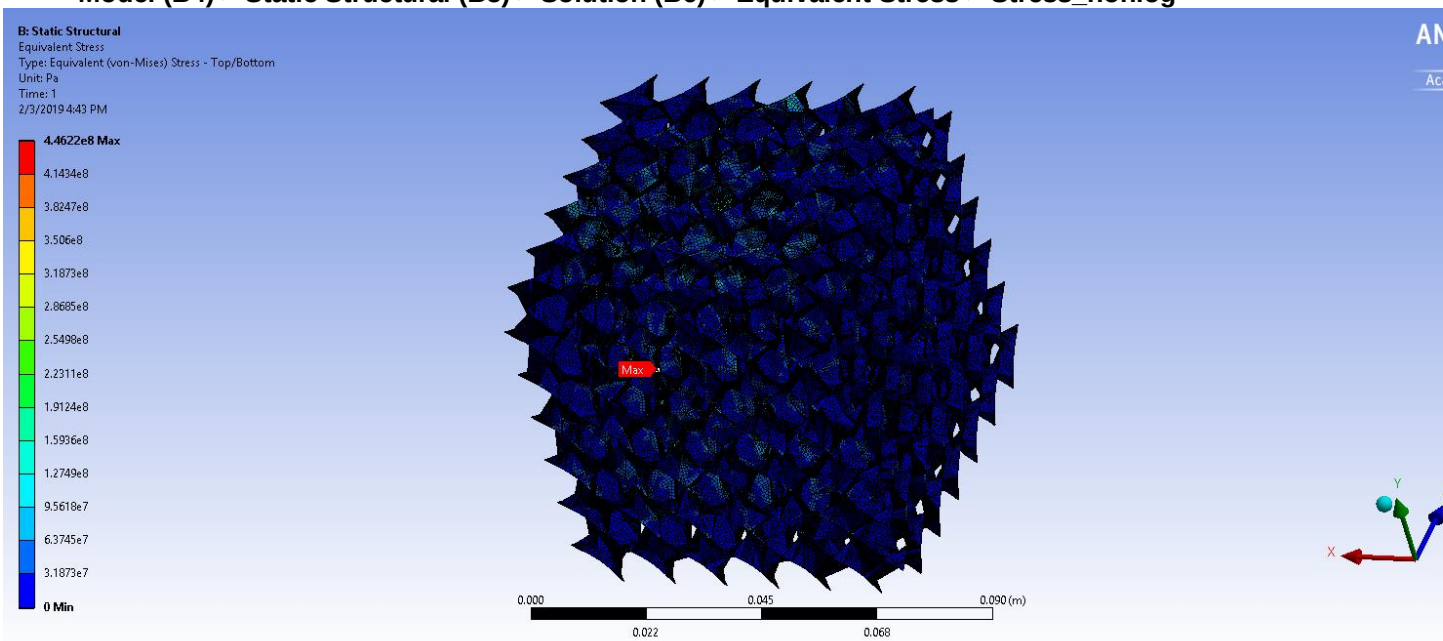


FIGURE 8
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress > Stress_nonlog



Material Data

Zeolite Composite

TABLE 16
Zeolite Composite > Color

Red	Green	Blue
182	229	228

TABLE 17
Zeolite Composite > Tensile Yield Strength

Tensile Yield Strength Pa
5.e+007

TABLE 18
Zeolite Composite > Isotropic Elasticity

Young's Modulus Pa	Poisson's Ratio	Bulk Modulus Pa	Shear Modulus Pa	Temperature C
2.5e+009	0.35	2.7778e+009	9.2593e+008	