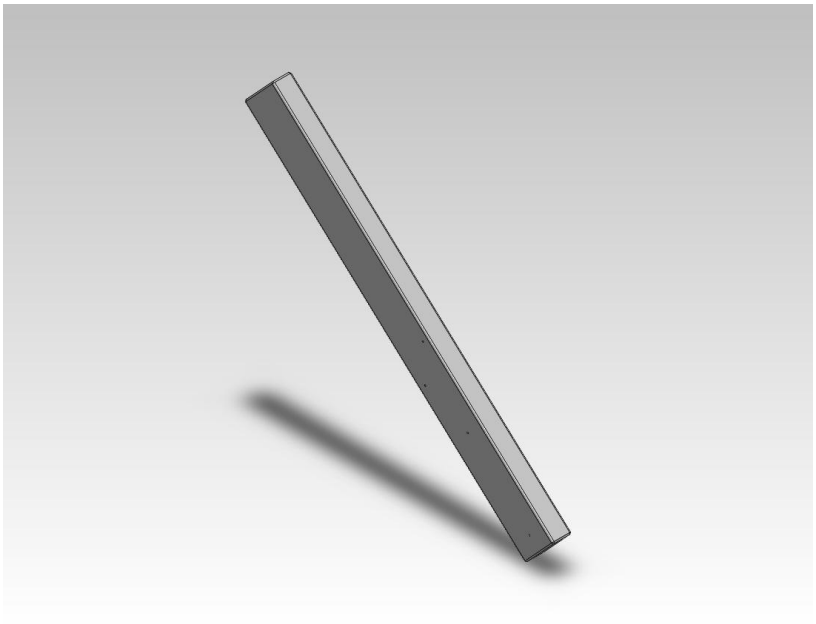


Simulation of Part3

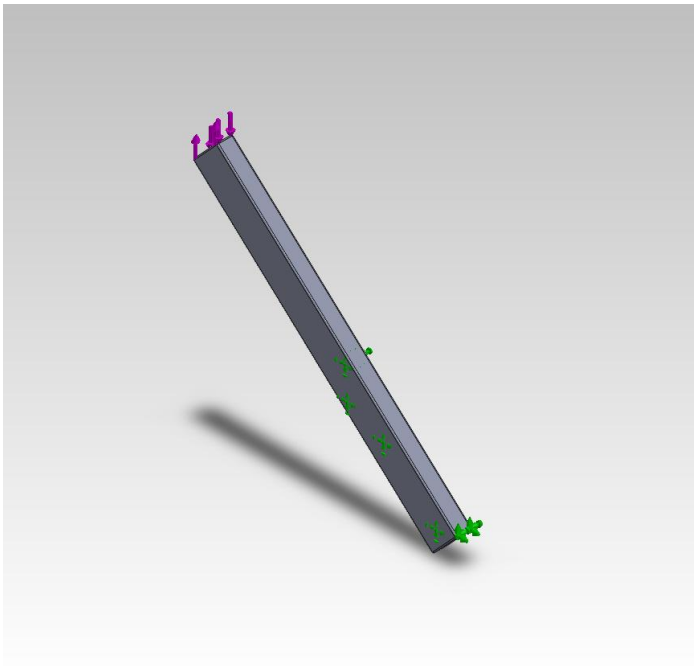
Date: Thursday, November 01, 2012
Designer: Nick Higgins
Study name: SimulationXpress Study
Analysis type: Static

Table of Contents

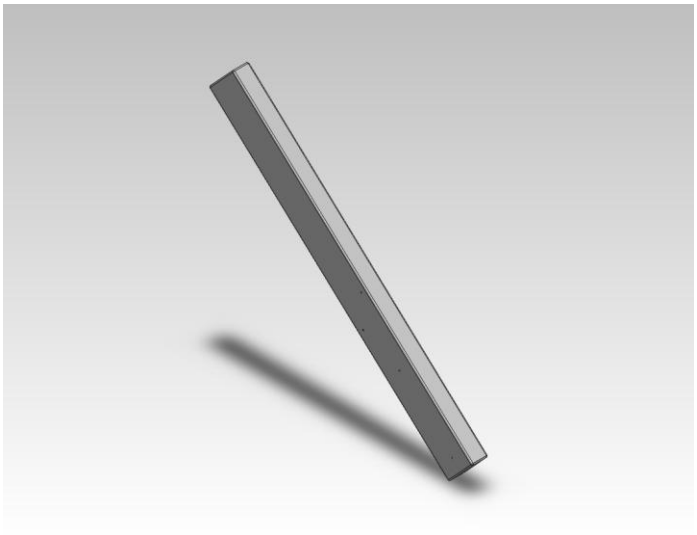
Description

25 lbf applied to generator pedals causes combined loading on the wood 2x4. This simulation shows the results of this combined loading

Assumptions

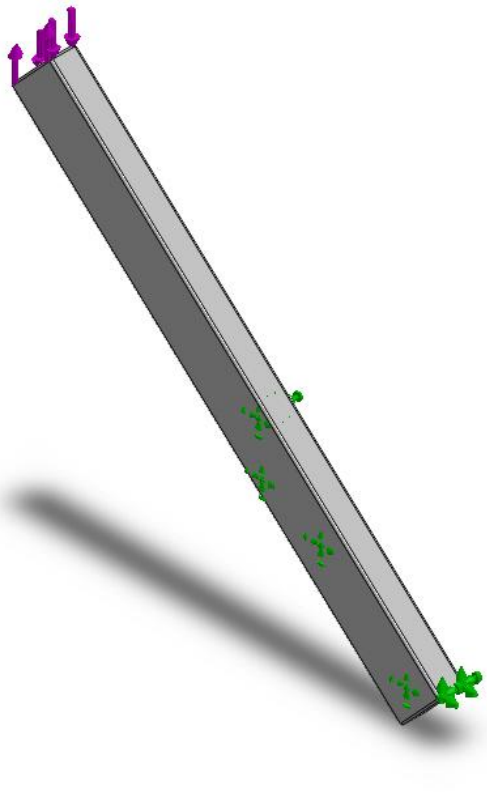


Original Model



Model Analyzed

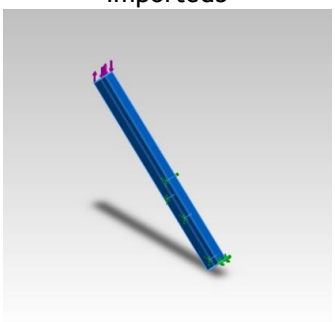
Model Information



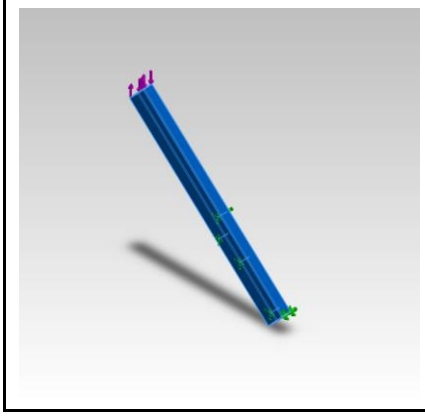
Model name: Part3
Current Configuration: Default

Solid Bodies

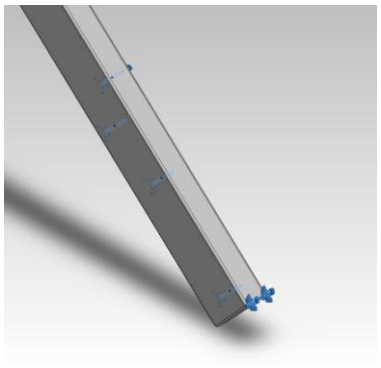
Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified

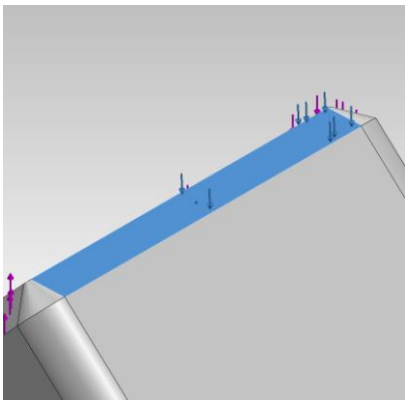
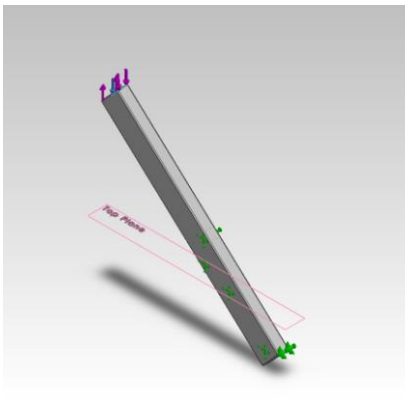
Imported3 	Solid Body	**Mass:0.20689 kg** **Volume:0.00254247 m^3** **Density:81.3734 kg/m^3** **Weight:2.02752 N**	

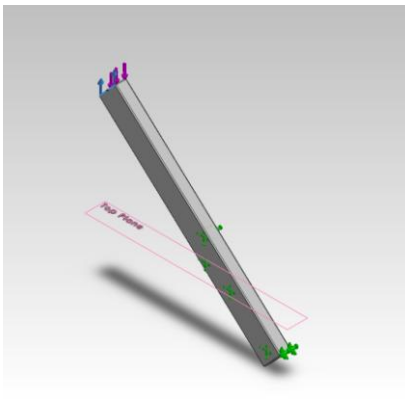
Material Properties

Model Reference	Properties	Components
	**Name:** White Pine **Model type:** Linear Elastic Isotropic **Default failure criterion:** Max von Mises Stress **Tensile strength:** 4351.13 psi	SolidBody 2(Imported3)(Part3)

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		**Entities:** 5 face(s) **Type:** Fixed Geometry

Load name	Load Image	Load Details
Force-1		**Entities:** 1 face(s) **Type:** Apply normal force **Value:** 25 lbf
Force-2		**Entities:** 1 face(s), 1 plane(s) **Reference:** Top Plane **Type:** Apply force **Values:** ---, ---, -91.7 lbf

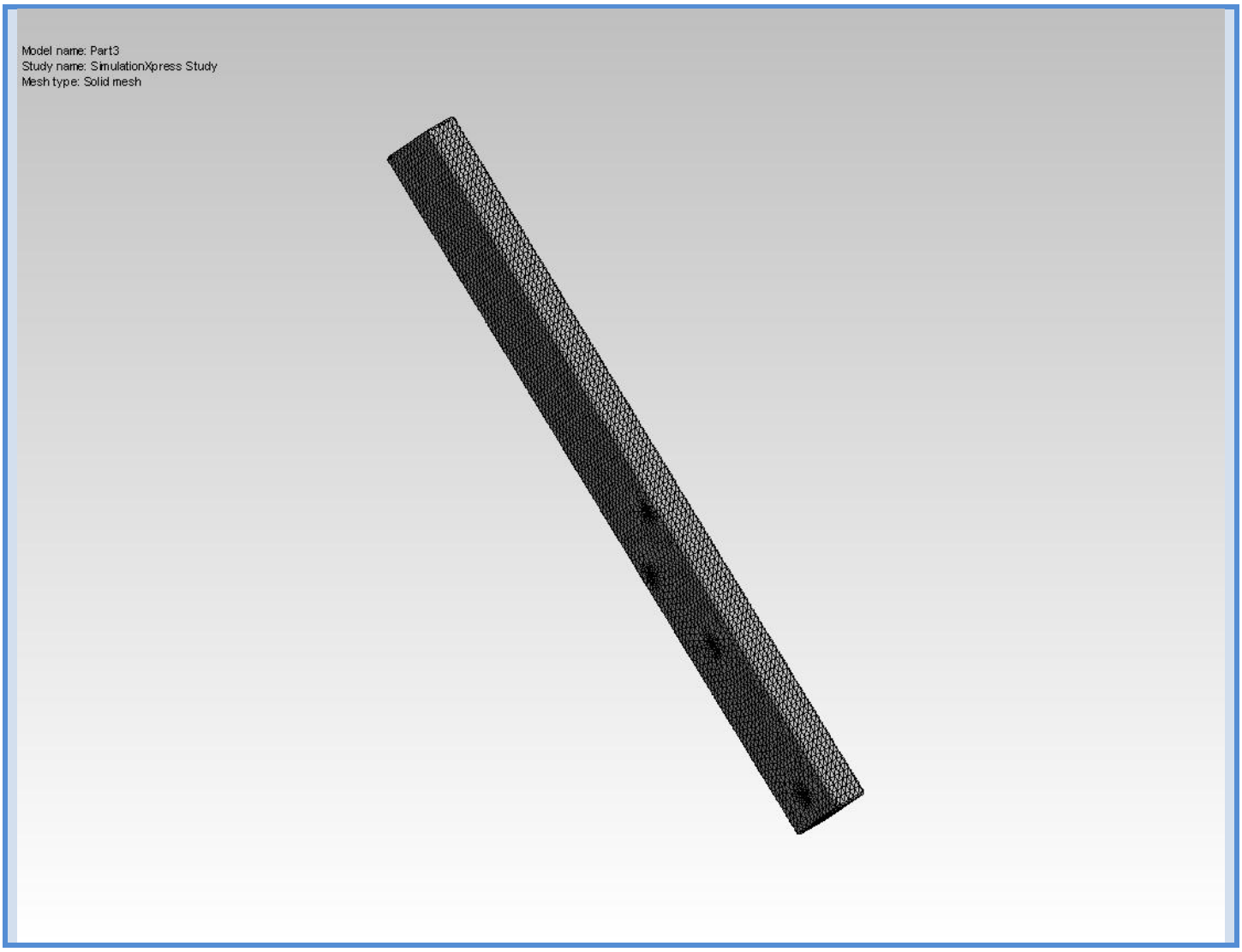
Force-3		**Entities:** 1 face(s), 1 plane(s) **Reference:** Top Plane **Type:** Apply force **Values:** ---, ---, 91.7 lbf

Mesh Information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points	4 Points
Element Size	0.268725 in
Tolerance	0.0134363 in
Mesh Quality	High

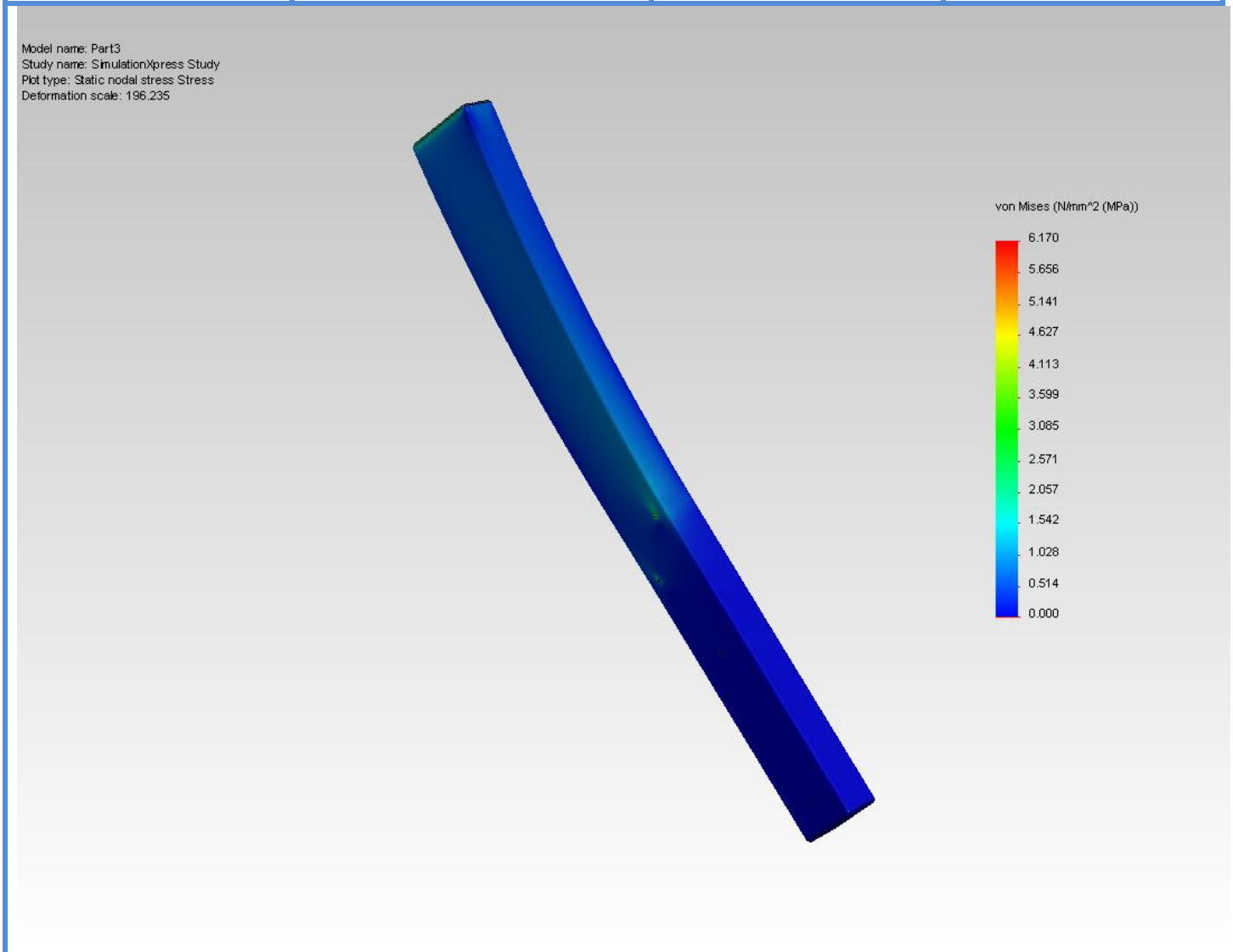
Mesh Information - Details

Total Nodes	88995
Total Elements	59266
Maximum Aspect Ratio	11.075
% of elements with Aspect Ratio < 3	98.4
% of elements with Aspect Ratio > 10	0.00844
% of distorted elements(Jacobian)	0
Time to complete mesh(hh;mm;ss):	00:00:05
Computer name:	TWCVIA22


Model name: Part3
Study name: SimulationXpress Study
Mesh type: Solid mesh

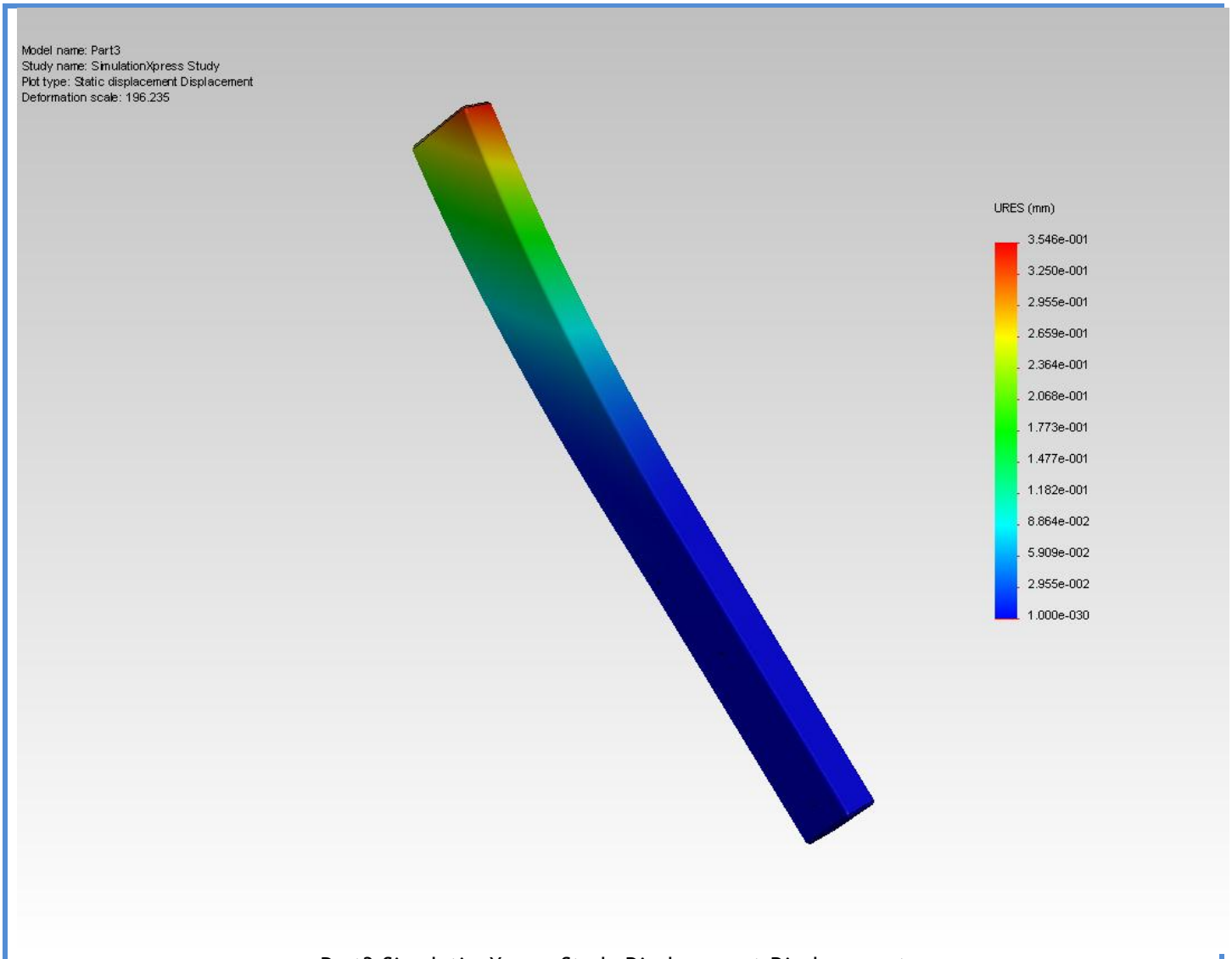
Study Results

Name	Type	Min	Max
Stress	VON: von Mises Stress	3.93742e-006 N/mm^2 (MPa) Node: 3270	6.16972 N/mm^2 (MPa) Node: 67229



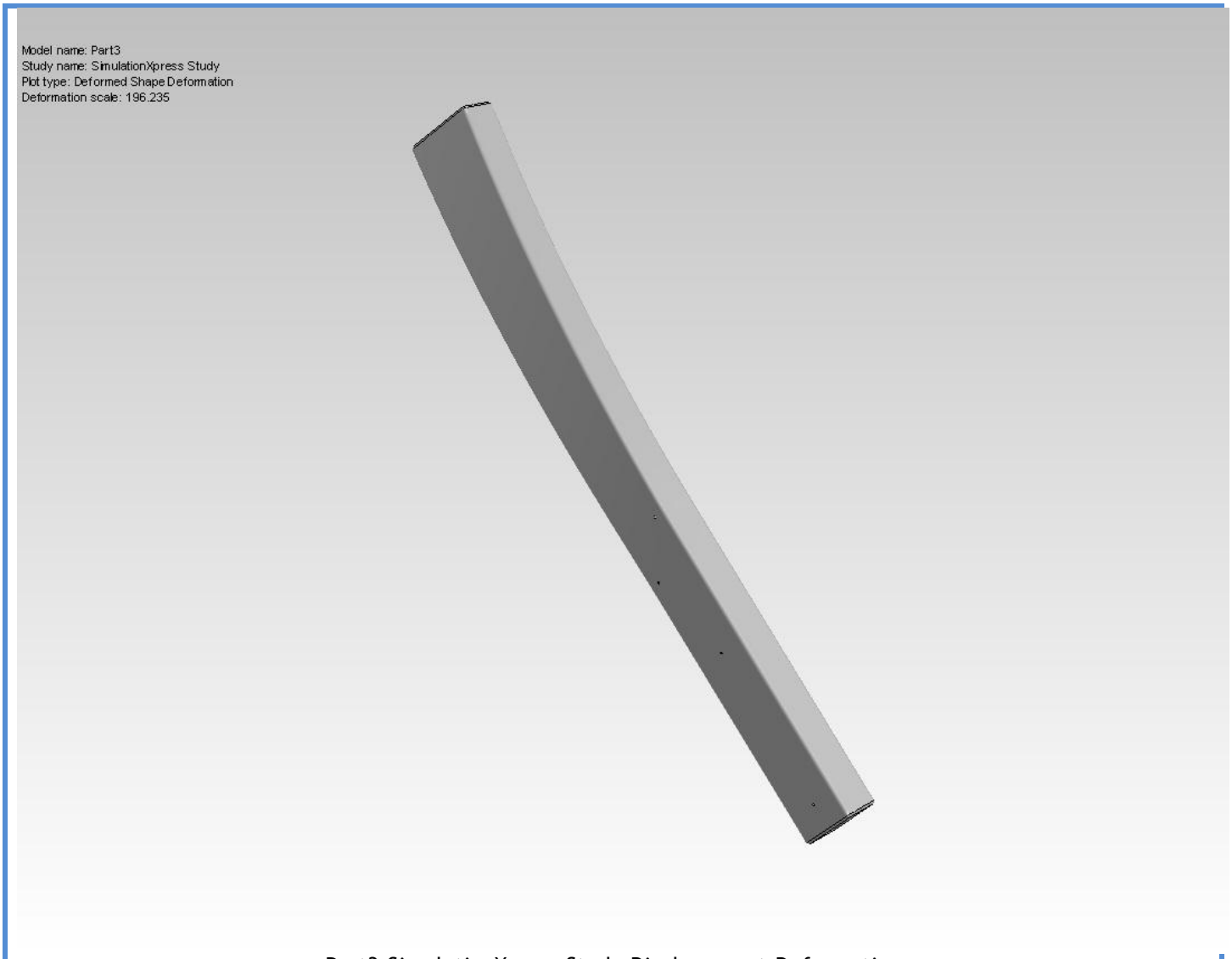
Part3-SimulationXpress Study-Stress-Stress

Name	Type	Min	Max
Displacement	URES: Resultant Displacement	0 mm Node: 1	0.354552 mm Node: 55837



Part3-SimulationXpress Study-Displacement-Displacement

Name	Type
Deformation	Deformed Shape



Part3-SimulationXpress Study-Displacement-Deformation

Conclusion