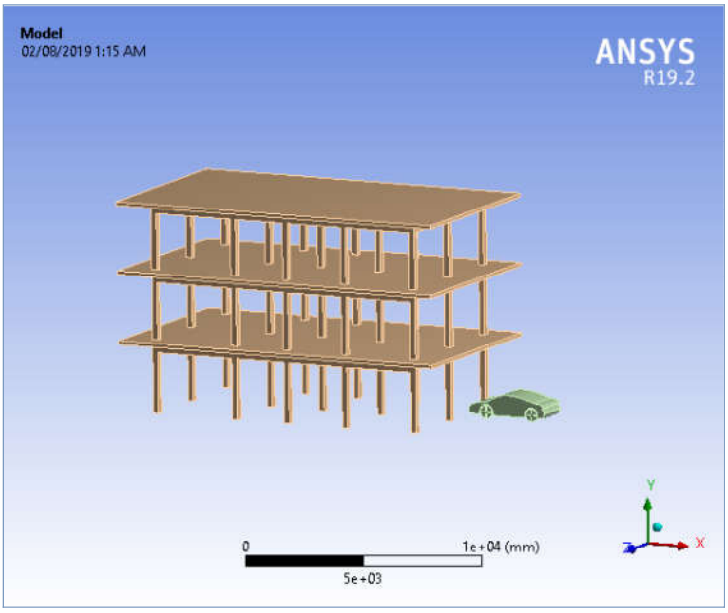
Project

First Saved	Saturday, July 27, 2019
Last Saved	Saturday, July 27, 2019
Product Version	19.2 Release
Save Project Before Solution	No
Save Project After Solution	No



Contents

Units

TABLE 1

Unit System	Metric (mm, kg, N, s, mV, mA) 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\PC1\Desktop\GARAGE EXPLICIT SIMU\IGES\STRUCTURE+ CAR.STEP
Type	Step
Length Unit	Millimeters
Display Style	Body Color
Bounding Box	
Length X	18408 mm
Length Y	9150. mm
Length Z	8450. mm
Properties	
Volume	7.6937e+010 mm³
Mass	1.787e+005 kg
Scale Factor Value	1.
Statistics	
Bodies	4
Active Bodies	4
Nodes	34015
Elements	120232
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	Yes
Decompose Disjoint Geometry	Yes
Enclosure and Symmetry Processing	Yes

TABLE 3
Model (B4) > Geometry > Parts

Object Name	*CAR_Default<As Machined>*	*CAR_Default<As Machined>[2]*	*CAR_Default<As Machined>[3]*	*MODEL_Default<As Machined>*
State	Meshed			
Graphics Properties				
Visible	Yes			
Transparency	1			
Definition				
Suppressed	No			
Stiffness Behavior	Flexible			
Coordinate System	Default Coordinate System			
Reference Temperature	By Environment			
Reference Frame	Lagrangian			
Material				
Assignment	Aluminum Alloy			Concrete
Bounding Box				
Length X	552.04 mm		3588.8 mm	14850 mm
Length Y	552.04 mm		1253.3 mm	9150. mm
Length Z	200. mm		1500. mm	8450. mm
Properties				
Volume	4.3318e+007 mm³		3.6275e+009 mm³	7.3223e+010 mm³
Mass	119.99 kg		10048 kg	1.6841e+005 kg
Centroid X	-310.36 mm	-2443. mm	-1397.4 mm	-10642 mm
Centroid Y	-2144.9 mm	-2137. mm	-1889.5 mm	3308.7 mm
Centroid Z	3462.1 mm		4127.5 mm	4211.5 mm
Moment of Inertia Ip1	2.7482e+006 kg·mm²		2.3548e+009 kg·mm²	2.128e+012 kg·mm²
Moment of Inertia Ip2	2.7482e+006 kg·mm²		1.0097e+010 kg·mm²	4.0212e+012 kg·mm²
Moment of Inertia Ip3	4.6964e+006 kg·mm²		8.8341e+009 kg·mm²	4.1036e+012 kg·mm²
Statistics				
Nodes	4707	4059	17038	8211
Elements	3584	3000	90691	22957
Mesh Metric	None			

Coordinate Systems

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

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

Connections

TABLE 5
Model (B4) > Connections

Object Name	*Connections*
State	Fully Defined
Auto Detection	
Generate Automatic Connection On Refresh	Yes
Transparency	
Enabled	Yes

TABLE 6
Model (B4) > Connections > Contacts

Object Name	*Contacts*
State	Fully Defined
Definition	
Connection Type	Contact
Scope	
Scoping Method	Geometry Selection
Geometry	All Bodies
Auto Detection	
Tolerance Type	Slider
Tolerance Slider	0.
Tolerance Value	55.565 mm
Use Range	No
Face/Face	Yes
Face Overlap Tolerance	Off
Cylindrical Faces	Include
Face/Edge	No
Edge/Edge	No
Priority	Include All
Group By	Bodies

Search Across	Bodies
Statistics	
Connections	2
Active Connections	2

TABLE 7
Model (B4) > Connections > Contacts > Contact Regions

Object Name	*Contact Region*	*Contact Region 2*
State	Fully Defined	
Scope		
Scoping Method	Geometry Selection	
Contact	5 Faces	
Target	4 Faces	
Contact Bodies	CAR_Default<As Machined>	CAR_Default<As Machined>[2]
Target Bodies	CAR_Default<As Machined>[3]	
Protected	No	
Definition		
Type	Bonded	
Scope Mode	Automatic	
Behavior	Program Controlled	
Trim Contact	Program Controlled	
Trim Tolerance	55.565 mm	
Maximum Offset	1.e-004 mm	
Breakable	No	
Suppressed	No	

TABLE 8
Model (B4) > Connections > Body Interactions

Object Name	*Body Interactions*
State	Fully Defined
Advanced	
Contact Detection	Trajectory
Formulation	Penalty
Sliding Contact	Discrete Surface
Body Self Contact	Program Controlled
Element Self Contact	Program Controlled
Tolerance	0.2

TABLE 9
Model (B4) > Connections > Body Interactions > Body Interaction

Object Name	*Body Interaction*
State	Fully Defined
Scope	
Scoping Method	Geometry Selection
Geometry	All Bodies
Definition	
Type	Frictionless
Suppressed	No

Mesh

TABLE 10
Model (B4) > Mesh

Object Name	*Mesh*
State	Solved
Display	
Display Style	Use Geometry Setting
Defaults	
Physics Preference	Explicit
Element Order	Linear
Element Size	Default
Sizing	
Use Adaptive Sizing	Yes
Resolution	Default (4)
Mesh Defeaturing	Yes
Defeature Size	Default
Transition	Slow
Span Angle Center	Coarse
Initial Size Seed	Assembly
Bounding Box Diagonal	22226 mm
Average Surface Area	2.6077e+006 mm²
Minimum Edge Length	19.667 mm
Quality	
Check Mesh Quality	Yes, Errors
Target Quality	Default (0.050000)
Smoothing	High
Mesh Metric	None
Inflation	
Use Automatic Inflation	None
Inflation Option	Smooth Transition
Transition Ratio	0.272
Maximum Layers	5
Growth Rate	1.2
Inflation Algorithm	Pre
View Advanced Options	No
Advanced	
Number of CPUs for Parallel Part Meshing	Program Controlled
Straight Sided Elements	

Number of Retries	Default (4)
Rigid Body Behavior	Full Mesh
Triangle Surface Mesher	Program Controlled
Topology Checking	Yes
Pinch Tolerance	Please Define
Generate Pinch on Refresh	No
Statistics	
Nodes	34015
Elements	120232

Explicit Dynamics (B5)

TABLE 11
Model (B4) > Analysis

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

TABLE 12
Model (B4) > Explicit Dynamics (B5) > Initial Conditions

Object Name	*Initial Conditions*
State	Fully Defined

TABLE 13
Model (B4) > Explicit Dynamics (B5) > Initial Conditions > Initial Condition

Object Name	*Pre-Stress (None)*
State	Fully Defined
Definition	
Pre-Stress Environment	None Available
Pressure Initialization	From Deformed State

TABLE 14
Model (B4) > Explicit Dynamics (B5) > Analysis Settings

Object Name	*Analysis Settings*
State	Fully Defined
Analysis Settings Preference	
Type	Program Controlled
Step Controls	
Number Of Steps	1
Current Step Number	1
End Time	5.e-005
Resume From Cycle	0
Maximum Number of Cycles	1e+07
Maximum Energy Error	0.1
Reference Energy Cycle	0
Initial Time Step	Program Controlled
Minimum Time Step	Program Controlled
Maximum Time Step	Program Controlled
Time Step Safety Factor	0.9
Characteristic Dimension	Diagonals
Automatic Mass Scaling	No
Solver Controls	
Solve Units	mm, mg, ms
Beam Solution Type	Bending
Beam Time Step Safety Factor	0.5
Hex Integration Type	Exact
Shell Sublayers	3
Shell Shear Correction Factor	0.8333
Shell BWC Warp Correction	Yes
Shell Thickness Update	Nodal
Tet Integration	Average Nodal Pressure
Shell Inertia Update	Recompute
Density Update	Program Controlled
Minimum Velocity	1.e-003 mm s^-1
Maximum Velocity	1.e+013 mm s^-1
Radius Cutoff	1.e-003
Minimum Strain Rate Cutoff	1.e-010
Euler Domain Controls	
Domain Size Definition	Program Controlled
Display Euler Domain	Yes
Scope	All Bodies
X Scale factor	1.2
Y Scale factor	1.2
Z Scale factor	1.2
Domain Resolution Definition	Total Cells
Total Cells	2.5e+05
Lower X Face	Flow Out
Lower Y Face	Flow Out
Lower Z Face	Flow Out
Upper X Face	Flow Out
Upper Y Face	Flow Out

Upper Z Face	Flow Out
Euler Tracking	By Body
Damping Controls	
Linear Artificial Viscosity	0.2
Quadratic Artificial Viscosity	1.
Linear Viscosity in Expansion	No
Artificial Viscosity For Shells	Yes
Hourglass Damping	AUTODYN Standard
Viscous Coefficient	0.1
Static Damping	0.
Erosion Controls	
On Geometric Strain Limit	Yes
Geometric Strain Limit	1.5
On Material Failure	No
On Minimum Element Time Step	No
Retain Inertia of Eroded Material	Yes
Output Controls	
Save Results on	Equally Spaced Points
Result Number Of Points	20
Save Restart Files on	Equally Spaced Points
Restart Number Of Points	5
Save Result Tracker Data on	Cycles
Tracker Cycles	1
Output Contact Forces	Off
Analysis Data Management	
Solver Files Directory	C:\AJUWON\project work\OTHERS\mayowa\GARAGE EXPLICIT SIMU\ANSYS\ANSYS MODEL_files\dp0\SYS-1\MECH\
Scratch Solver Files Directory	

TABLE 15
Model (B4) > Explicit Dynamics (B5) > Loads

Object Name	*Fixed Support*	*Velocity*	*Displacement*
State	Fully Defined		
Scope			
Scoping Method	Geometry Selection		
Geometry	15 Faces	1 Body	2 Edges
Definition			
Type	Fixed Support	Velocity	Displacement
Suppressed	No		
Define By		Components	
Coordinate System		Global Coordinate System	
X Component		Tabular Data	Free
Y Component		Tabular Data	0. mm (step applied)
Z Component		Tabular Data	0. mm (step applied)

FIGURE 1
Model (B4) > Explicit Dynamics (B5) > Velocity

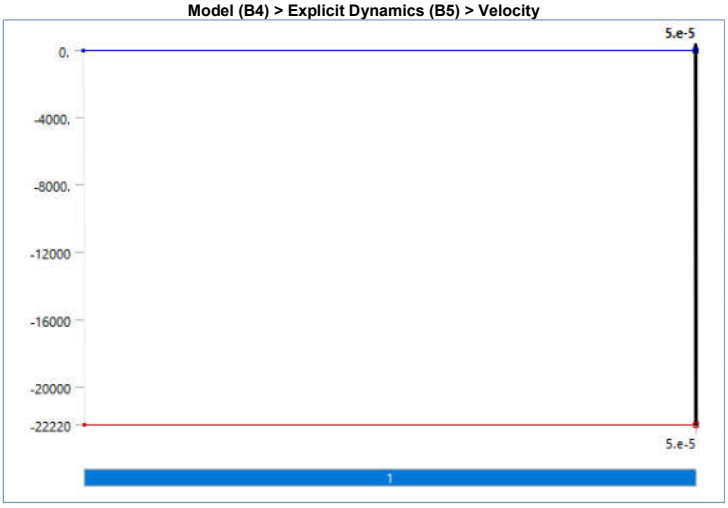
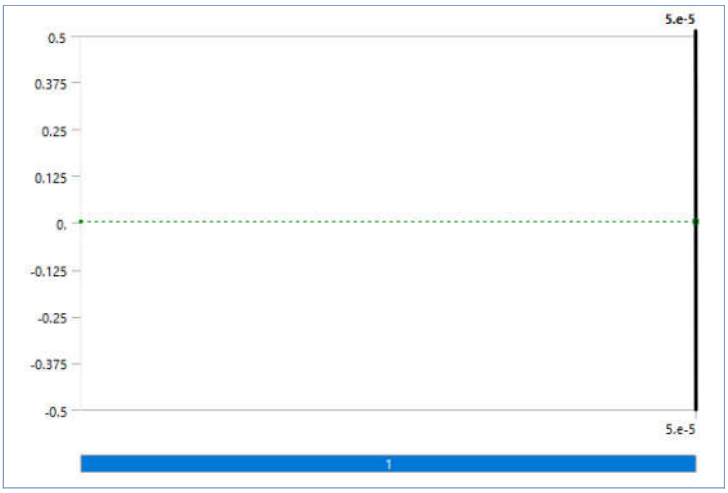


TABLE 16
Model (B4) > Explicit Dynamics (B5) > Velocity

Steps	Time [s]	X [mm/s]	Y [mm/s]	Z [mm/s]
1	0.	-22220	0.	0.
	5.e-005	= -22220	= 0.	= 0.
N/A	0.5	-22220	0.	0.
	1.			

FIGURE 2
Model (B4) > Explicit Dynamics (B5) > Displacement



Solution (B6)

TABLE 17
Model (B4) > Explicit Dynamics (B5) > Solution

Object Name	*Solution (B6)*
State	Solved
Information	
Status	Done
Post Processing	
Beam Section Results	No

TABLE 18
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Solution Information

Object Name	*Solution Information*
State	Solved
Solution Information	
Solution Output	Solver Output
Update Interval	2.5 s
Display Points	All
Display Filter During Solve	Yes

TABLE 19
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Results

Object Name	*Total Deformation*	*Directional Deformation*	*Total Velocity*	*Directional Deformation 2*	*Directional Deformation 3*	*Total Acceleration*	*Directional Acceleration*	*Equivalent Elastic Strain*	*Maximum Principal Elastic Strain*	*Middle Principal Elastic Strain*
State	Solved									
Scope										
Scoping Method	Geometry Selection									
Geometry	All Bodies									
Definition										
Type	Total Deformation	Directional Deformation	Total Velocity	Directional Deformation		Total Acceleration	Directional Acceleration	Equivalent Elastic Strain	Maximum Principal Elastic Strain	Middle Principal Elastic Strain
By	Time									
Display Time	Last									
Calculate Time History	Yes									
Identifier										
Suppressed	No									
Orientation		X Axis		Y Axis	Z Axis		X Axis			
Coordinate System		Global Coordinate System		Global Coordinate System			Global Coordinate System			
Results										
Minimum	0. mm	-1.1198 mm	0. mm/s	-0.28315 mm	-0.12981 mm	0. mm/s²	-3.9209e+008 mm/s²	0. mm/mm		-1.8416e-003 mm/mm
Maximum	1.1198 mm	7.173e-002 mm	22220 mm/s	0.19163 mm	0.12891 mm	4.2209e+008 mm/s²	1.8822e+008 mm/s²	1.3326e-002 mm/mm	1.1499e-002 mm/mm	1.3563e-003 mm/mm
Average	0.57719 mm	-0.57435 mm	11897 mm/s	-1.0298e-003 mm	4.0694e-005 mm	2.8953e+007 mm/s²	-1.8506e+007 mm/s²	2.3743e-004 mm/mm	1.4043e-004 mm/mm	2.7122e-006 mm/mm
Minimum Occurs On	MODEL_Default<As Machined>	CAR_Default<As Machined>[3]	MODEL_Default<As Machined>	CAR_Default<As Machined>[2]	CAR_Default<As Machined>	CAR_Default<As Machined>[3]	CAR_Default<As Machined>[2]	CAR_Default<As Machined>[3]		CAR_Default<As Machined>
Maximum Occurs On	CAR_Default<As Machined>[3]	CAR_Default<As Machined>	CAR_Default<As Machined>[3]	CAR_Default<As Machined>		CAR_Default<As Machined>[2]			CAR_Default<As M	
Minimum Value Over Time										
Minimum	0. mm	-1.1198 mm	0. mm/s	-0.28315 mm	-0.12981 mm	0. mm/s²	-6.631e+009 mm/s²	0. mm/mm	-1.2583e-006 mm/mm	-1.8416e-003 mm/mm

Maximum	0. mm		0. mm/s	0. mm		0. mm/s²		0. mm/mm		
Maximum Value Over Time										
Minimum	0. mm		22220 mm/s	0. mm		0. mm/s²		0. mm/mm		
Maximum	1.1198 mm	7.2146e-002 mm	24786 mm/s	0.19163 mm	0.12891 mm	6.7285e+009 mm/s²	6.2889e+009 mm/s²	1.3326e-002 mm/mm	1.1499e-002 mm/mm	1.3563e-003 mm/mm
Information										
Time	5.0394e-005 s									
Set	21									
Cycle Number	112									
Integration Point Results										
Display Option								Averaged		
Average Across Bodies								No		

FIGURE 3
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Deformation

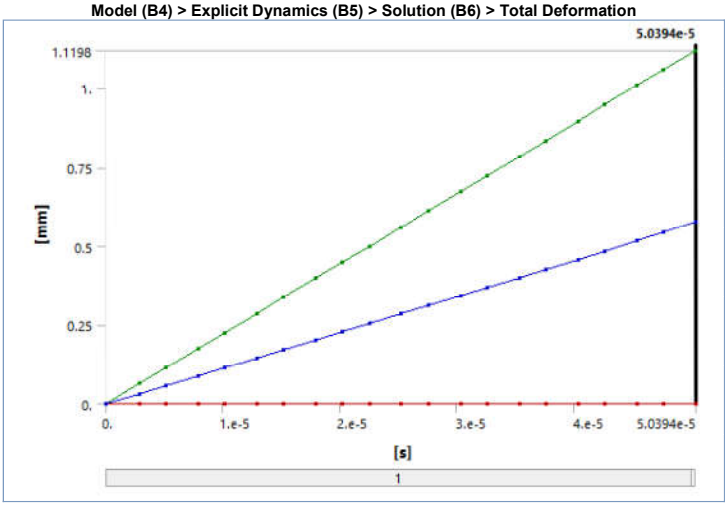


TABLE 20
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Deformation

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1.1755e-038			
2.843e-006	0.	6.3171e-002	3.1724e-002
5.1291e-006		0.11397	5.731e-002
7.8725e-006		0.17493	8.811e-002
1.0159e-005		0.22572	0.11382
1.2902e-005		0.28668	0.14472
1.5188e-005		0.33748	0.17051
1.7931e-005		0.39844	0.20154
2.0218e-005		0.44923	0.22746
2.2504e-005		0.50003	0.25344
2.5247e-005		0.56099	0.2847
2.7533e-005		0.61179	0.31084
3.0276e-005		0.67274	0.3423
3.2563e-005		0.72354	0.36861
3.5306e-005		0.7845	0.4003
3.7592e-005		0.83529	0.42681
4.0335e-005		0.89625	0.45875
4.2621e-005		0.94705	0.48549
4.5365e-005		1.008	0.51771
4.7651e-005		1.0588	0.54468
5.0394e-005		1.1198	0.57719

FIGURE 4
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation

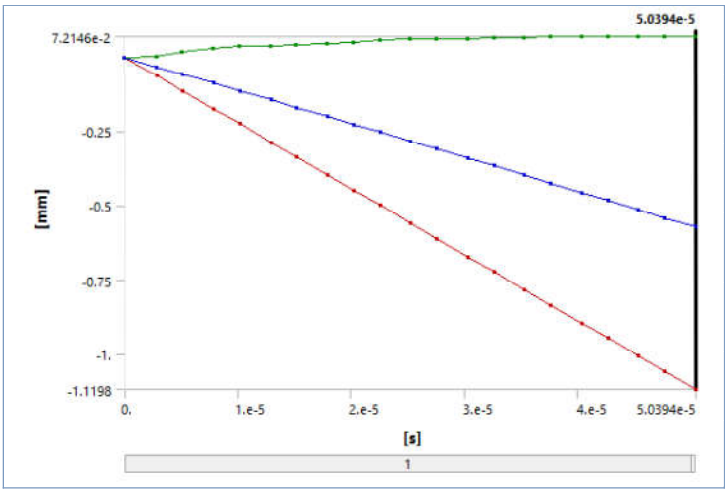


TABLE 21
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1.1755e-038			
2.843e-006	-6.3171e-002	3.745e-003	-3.1715e-002
5.1291e-006	-0.11397	1.8309e-002	-5.7258e-002
7.8725e-006	-0.17493	3.3222e-002	-8.799e-002
1.0159e-005	-0.22572	3.7782e-002	-0.11365
1.2902e-005	-0.28668	4.1145e-002	-0.14449
1.5188e-005	-0.33748	4.3349e-002	-0.17023
1.7931e-005	-0.39844	4.6822e-002	-0.20119
2.0218e-005	-0.44923	5.3862e-002	-0.22704
2.2504e-005	-0.50003	5.9276e-002	-0.25295
2.5247e-005	-0.56099	6.2098e-002	-0.2841
2.7533e-005	-0.61179	6.3077e-002	-0.31012
3.0276e-005	-0.67274	6.5224e-002	-0.34143
3.2563e-005	-0.72354	6.7707e-002	-0.36759
3.5306e-005	-0.7845	6.9872e-002	-0.39907
3.7592e-005	-0.83529	7.0527e-002	-0.42539
4.0335e-005	-0.89625	7.0739e-002	-0.45708
4.2621e-005	-0.94705	7.1146e-002	-0.48358
4.5365e-005	-1.008	7.193e-002	-0.51549
4.7651e-005	-1.0588	7.2146e-002	-0.54219
5.0394e-005	-1.1198	7.173e-002	-0.57435

FIGURE 5
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Velocity

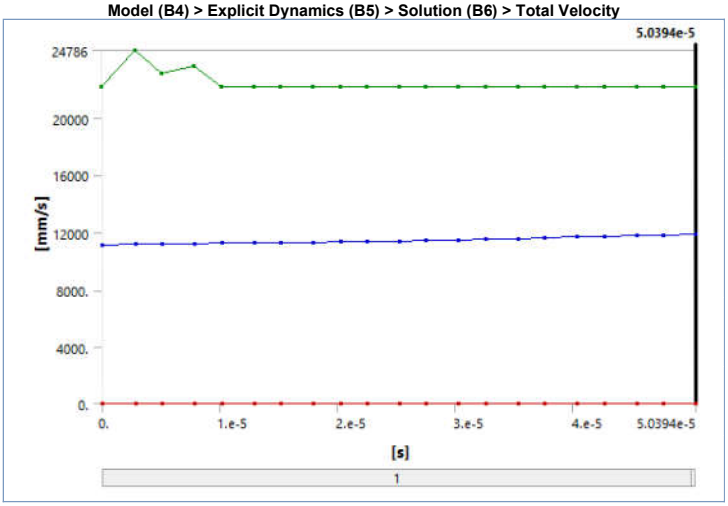


TABLE 22
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Velocity

Time [s]	Minimum [mm/s]	Maximum [mm/s]	Average [mm/s]
1.1755e-038		22220	11130
2.843e-006		24786	11173
5.1291e-006		23177	11207
7.8725e-006		23708	11241
1.0159e-005			11257
1.2902e-005			11278
1.5188e-005			11299
1.7931e-005			11332
2.0218e-005			11357

2.2504e-005	0.	22220	11384
2.5247e-005			11420
2.7533e-005			11454
3.0276e-005			11497
3.2563e-005			11533
3.5306e-005			11581
3.7592e-005			11624
4.0335e-005			11680
4.2621e-005			11728
4.5365e-005			11787
4.7651e-005			11836
5.0394e-005			11897

FIGURE 6
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation 2

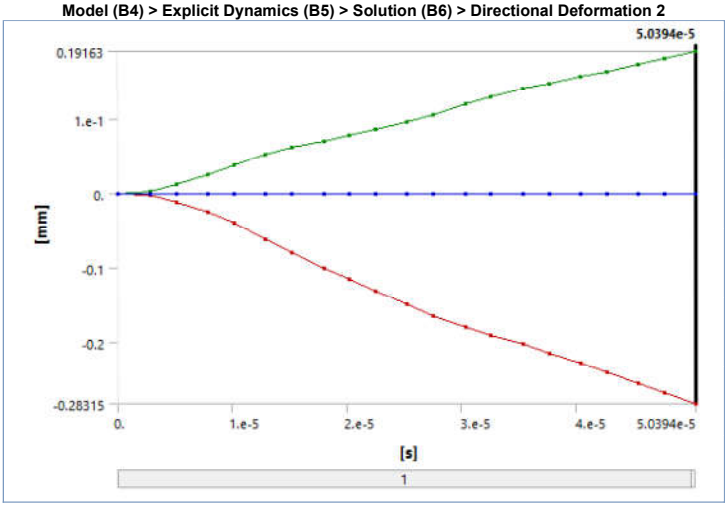


TABLE 23
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation 2

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1.1755e-038			
2.843e-006	-2.5359e-003	2.6586e-003	-8.5325e-007
5.1291e-006	-1.2224e-002	1.2236e-002	-4.2998e-006
7.8725e-006	-2.5453e-002	2.496e-002	-9.4899e-006
1.0159e-005	-3.9652e-002	3.8177e-002	-1.5509e-005
1.2902e-005	-6.1532e-002	5.2661e-002	-2.8659e-005
1.5188e-005	-8.039e-002	6.1724e-002	-4.5289e-005
1.7931e-005	-0.10077	7.0869e-002	-7.1183e-005
2.0218e-005	-0.11583	7.885e-002	-9.5074e-005
2.2504e-005	-0.13086	8.6913e-002	-1.2196e-004
2.5247e-005	-0.14962	9.6879e-002	-1.6329e-004
2.7533e-005	-0.16447	0.10676	-2.0528e-004
3.0276e-005	-0.17958	0.12027	-2.6268e-004
3.2563e-005	-0.19038	0.13074	-3.1785e-004
3.5306e-005	-0.20315	0.14084	-3.9653e-004
3.7592e-005	-0.21457	0.14813	-4.7332e-004
4.0335e-005	-0.229	0.1571	-5.7602e-004
4.2621e-005	-0.2412	0.16476	-6.6859e-004
4.5365e-005	-0.25592	0.17381	-7.8809e-004
4.7651e-005	-0.26828	0.18161	-8.9438e-004
5.0394e-005	-0.28315	0.19163	-1.0298e-003

FIGURE 7
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation 3

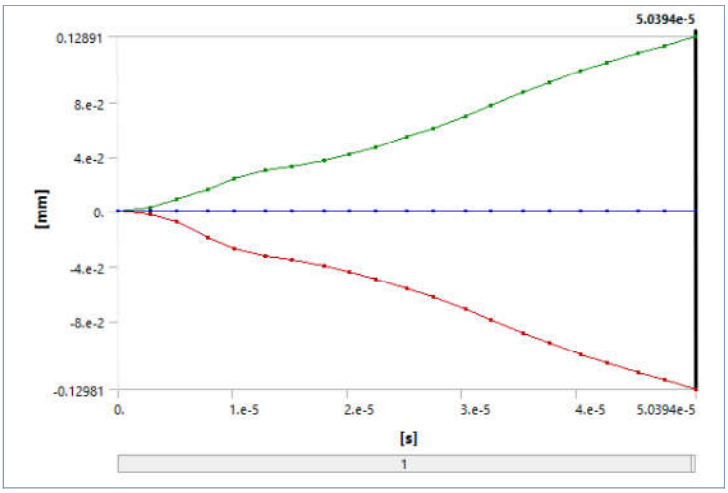


TABLE 24
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Deformation 3

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1.1755e-038			
2.843e-006	-2.3662e-003	2.8478e-003	4.5125e-008
5.1291e-006	-7.4575e-003	9.2085e-003	3.6211e-007
7.8725e-006	-1.8703e-002	1.6576e-002	1.2598e-006
1.0159e-005	-2.6724e-002	2.4507e-002	2.2899e-006
1.2902e-005	-3.1805e-002	3.0098e-002	3.4678e-006
1.5188e-005	-3.4351e-002	3.2855e-002	4.4517e-006
1.7931e-005	-3.8884e-002	3.7007e-002	5.802e-006
2.0218e-005	-4.3979e-002	4.1657e-002	7.1191e-006
2.2504e-005	-4.928e-002	4.734e-002	8.6694e-006
2.5247e-005	-5.5936e-002	5.472e-002	1.0806e-005
2.7533e-005	-6.2021e-002	6.1294e-002	1.2709e-005
3.0276e-005	-7.0917e-002	7.e-002	1.506e-005
3.2563e-005	-7.874e-002	7.7802e-002	1.713e-005
3.5306e-005	-8.8171e-002	8.7311e-002	1.9932e-005
3.7592e-005	-9.5686e-002	9.4882e-002	2.2541e-005
4.0335e-005	-0.104	0.10319	2.5877e-005
4.2621e-005	-0.11035	0.10948	2.8821e-005
4.5365e-005	-0.11746	0.11654	3.266e-005
4.7651e-005	-0.12315	0.12222	3.6165e-005
5.0394e-005	-0.12981	0.12891	4.0694e-005

FIGURE 8
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Acceleration

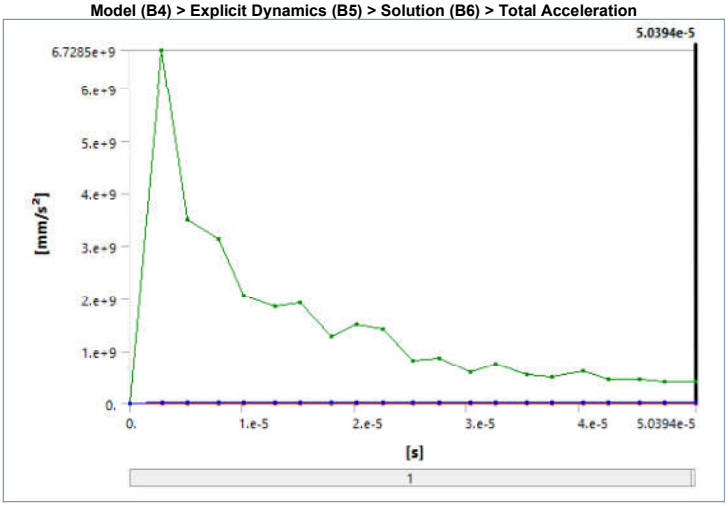


TABLE 25
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Total Acceleration

Time [s]	Minimum [mm/s²]	Maximum [mm/s²]	Average [mm/s²]
1.1755e-038			
2.843e-006		6.7285e+009	1.927e+007
5.1291e-006		3.4983e+009	1.774e+007
7.8725e-006		3.1338e+009	1.8625e+007
1.0159e-005		2.0602e+009	1.7544e+007
1.2902e-005		1.8646e+009	1.6262e+007
1.5188e-005		1.9306e+009	1.7953e+007
1.7931e-005		1.273e+009	1.8171e+007
2.0218e-005		1.5083e+009	1.9366e+007

2.2504e-005	0.	1.4185e+009	1.9952e+007
2.5247e-005		8.1705e+008	2.0499e+007
2.7533e-005		8.8081e+008	2.1105e+007
3.0276e-005		5.842e+008	2.1629e+007
3.2563e-005		7.4399e+008	2.3204e+007
3.5306e-005		5.4665e+008	2.4452e+007
3.7592e-005		4.9739e+008	2.5158e+007
4.0335e-005		6.2765e+008	2.6246e+007
4.2621e-005		4.5364e+008	2.7187e+007
4.5365e-005		4.5862e+008	2.8312e+007
4.7651e-005		4.1774e+008	2.8686e+007
5.0394e-005		4.2209e+008	2.8953e+007

FIGURE 9
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Acceleration

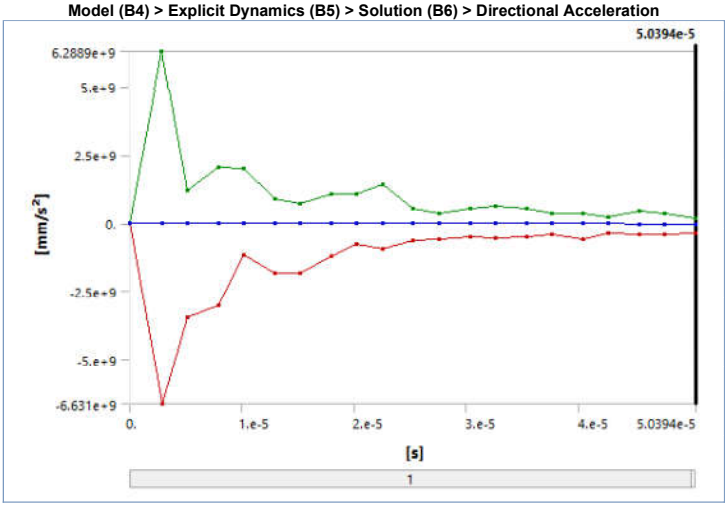


TABLE 26
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Directional Acceleration

Time [s]	Minimum [mm/s²]	Maximum [mm/s²]	Average [mm/s²]
1.1755e-038			
2.843e-006	-6.631e+009	6.2889e+009	-2.1747e+006
5.1291e-006	-3.4576e+009	1.1763e+009	-1.2245e+007
7.8725e-006	-3.0341e+009	2.0117e+009	-9.4206e+006
1.0159e-005	-1.1976e+009	1.9876e+009	-5.9226e+006
1.2902e-005	-1.8332e+009	8.9465e+008	-7.3843e+006
1.5188e-005	-1.8572e+009	6.8872e+008	-9.9439e+006
1.7931e-005	-1.2442e+009	1.0717e+009	-9.9541e+006
2.0218e-005	-8.0553e+008	1.0517e+009	-8.8377e+006
2.2504e-005	-9.63e+008	1.4061e+009	-9.5217e+006
2.5247e-005	-6.403e+008	5.4095e+008	-1.1238e+007
2.7533e-005	-6.3038e+008	3.6028e+008	-1.1813e+007
3.0276e-005	-5.0938e+008	5.3155e+008	-1.1942e+007
3.2563e-005	-5.6482e+008	6.3572e+008	-1.2596e+007
3.5306e-005	-5.3271e+008	5.2238e+008	-1.3929e+007
3.7592e-005	-4.5173e+008	3.7499e+008	-1.5105e+007
4.0335e-005	-6.1219e+008	3.6961e+008	-1.6346e+007
4.2621e-005	-3.9856e+008	2.3766e+008	-1.7034e+007
4.5365e-005	-4.467e+008	4.4421e+008	-1.7464e+007
4.7651e-005	-4.1734e+008	3.7372e+008	-1.7867e+007
5.0394e-005	-3.9209e+008	1.8822e+008	-1.8506e+007

FIGURE 10
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Equivalent Elastic Strain

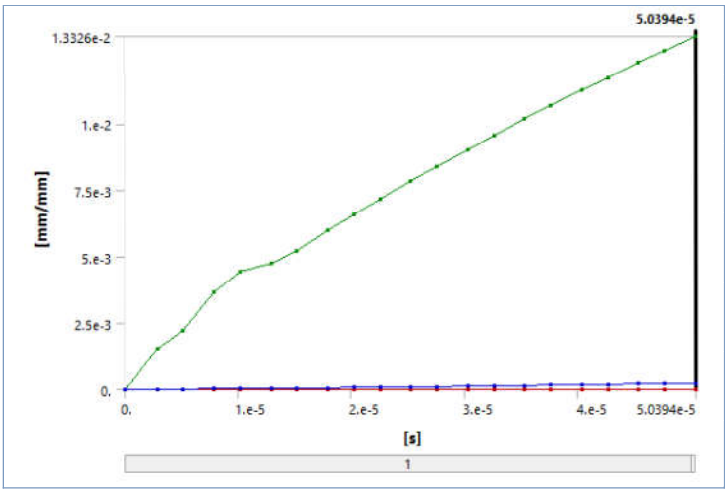


TABLE 27
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Equivalent Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	0.	1.5348e-003	5.5715e-006
5.1291e-006		2.1994e-003	1.3159e-005
7.8725e-006		3.652e-003	2.4442e-005
1.0159e-005		4.4237e-003	3.3498e-005
1.2902e-005		4.7726e-003	4.3481e-005
1.5188e-005		5.2288e-003	5.2095e-005
1.7931e-005		5.9802e-003	6.3478e-005
2.0218e-005		6.5914e-003	7.365e-005
2.2504e-005		7.1754e-003	8.411e-005
2.5247e-005		7.8387e-003	9.695e-005
2.7533e-005		8.3695e-003	1.0812e-004
3.0276e-005		9.0121e-003	1.2225e-004
3.2563e-005		9.5555e-003	1.3455e-004
3.5306e-005		1.0195e-002	1.4982e-004
3.7592e-005		1.0702e-002	1.6301e-004
4.0335e-005		1.1281e-002	1.7941e-004
4.2621e-005		1.1755e-002	1.932e-004
4.5365e-005		1.232e-002	2.0939e-004
4.7651e-005		1.2782e-002	2.2237e-004
5.0394e-005		1.3326e-002	2.3743e-004

FIGURE 11
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Principal Elastic Strain

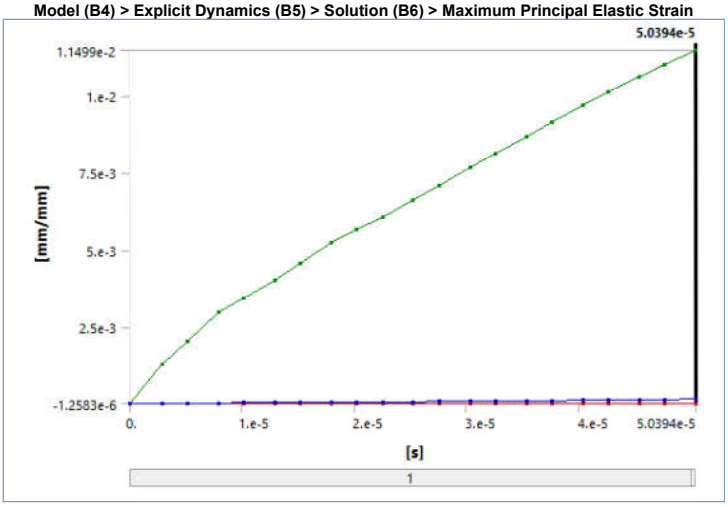


TABLE 28
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Principal Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	-3.9808e-008	1.2954e-003	3.4699e-006
5.1291e-006	-2.6903e-008	2.0274e-003	7.6191e-006
7.8725e-006	-2.4641e-011	2.9733e-003	1.3511e-005
1.0159e-005	-1.2583e-006	3.443e-003	1.8444e-005
1.2902e-005		4.0209e-003	2.4314e-005
1.5188e-005		4.5913e-003	2.9595e-005
1.7931e-005		5.2368e-003	3.6628e-005
2.0218e-005		5.6672e-003	4.2679e-005

2.2504e-005	0.	6.0629e-003	4.8694e-005
2.5247e-005		6.6101e-003	5.6141e-005
2.7533e-005		7.0972e-003	6.2815e-005
3.0276e-005		7.6577e-003	7.1278e-005
3.2563e-005		8.1174e-003	7.8558e-005
3.5306e-005		8.6871e-003	8.7672e-005
3.7592e-005		9.1642e-003	9.5645e-005
4.0335e-005		9.7094e-003	1.0553e-004
4.2621e-005		1.0141e-002	1.1383e-004
4.5365e-005		1.0644e-002	1.2359e-004
4.7651e-005		1.1045e-002	1.3141e-004
5.0394e-005		1.1499e-002	1.4043e-004

FIGURE 12
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Middle Principal Elastic Strain

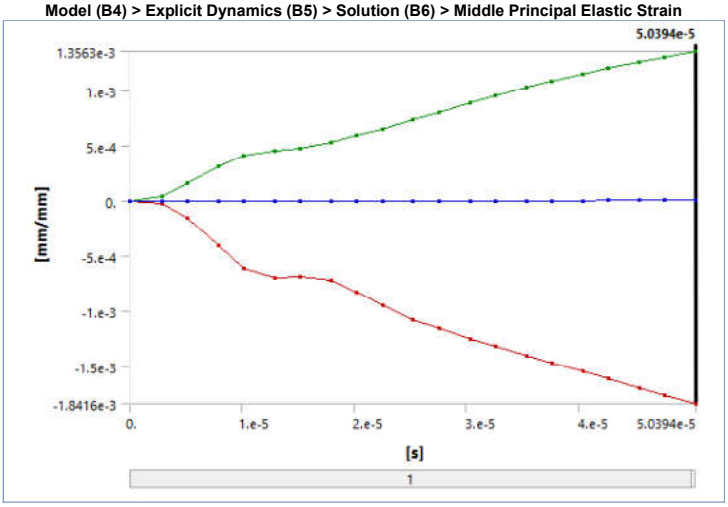


TABLE 29
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Middle Principal Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	-2.6556e-005	4.1578e-005	1.5153e-008
5.1291e-006	-1.5132e-004	1.5919e-004	4.8084e-008
7.8725e-006	-4.0999e-004	3.1481e-004	7.633e-008
1.0159e-005	-6.1612e-004	4.1537e-004	4.372e-008
1.2902e-005	-7.0361e-004	4.5663e-004	1.398e-007
1.5188e-005	-6.9174e-004	4.8002e-004	2.5236e-007
1.7931e-005	-7.2665e-004	5.3294e-004	4.1268e-007
2.0218e-005	-8.2997e-004	5.9122e-004	5.271e-007
2.2504e-005	-9.5447e-004	6.4796e-004	6.3077e-007
2.5247e-005	-1.0788e-003	7.3433e-004	7.9478e-007
2.7533e-005	-1.1601e-003	8.028e-004	9.6466e-007
3.0276e-005	-1.2497e-003	8.8435e-004	1.1582e-006
3.2563e-005	-1.3208e-003	9.5361e-004	1.3368e-006
3.5306e-005	-1.4041e-003	1.0278e-003	1.5759e-006
3.7592e-005	-1.4695e-003	1.0878e-003	1.782e-006
4.0335e-005	-1.5485e-003	1.1532e-003	2.0062e-006
4.2621e-005	-1.6159e-003	1.2035e-003	2.1703e-006
4.5365e-005	-1.6966e-003	1.2601e-003	2.3384e-006
4.7651e-005	-1.7628e-003	1.3043e-003	2.4988e-006
5.0394e-005	-1.8416e-003	1.3563e-003	2.7122e-006

FIGURE 13
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Shear Elastic Strain

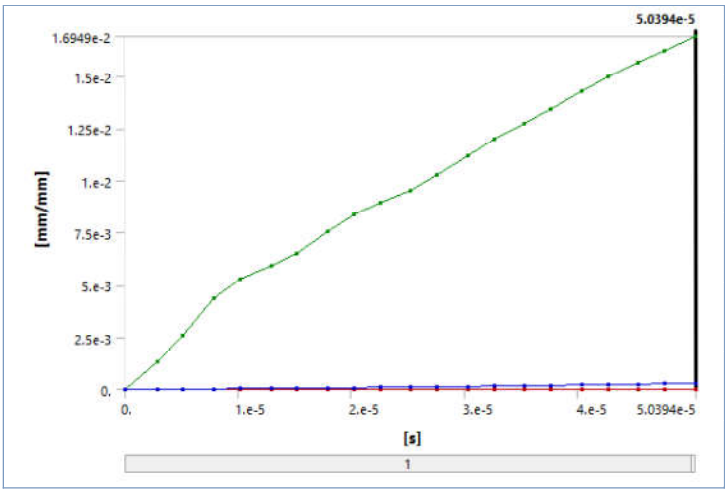


TABLE 30
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Shear Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	0.	1.3459e-003	6.5194e-006
5.1291e-006		2.5857e-003	1.4672e-005
7.8725e-006		4.3604e-003	2.6549e-005
1.0159e-005		5.3255e-003	3.6508e-005
1.2902e-005		5.9461e-003	4.8519e-005
1.5188e-005		6.5075e-003	5.8886e-005
1.7931e-005		7.5655e-003	7.2783e-005
2.0218e-005		8.3686e-003	8.5222e-005
2.2504e-005		8.941e-003	9.7655e-005
2.5247e-005		9.5364e-003	1.128e-004
2.7533e-005		1.0265e-002	1.2622e-004
3.0276e-005		1.1188e-002	1.4341e-004
3.2563e-005		1.1967e-002	1.5828e-004
3.5306e-005		1.275e-002	1.7658e-004
3.7592e-005		1.3448e-002	1.9243e-004
4.0335e-005		1.4297e-002	2.1219e-004
4.2621e-005		1.4967e-002	2.2891e-004
4.5365e-005		1.5698e-002	2.4873e-004
4.7651e-005		1.6281e-002	2.6478e-004
5.0394e-005		1.6949e-002	2.8351e-004

TABLE 31
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Results

Object Name	*Elastic Strain Intensity*	*Normal Elastic Strain*	*Shear Elastic Strain*	*Equivalent Stress*	*Maximum Principal Stress*	*Middle Principal Stress*	*Minimum Principal Stress*	*Maximum Shear Stress*	*Stress Intensity*	*Normal Stress*	*Shear Stress*
State	Solved										
Scope											
Scoping Method	Geometry Selection										
Geometry	All Bodies										
Definition											
Type	Elastic Strain Intensity	Normal Elastic Strain	Shear Elastic Strain	Equivalent (von-Mises) Stress	Maximum Principal Stress	Middle Principal Stress	Minimum Principal Stress	Maximum Shear Stress	Stress Intensity	Normal Stress	Shear Stress
By	Time										
Display Time	Last										
Calculate Time History	Yes										
Identifier											
Suppressed	No										
Orientation		X Axis	XY Plane							X Axis	XY Plane
Coordinate System		Global Coordinate System								Global Coordinate System	
Integration Point Results											
Display Option	Averaged										
Average Across Bodies	No										
Results											
Minimum	0. mm/mm	-6.7551e-003 mm/mm	-1.0213e-002 mm/mm	0. MPa	-149.2 MPa	-170.82 MPa	-510.15 MPa	0. MPa		-453.29 MPa	-272.6 MPa
Maximum	1.6949e-002 mm/mm	1.1167e-002 mm/mm	9.9787e-003 mm/mm	825.52 MPa	838.64 MPa	234.08 MPa	128.69 MPa	452.4 MPa	904.81 MPa	818.77 MPa	266.35 MPa
Average	2.8351e-004 mm/mm	8.6107e-007 mm/mm	-2.3291e-005 mm/mm	13.991 MPa	7.4958 MPa	0.14368 MPa	-7.6391 MPa	7.5675 MPa	15.135 MPa	4.4864e-002 MPa	-0.62167 MPa
Minimum Occurs On	CAR_Default<As Machined>[3]	CAR_Default<As Machined>	CAR_Default<As Machined>[2]	CAR_Default<As Machined>[3]	CAR_Default<As Machined>			CAR_Default<As Machined>[3]		CAR_Default<As Machined>	CAR_Default<As Machined>[2]
Maximum Occurs On	CAR_Default<As Machined>										

Minimum Value Over Time											
Minimum	0. mm/mm	-6.7551e-003 mm/mm	-1.0213e-002 mm/mm	0. MPa	-149.2 MPa	-170.82 MPa	-510.15 MPa	0. MPa		-453.29 MPa	-272.6 MPa
Maximum	0. mm/mm			0. MPa							
Maximum Value Over Time											
Minimum	0. mm/mm			0. MPa							
Maximum	1.6949e-002 mm/mm	1.1167e-002 mm/mm	9.9787e-003 mm/mm	825.52 MPa	838.64 MPa	234.08 MPa	128.69 MPa	452.4 MPa	904.81 MPa	818.77 MPa	266.35 MPa
Information											
Time	5.0394e-005 s										
Set	21										
Cycle Number	112										

FIGURE 14
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Elastic Strain Intensity

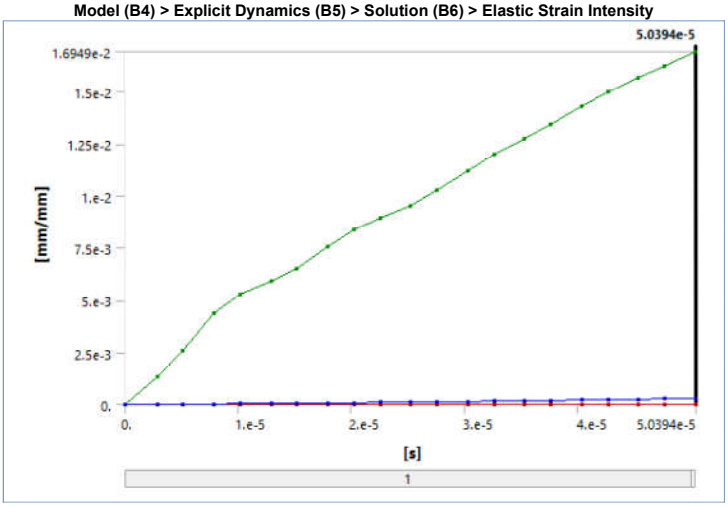


TABLE 32
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Elastic Strain Intensity

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	0.	1.3459e-003	6.5194e-006
5.1291e-006		2.5857e-003	1.4672e-005
7.8725e-006		4.3604e-003	2.6549e-005
1.0159e-005		5.3255e-003	3.6508e-005
1.2902e-005		5.9461e-003	4.8519e-005
1.5188e-005		6.5075e-003	5.8886e-005
1.7931e-005		7.5655e-003	7.2783e-005
2.0218e-005		8.3686e-003	8.5222e-005
2.2504e-005		8.941e-003	9.7655e-005
2.5247e-005		9.5364e-003	1.128e-004
2.7533e-005		1.0265e-002	1.2622e-004
3.0276e-005		1.1188e-002	1.4341e-004
3.2563e-005		1.1967e-002	1.5828e-004
3.5306e-005		1.275e-002	1.7658e-004
3.7592e-005		1.3448e-002	1.9243e-004
4.0335e-005		1.4297e-002	2.1219e-004
4.2621e-005		1.4967e-002	2.2891e-004
4.5365e-005		1.5698e-002	2.4873e-004
4.7651e-005		1.6281e-002	2.6478e-004
5.0394e-005		1.6949e-002	2.8351e-004

FIGURE 15
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Normal Elastic Strain

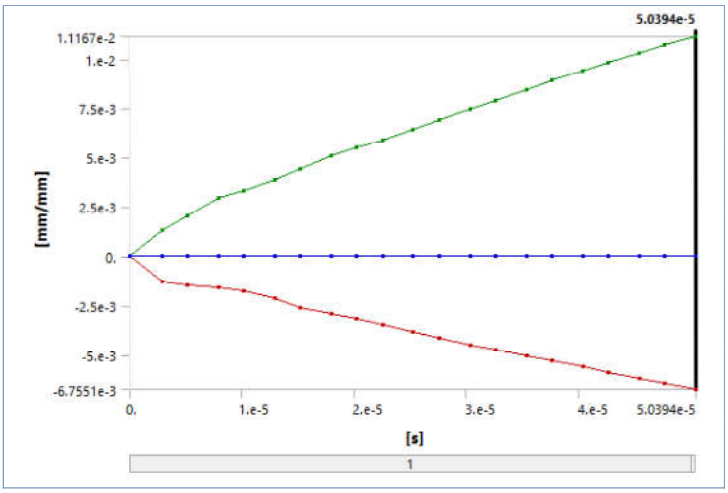


TABLE 33
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Normal Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	-1.2712e-003	1.2946e-003	5.1706e-007
5.1291e-006	-1.45e-003	2.0137e-003	1.3125e-006
7.8725e-006	-1.5922e-003	2.9231e-003	2.0952e-006
1.0159e-005	-1.7318e-003	3.322e-003	2.1864e-006
1.2902e-005	-2.1352e-003	3.8642e-003	1.8265e-006
1.5188e-005	-2.5872e-003	4.4288e-003	1.6695e-006
1.7931e-005	-2.9167e-003	5.0747e-003	1.6267e-006
2.0218e-005	-3.1435e-003	5.4743e-003	1.3937e-006
2.2504e-005	-3.4586e-003	5.8598e-003	9.6591e-007
2.5247e-005	-3.8477e-003	6.405e-003	5.8743e-007
2.7533e-005	-4.125e-003	6.8843e-003	5.9133e-007
3.0276e-005	-4.4783e-003	7.4284e-003	8.1106e-007
3.2563e-005	-4.7707e-003	7.8744e-003	1.0569e-006
3.5306e-005	-5.0436e-003	8.4293e-003	1.3976e-006
3.7592e-005	-5.2623e-003	8.8939e-003	1.6541e-006
4.0335e-005	-5.5976e-003	9.4258e-003	1.8197e-006
4.2621e-005	-5.8907e-003	9.8483e-003	1.809e-006
4.5365e-005	-6.2043e-003	1.034e-002	1.6175e-006
4.7651e-005	-6.4577e-003	1.0729e-002	1.3114e-006
5.0394e-005	-6.7551e-003	1.1167e-002	8.6107e-007

FIGURE 16
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Shear Elastic Strain

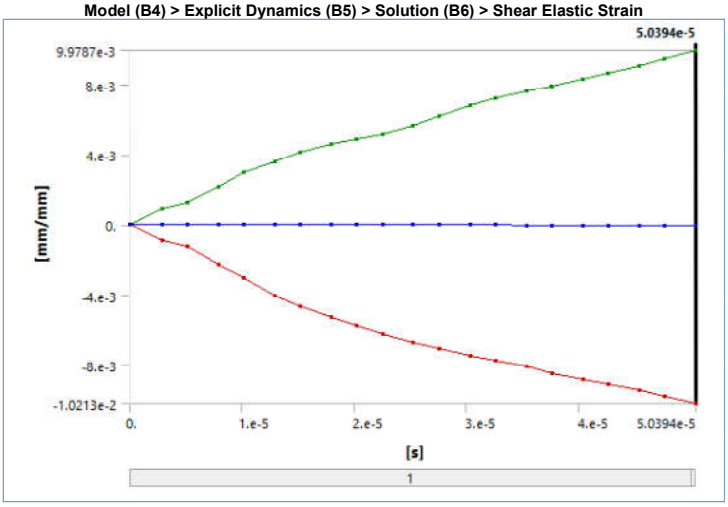


TABLE 34
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Shear Elastic Strain

Time [s]	Minimum [mm/mm]	Maximum [mm/mm]	Average [mm/mm]
1.1755e-038			
2.843e-006	-8.6103e-004	9.2255e-004	-1.5163e-007
5.1291e-006	-1.2282e-003	1.2555e-003	-4.519e-007
7.8725e-006	-2.2619e-003	2.1518e-003	-1.1597e-006
1.0159e-005	-2.9859e-003	2.9538e-003	-1.7391e-006
1.2902e-005	-4.0293e-003	3.6103e-003	-2.4178e-006
1.5188e-005	-4.6704e-003	4.112e-003	-3.291e-006
1.7931e-005	-5.2825e-003	4.5959e-003	-4.9838e-006
2.0218e-005	-5.7782e-003	4.8763e-003	-6.6159e-006

2.2504e-005	-6.1964e-003	5.1654e-003	-7.9847e-006
2.5247e-005	-6.6798e-003	5.6688e-003	-9.4012e-006
2.7533e-005	-7.085e-003	6.1916e-003	-1.0703e-005
3.0276e-005	-7.4785e-003	6.8128e-003	-1.2421e-005
3.2563e-005	-7.7317e-003	7.2457e-003	-1.3788e-005
3.5306e-005	-8.1087e-003	7.6395e-003	-1.5356e-005
3.7592e-005	-8.4843e-003	7.9375e-003	-1.6714e-005
4.0335e-005	-8.8544e-003	8.3291e-003	-1.8311e-005
4.2621e-005	-9.0829e-003	8.676e-003	-1.9511e-005
4.5365e-005	-9.4231e-003	9.1092e-003	-2.0853e-005
4.7651e-005	-9.7917e-003	9.4891e-003	-2.1967e-005
5.0394e-005	-1.0213e-002	9.9787e-003	-2.3291e-005

FIGURE 17
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Equivalent Stress

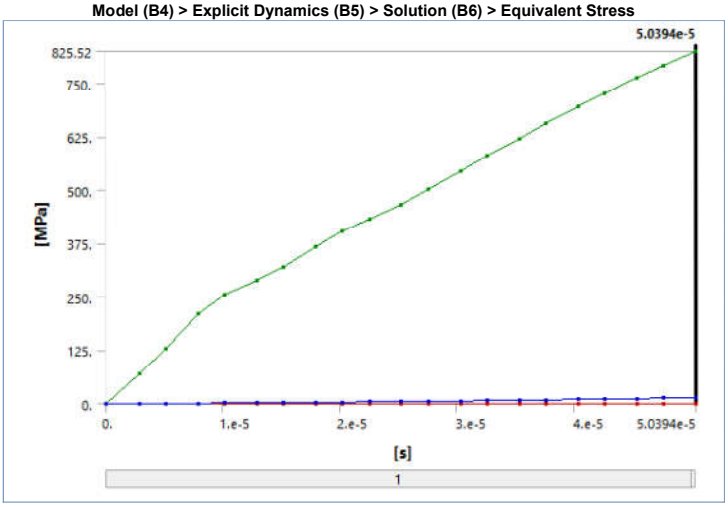


TABLE 35
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Equivalent Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	0.	71.218	0.326
5.1291e-006		128.56	0.71405
7.8725e-006		210.76	1.2691
1.0159e-005		256.02	1.7348
1.2902e-005		289.03	2.3069
1.5188e-005		318.92	2.8064
1.7931e-005		368.34	3.4741
2.0218e-005		404.12	4.0736
2.2504e-005		432.48	4.6814
2.5247e-005		467.44	5.4303
2.7533e-005		502.88	6.0955
3.0276e-005		545.8	6.9509
3.2563e-005		580.19	7.6963
3.5306e-005		621.01	8.6188
3.7592e-005		655.83	9.4196
4.0335e-005		696.44	10.419
4.2621e-005		728.01	11.264
4.5365e-005		764.32	12.262
4.7651e-005		792.86	13.063
5.0394e-005		825.52	13.991

FIGURE 18
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Principal Stress

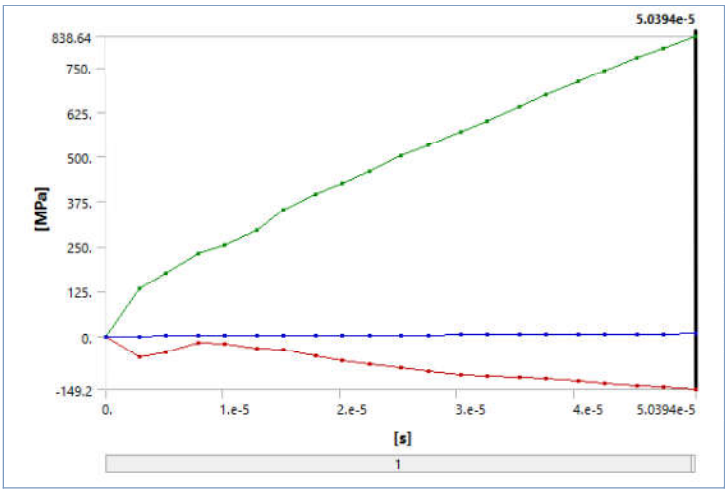


TABLE 36
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Principal Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	-59.305	132.2	0.20764
5.1291e-006	-45.538	176.45	0.43833
7.8725e-006	-17.134	231.26	0.74948
1.0159e-005	-20.361	254.54	1.0062
1.2902e-005	-34.354	294.77	1.3103
1.5188e-005	-39.682	350.66	1.608
1.7931e-005	-55.431	395.35	2.0002
2.0218e-005	-67.19	426.42	2.3115
2.2504e-005	-77.016	458.82	2.6169
2.5247e-005	-89.14	501.29	3.0098
2.7533e-005	-99.231	534.46	3.3709
3.0276e-005	-107.95	570.96	3.8189
3.2563e-005	-112.56	601.58	4.2003
3.5306e-005	-116.37	641.55	4.6948
3.7592e-005	-120.63	674.56	5.1359
4.0335e-005	-127.27	711.57	5.676
4.2621e-005	-132.5	741.45	6.1202
4.5365e-005	-137.51	776.51	6.6351
4.7651e-005	-141.88	805.73	7.0391
5.0394e-005	-149.2	838.64	7.4958

FIGURE 19
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Middle Principal Stress

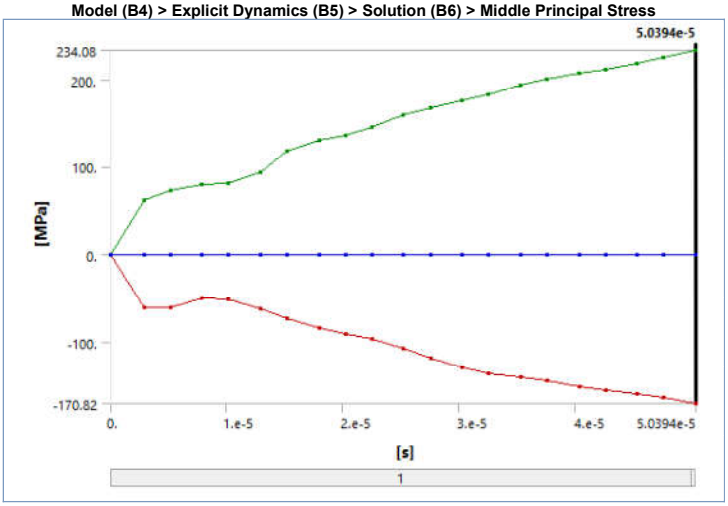


TABLE 37
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Middle Principal Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	-61.271	61.629	2.321e-002
5.1291e-006	-60.419	73.436	3.4161e-002
7.8725e-006	-49.252	80.374	3.2282e-002
1.0159e-005	-50.741	81.818	2.3959e-002
1.2902e-005	-62.164	94.218	1.9775e-002
1.5188e-005	-72.76	118.95	4.1584e-002
1.7931e-005	-83.601	130.38	6.6899e-002
2.0218e-005	-90.441	136.18	6.1316e-002

2.2504e-005	-96.767	145.77	5.1151e-002
2.5247e-005	-107.9	159.56	5.5211e-002
2.7533e-005	-119.08	168.48	6.9146e-002
3.0276e-005	-130.18	176.51	7.5645e-002
3.2563e-005	-135.85	183.8	7.7965e-002
3.5306e-005	-140.81	194.35	9.8742e-002
3.7592e-005	-145.27	201.51	0.12521
4.0335e-005	-151.11	207.52	0.14944
4.2621e-005	-155.65	212.61	0.15965
4.5365e-005	-160.37	219.35	0.16205
4.7651e-005	-164.5	225.97	0.15723
5.0394e-005	-170.82	234.08	0.14368

FIGURE 20
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Minimum Principal Stress

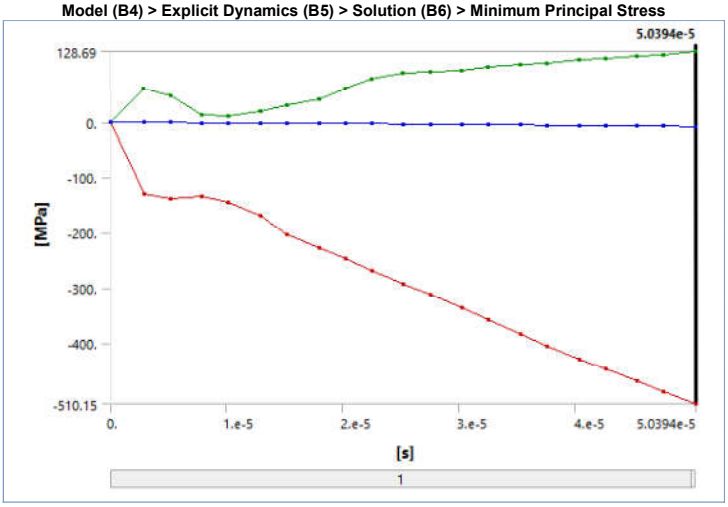


TABLE 38
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Minimum Principal Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	-129.89	60.349	-0.14039
5.1291e-006	-137.83	47.684	-0.3449
7.8725e-006	-133.48	14.055	-0.6678
1.0159e-005	-145.96	11.329	-0.94269
1.2902e-005	-169.8	19.563	-1.2799
1.5188e-005	-204.4	31.211	-1.5355
1.7931e-005	-227.36	42.427	-1.8852
2.0218e-005	-247.45	60.295	-2.2379
2.2504e-005	-268.34	78.951	-2.5962
2.5247e-005	-292.88	88.884	-3.0117
2.7533e-005	-312.68	90.842	-3.3669
3.0276e-005	-336.87	94.464	-3.8366
3.2563e-005	-358.62	99.819	-4.2491
3.5306e-005	-385.06	104.68	-4.7318
3.7592e-005	-405.67	107.98	-5.1368
4.0335e-005	-428.78	112.94	-5.6513
4.2621e-005	-447.49	116.72	-6.0996
4.5365e-005	-469.68	119.52	-6.643
4.7651e-005	-488.13	122.6	-7.0959
5.0394e-005	-510.15	128.69	-7.6391

FIGURE 21
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Shear Stress

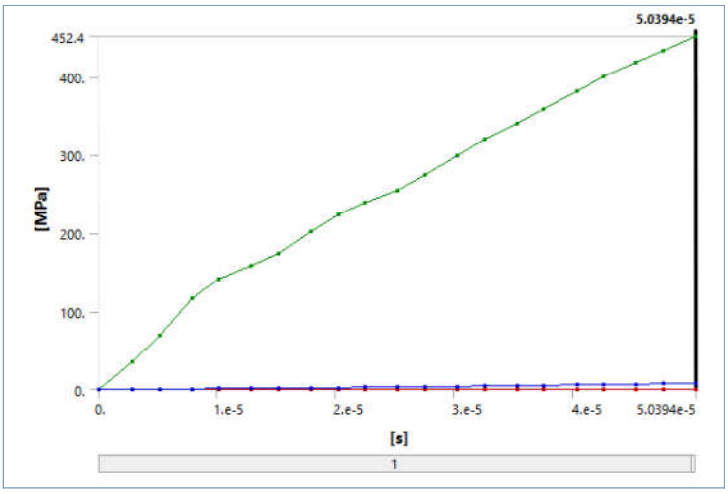


TABLE 39
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Maximum Shear Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	0.	35.925	0.17401
5.1291e-006		69.017	0.39161
7.8725e-006		116.39	0.70864
1.0159e-005		142.15	0.97445
1.2902e-005		158.71	1.2951
1.5188e-005		173.7	1.5718
1.7931e-005		201.94	1.9427
2.0218e-005		223.37	2.2747
2.2504e-005		238.65	2.6066
2.5247e-005		254.54	3.0108
2.7533e-005		273.98	3.3689
3.0276e-005		298.63	3.8277
3.2563e-005		319.41	4.2247
3.5306e-005		340.31	4.7133
3.7592e-005		358.96	5.1363
4.0335e-005		381.62	5.6636
4.2621e-005		399.49	6.1099
4.5365e-005		419.01	6.6391
4.7651e-005		434.57	7.0675
5.0394e-005		452.4	7.5675

FIGURE 22
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Stress Intensity

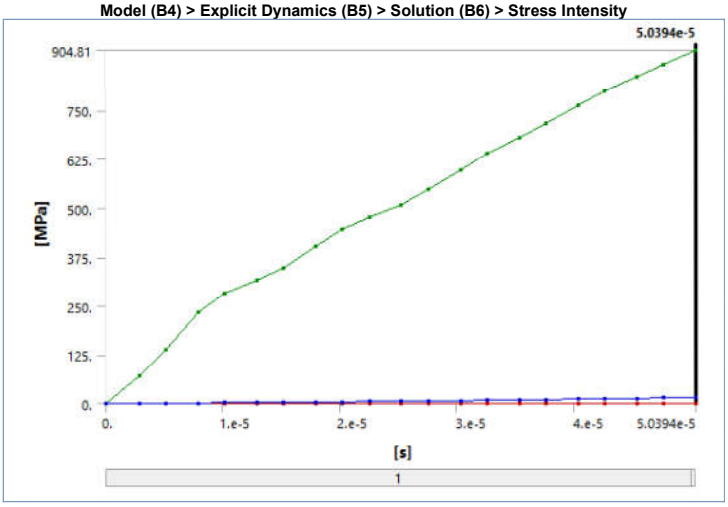


TABLE 40
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Stress Intensity

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006		71.85	0.34803
5.1291e-006		138.03	0.78323
7.8725e-006		232.77	1.4173
1.0159e-005		284.29	1.9489
1.2902e-005		317.43	2.5901
1.5188e-005		347.39	3.1435
1.7931e-005		403.87	3.8854
2.0218e-005		446.75	4.5494

2.2504e-005	0.	477.3	5.2131
2.5247e-005		509.08	6.0215
2.7533e-005		547.96	6.7378
3.0276e-005		597.26	7.6555
3.2563e-005		638.82	8.4494
3.5306e-005		680.61	9.4267
3.7592e-005		717.92	10.273
4.0335e-005		763.24	11.327
4.2621e-005		798.98	12.22
4.5365e-005		838.02	13.278
4.7651e-005		869.15	14.135
5.0394e-005		904.81	15.135

FIGURE 23
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Normal Stress

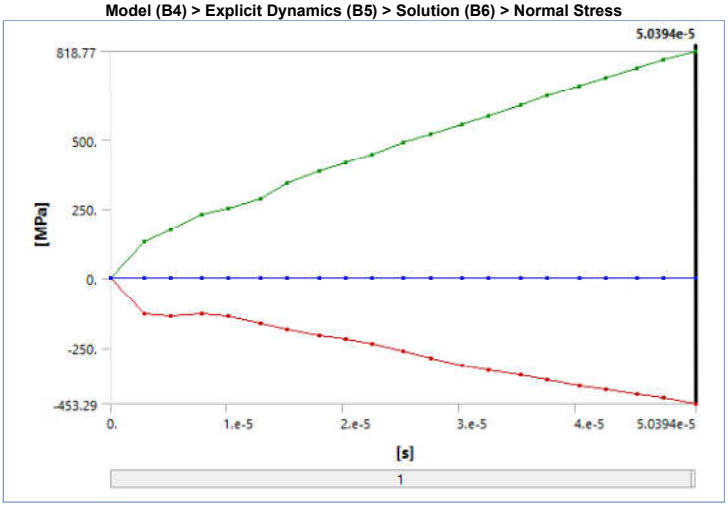


TABLE 41
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Normal Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	-129.59	132.16	5.0004e-002
5.1291e-006	-137.05	175.74	0.10166
7.8725e-006	-130.25	228.63	0.14006
1.0159e-005	-138.38	249.92	0.13834
1.2902e-005	-162.09	285.75	0.10982
1.5188e-005	-184.66	341.27	0.11724
1.7931e-005	-206.02	386.43	0.13171
2.0218e-005	-221.17	415.82	0.10758
2.2504e-005	-236.23	447.33	6.9042e-002
2.5247e-005	-262.52	489.11	4.4142e-002
2.7533e-005	-289.11	521.76	4.9217e-002
3.0276e-005	-316.04	556.99	5.7113e-002
3.2563e-005	-332.23	586.8	6.3022e-002
3.5306e-005	-350.02	626.11	8.9227e-002
3.7592e-005	-366.49	658.56	0.11837
4.0335e-005	-387.03	694.86	0.13949
4.2621e-005	-402.96	724.22	0.14036
4.5365e-005	-419.86	758.57	0.12357
4.7651e-005	-433.28	786.66	9.3844e-002
5.0394e-005	-453.29	818.77	4.4864e-002

FIGURE 24
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Shear Stress

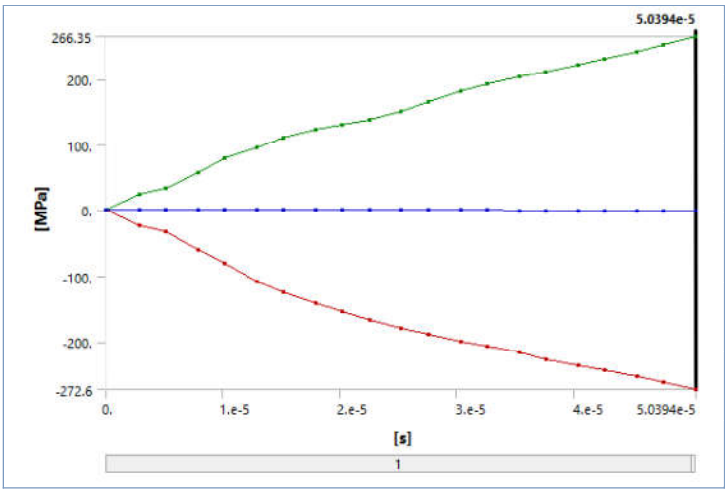


TABLE 42
Model (B4) > Explicit Dynamics (B5) > Solution (B6) > Shear Stress

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1.1755e-038			
2.843e-006	-22.982	24.625	-4.0474e-003
5.1291e-006	-32.782	33.513	-1.2062e-002
7.8725e-006	-60.374	57.436	-3.0956e-002
1.0159e-005	-79.698	78.843	-4.642e-002
1.2902e-005	-107.55	96.366	-6.4535e-002
1.5188e-005	-124.66	109.76	-8.7842e-002
1.7931e-005	-141.	122.67	-0.13303
2.0218e-005	-154.23	130.16	-0.17659
2.2504e-005	-165.39	137.87	-0.21313
2.5247e-005	-178.3	151.31	-0.25093
2.7533e-005	-189.11	165.26	-0.28568
3.0276e-005	-199.61	181.84	-0.33154
3.2563e-005	-206.37	193.4	-0.36803
3.5306e-005	-216.44	203.91	-0.40988
3.7592e-005	-226.46	211.87	-0.44612
4.0335e-005	-236.34	222.32	-0.48876
4.2621e-005	-242.44	231.58	-0.52079
4.5365e-005	-251.52	243.14	-0.55661
4.7651e-005	-261.36	253.28	-0.58634
5.0394e-005	-272.6	266.35	-0.62167

Material Data

Aluminum Alloy

TABLE 43
Aluminum Alloy > Constants

Density	2.77e-006 kg mm^-3
Isotropic Secant Coefficient of Thermal Expansion	2.3e-005 C^-1
Specific Heat Constant Pressure	8.75e+005 mJ kg^-1 C^-1

TABLE 44
Aluminum Alloy > Color

Red	Green	Blue
138	104	46

TABLE 45
Aluminum Alloy > Compressive Ultimate Strength

Compressive Ultimate Strength MPa
0

TABLE 46
Aluminum Alloy > Compressive Yield Strength

Compressive Yield Strength MPa
280

TABLE 47
Aluminum Alloy > Tensile Yield Strength

Tensile Yield Strength MPa
280

TABLE 48
Aluminum Alloy > Tensile Ultimate Strength

Tensile Ultimate Strength MPa
310

TABLE 49
Aluminum Alloy > Isotropic Secant Coefficient of Thermal Expansion

Zero-Thermal-Strain Reference Temperature C
22

TABLE 50
Aluminum Alloy > Isotropic Thermal Conductivity

Thermal Conductivity W mm^-1 C^-1	Temperature C
0.114	-100
0.144	0
0.165	100
0.175	200

TABLE 51
Aluminum Alloy > S-N Curve

Alternating Stress MPa	Cycles	R-Ratio
275.8	1700	-1
241.3	5000	-1
206.8	34000	-1
172.4	1.4e+005	-1
137.9	8.e+005	-1
117.2	2.4e+006	-1
89.63	5.5e+007	-1
82.74	1.e+008	-1
170.6	50000	-0.5
139.6	3.5e+005	-0.5
108.6	3.7e+006	-0.5
87.91	1.4e+007	-0.5
77.57	5.e+007	-0.5
72.39	1.e+008	-0.5
144.8	50000	0
120.7	1.9e+005	0
103.4	1.3e+006	0
93.08	4.4e+006	0
86.18	1.2e+007	0
72.39	1.e+008	0
74.12	3.e+005	0.5
70.67	1.5e+006	0.5
66.36	1.2e+007	0.5
62.05	1.e+008	0.5

TABLE 52
Aluminum Alloy > Isotropic Resistivity

Resistivity ohm mm	Temperature C
2.43e-005	0
2.67e-005	20
3.63e-005	100

TABLE 53
Aluminum Alloy > Isotropic Elasticity

Young's Modulus MPa	Poisson's Ratio	Bulk Modulus MPa	Shear Modulus MPa	Temperature C
71000	0.33	69608	26692	

TABLE 54
Aluminum Alloy > Isotropic Relative Permeability

Relative Permeability
1

Concrete

TABLE 55
Concrete > Constants

Density	2.3e-006 kg mm^-3
Isotropic Secant Coefficient of Thermal Expansion	1.4e-005 C^-1
Specific Heat Constant Pressure	7.8e+005 mJ kg^-1 C^-1
Isotropic Thermal Conductivity	7.2e-004 W mm^-1 C^-1

TABLE 56
Concrete > Color

Red	Green	Blue
180	173	167

TABLE 57
Concrete > Compressive Ultimate Strength

Compressive Ultimate Strength MPa
41

TABLE 58
Concrete > Compressive Yield Strength

Compressive Yield Strength MPa
0

TABLE 59
Concrete > Tensile Yield Strength

Tensile Yield Strength MPa
0

TABLE 60
Concrete > Tensile Ultimate Strength

Tensile Ultimate Strength MPa
5

TABLE 61
Concrete > Isotropic Secant Coefficient of Thermal Expansion

Zero-Thermal-Strain Reference Temperature C
22

TABLE 62
Concrete > Isotropic Elasticity

Young's Modulus MPa	Poisson's Ratio	Bulk Modulus MPa	Shear Modulus MPa	Temperature C
30000	0.18	15625	12712	