Simulation of guide-t16-cae

Date: Thursday, September 05, 2013
Designer: Solidworks
Study name: Study 1
Analysis type: Static

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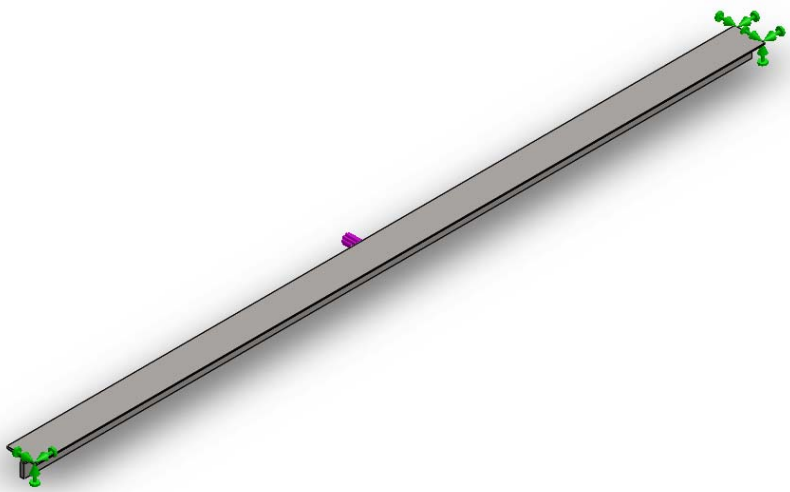
Description

No Data

Assumptions

Model Information



Model name: guide-t16-cae
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Cut-Extrude1 	Solid Body	**Mass:52.8616 kg** **Volume:0.00677713 m^3** **Density:7800 kg/m^3** **Weight:518.044 N**	**F:\MAIN\work\AKHLAGHEI\CAE\guide-t16-cae.SLDPRT** Sep 05 22:41:44 2013

Study Properties

Study name	Study 1
Analysis type	Static
Mesh type	Solid Mesh
Thermal Effect:	On
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SolidWorks Flow Simulation	Off
Solver type	FFEPlus
Inplane Effect:	Off
Soft Spring:	Off
Inertial Relief:	Off
Incompatible bonding options	Automatic
Large displacement	Off
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SolidWorks document (F:\MAIN\work\AKHLAGHEI\CAE)

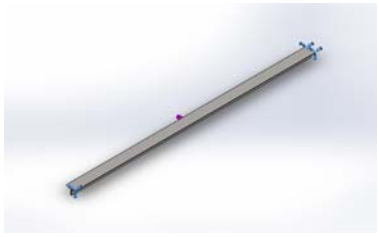
Units

Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m^2

Material Properties

Model Reference	Properties	Components
	**Name:** Plain Carbon Steel **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 2.20594e+008 N/m^2 **Tensile strength:** 3.99826e+008 N/m^2 **Elastic modulus:** 2.1e+011 N/m^2 **Poisson's ratio:** 0.28 **Mass density:** 7800 kg/m^3 **Shear modulus:** 7.9e+010 N/m^2 **Thermal expansion coefficient:** 1.3e-005 /Kelvin	SolidBody 1(Cut-Extrude1)(guide-t16-cae)
Curve Data:N/A		

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		**Entities:** 2 edge(s) **Type:** Fixed Geometry

Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	-9809.03	-1.77039	5.75195	9809.03
Reaction Moment(N·m)	0	0	0	0

Load name	Load Image	Load Details
Force-1		**Entities:** 1 face(s) **Type:** Apply normal force **Value:** 10000 N

Connector Definitions

No Data

Contact Information

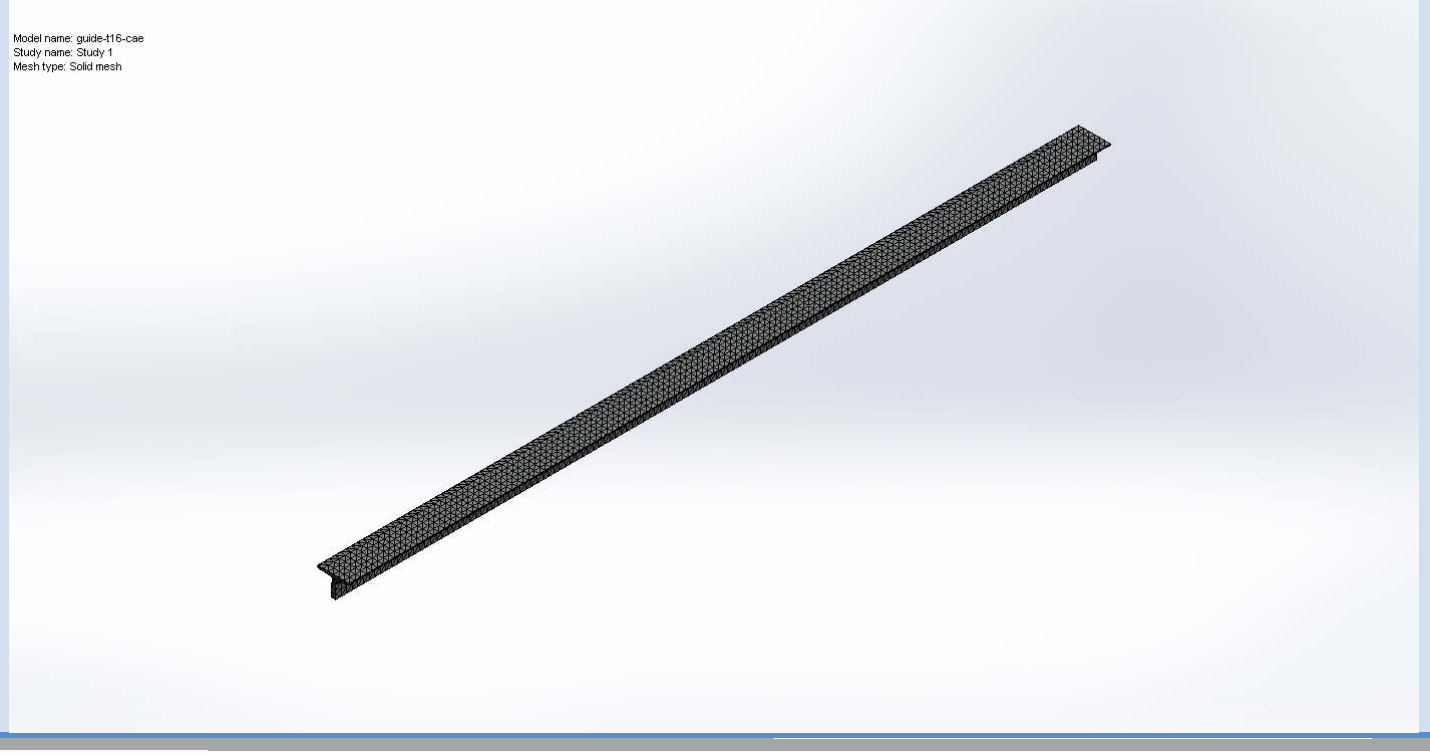
No Data

Mesh Information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points	4 Points
Element Size	22.1867 mm
Tolerance	1.10934 mm
Mesh Quality	High

Mesh Information - Details

Total Nodes	28102
Total Elements	14935
Maximum Aspect Ratio	24.737
% of elements with Aspect Ratio < 3	45.5
% of elements with Aspect Ratio > 10	6.95
% of distorted elements(Jacobian)	0
Time to complete mesh(hh;mm;ss):	00:00:07
Computer name:	SAEID-PC



Sensor Details

No Data

Resultant Forces

Reaction Forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-9809.03	-1.77039	5.75195	9809.03

Reaction Moments

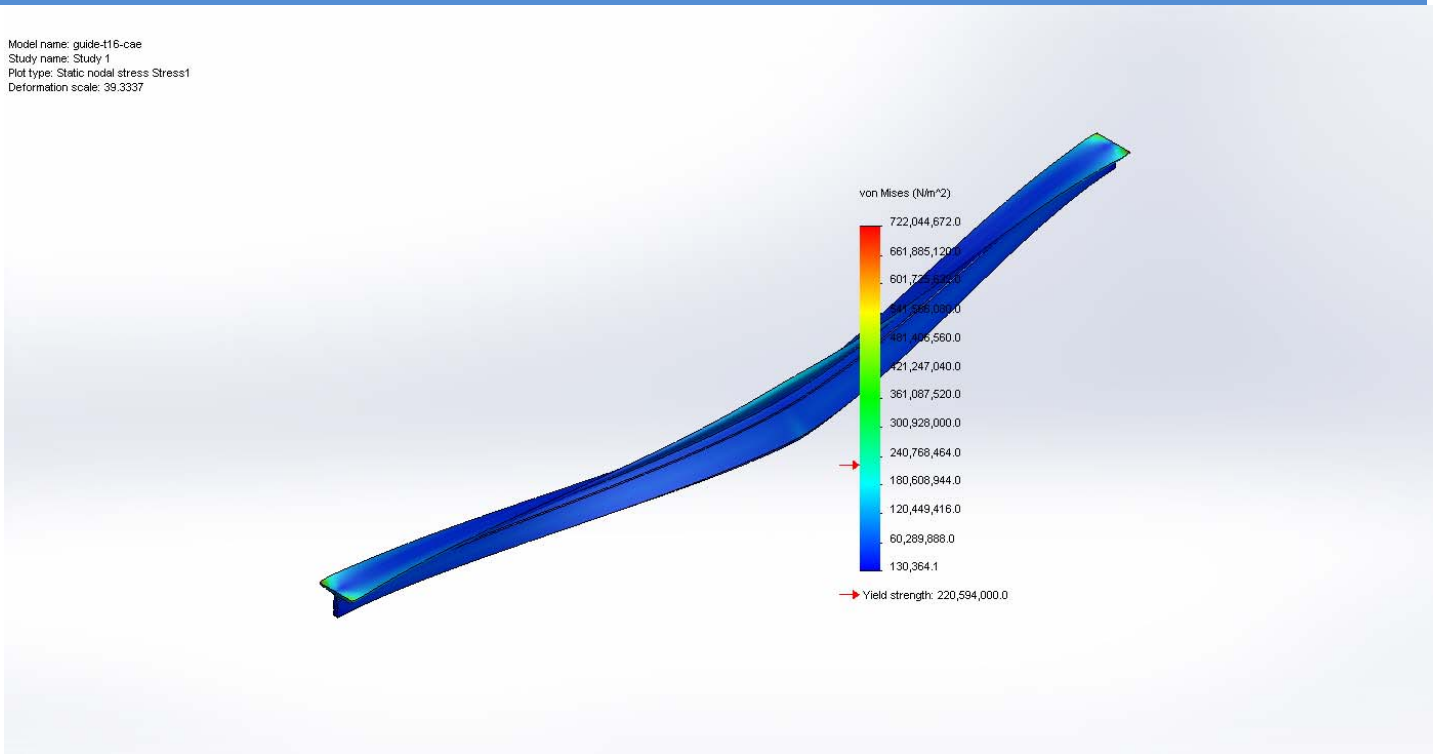
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N·m	0	0	0	0

Beams

No Data

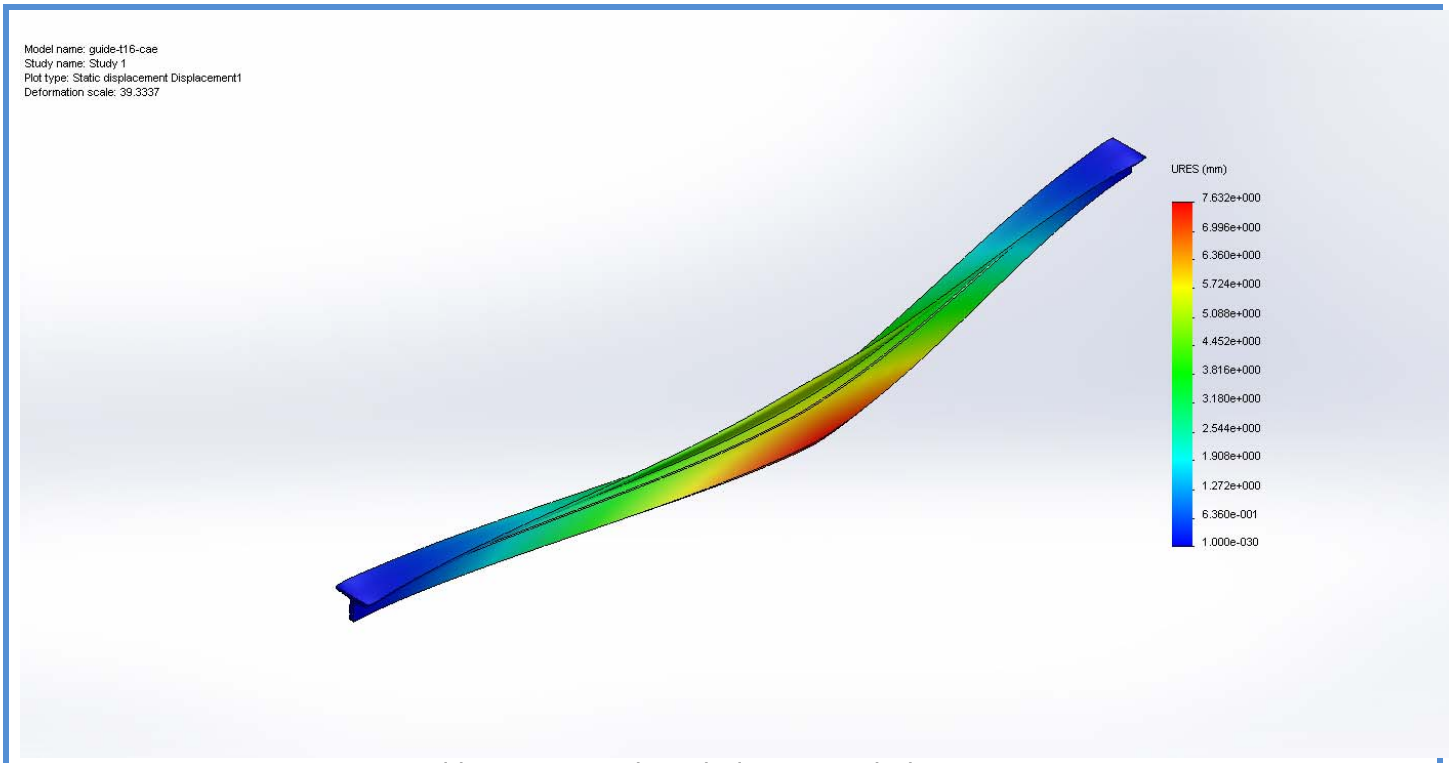
Study Results

Name	Type	Min	Max
Stress1	VON: von Mises Stress	130364 N/m^2 Node: 4801	7.22045e+008 N/m^2 Node: 2347



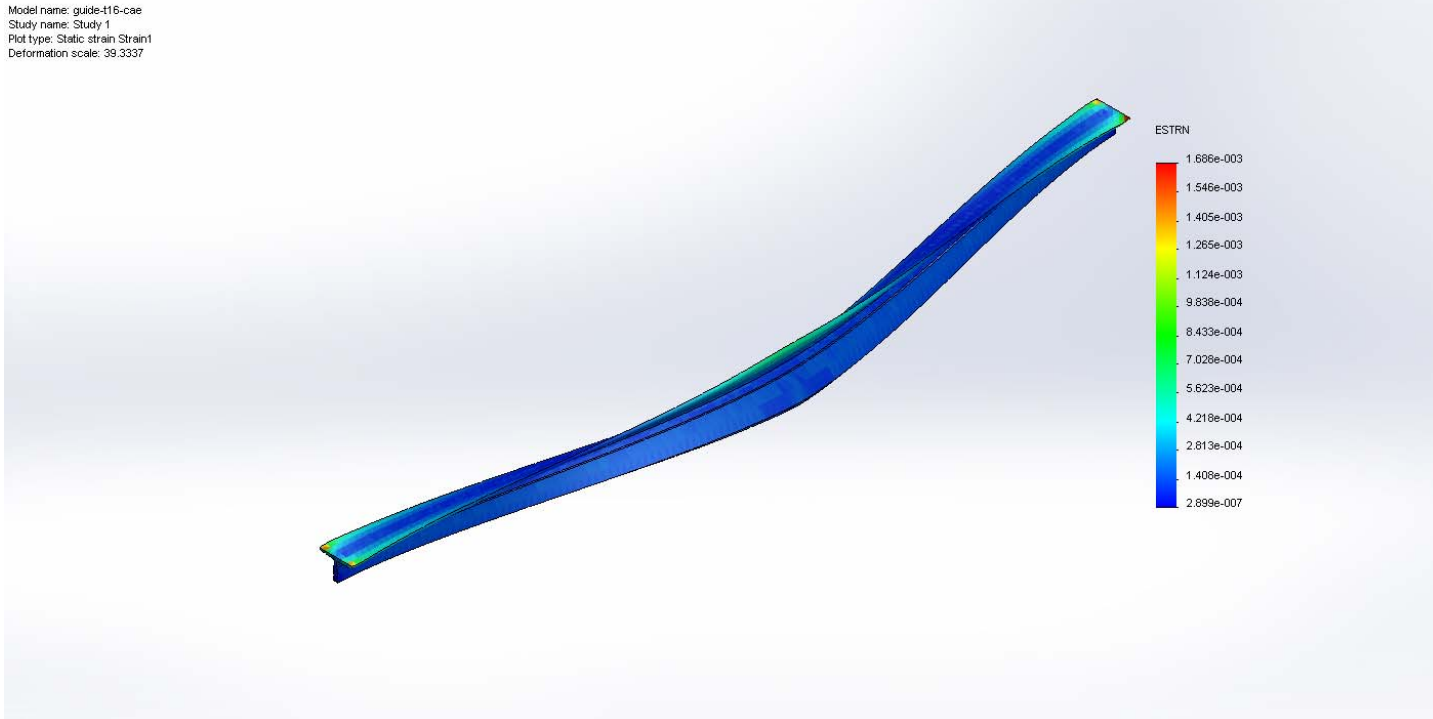
guide-t16-cae-Study 1-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0 mm Node: 2347	7.6319 mm Node: 628



guide-t16-cae-Study 1-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	2.89928e-007 Element: 3416	0.00168629 Element: 2139



guide-t16-cae-Study 1-Strain-Strain1

Name	Type
Displacement1{1}	Deformed Shape

guide-t16-cae-Study 1-Displacement-Displacement1{1}

Conclusion