

Description
No Data

Simulation of Lab5-b22me052

Date: 15 February 2025
Designer: Solidworks
Study name: Fatigue 1
Analysis type: Fatigue(Constant Amplitude)

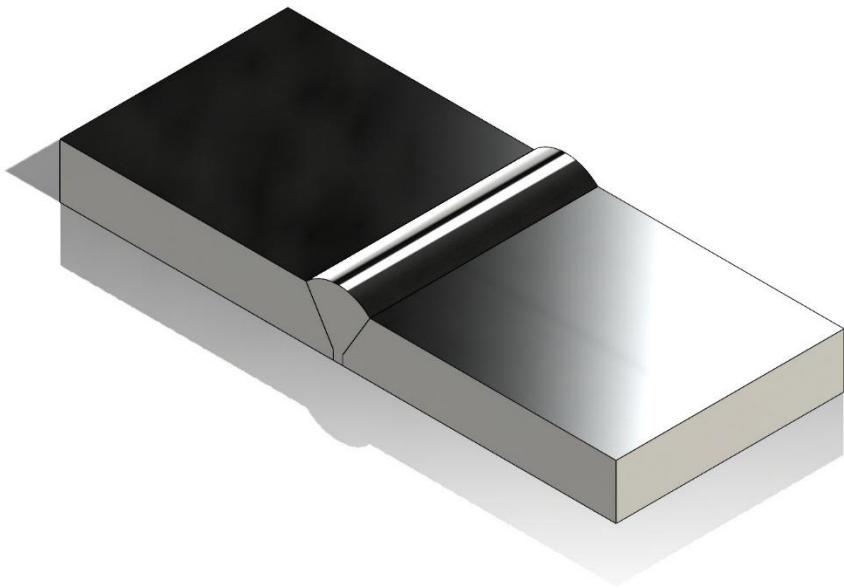
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Assumptions

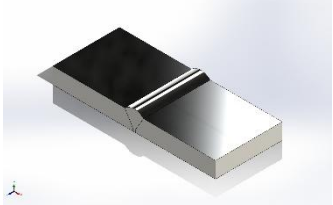
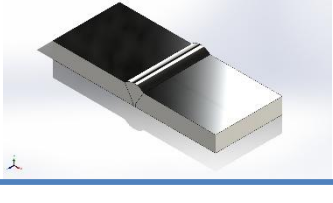
Model Information



Model name: Lab5-b22me052
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
<div>Boss-Extrude2</div>	Solid Body	Mass:0.0435044 kg Volume:5.57749e-06 m^3 Density:7,800 kg/m^3 Weight:0.426343 N	C:\Users\pushk\Documents\DME-Lab\Lab5-buttweld_b22me052.SLD PRT Feb 15 15:42:14 2025

<p>Cut-Extrude1</p> 	Solid Body	<p>Mass:0.2691 kg Volume:3.45e-05 m³ Density:7,800 kg/m³ Weight:2.63718 N</p>	<p>C:\Users\pushk\Document s\DME-Lab\Lab5- leftweld_b22me052.SLDP RT Feb 15 15:42:13 2025</p>
<p>Cut-Extrude1</p> 	Solid Body	<p>Mass:0.2691 kg Volume:3.45e-05 m³ Density:7,800 kg/m³ Weight:2.63718 N</p>	<p>C:\Users\pushk\Document s\DME-Lab\Lab5- rightweld_b22me052.SL DPRT Feb 15 15:42:11 2025</p>

Study Properties

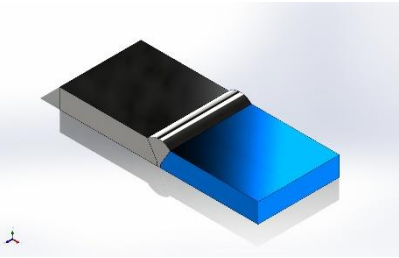
Study name	Fatigue 1
Analysis type	Fatigue(Constant Amplitude)
Event Interaction	Random
Computing alternating stress using	Stress intensity (P1-P3)
Shell face	Top Face
Mean stress correction	None
Fatigue strength reduction factor	1
Infinite life	Off
Result folder	SOLIDWORKS document (C:\Users\pushk\Documents\DME-Lab)

Units

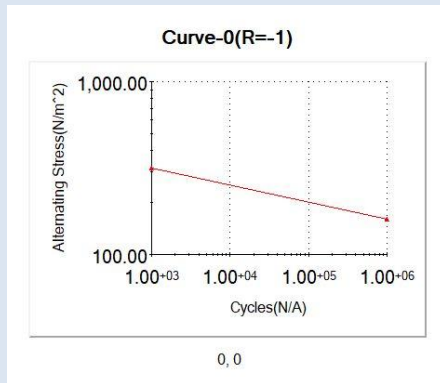
Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m ²



Material Properties

Model Reference	Properties	Components
	Name: Plain Carbon Steel Model type: Linear Elastic Isotropic Default failure criterion: Max von Mises Stress	SolidBody 1(Boss-Extrude2)(Lab5-buttweld_b22me052-1), SolidBody 1(Cut-Extrude1)(Lab5-leftweld_b22me052-1), SolidBody 1(Cut-Extrude1)(Lab5-rightweld_b22me052-1)

Curve Data:



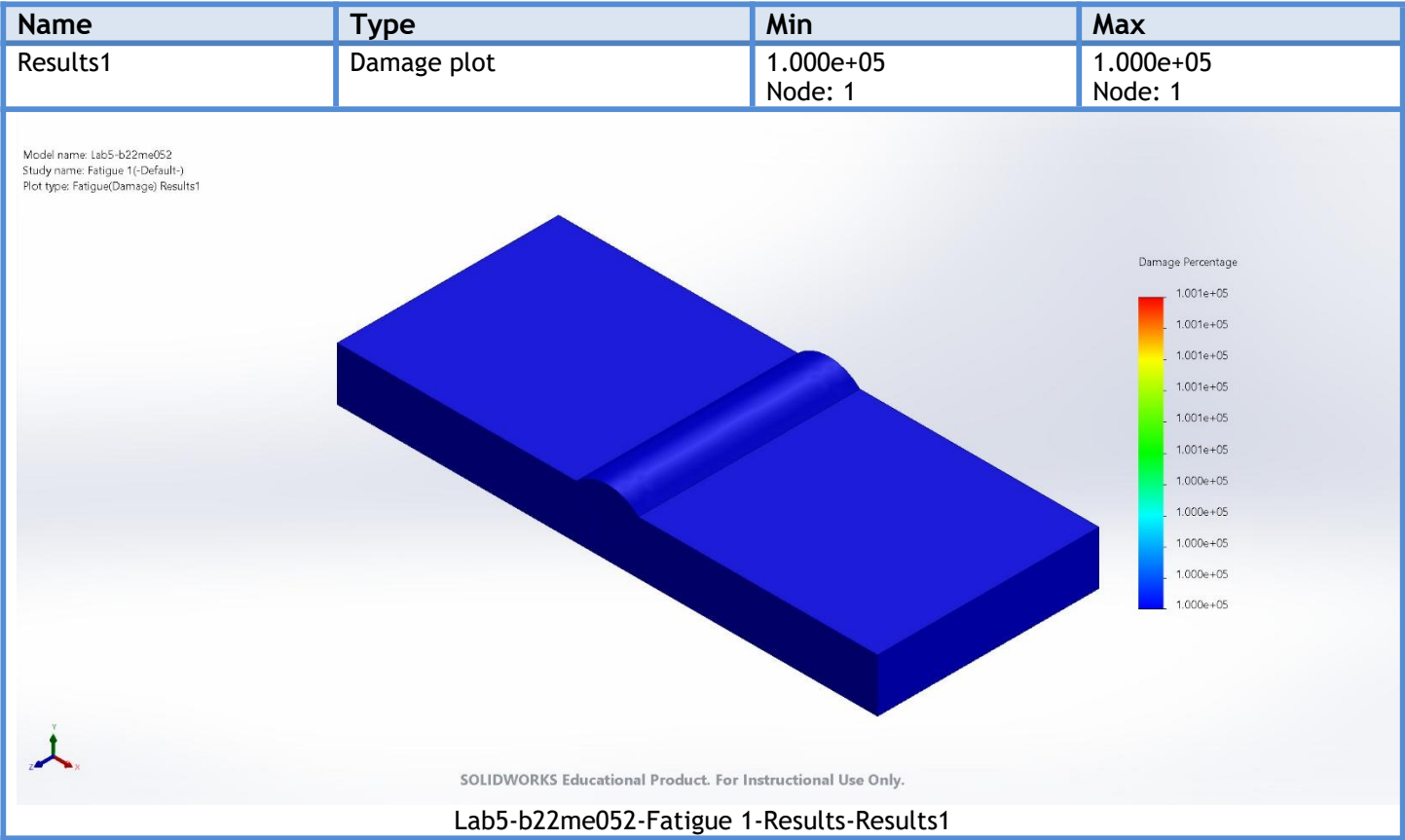
Curve-0(R=-1)

Loading Options

Event Name	No. of cycles	Loading Type	Study Association		
Event-1	1000000	Fully Reversed (LR=-1)	Study name	Scale Factor	Step
			Static 1	1	0

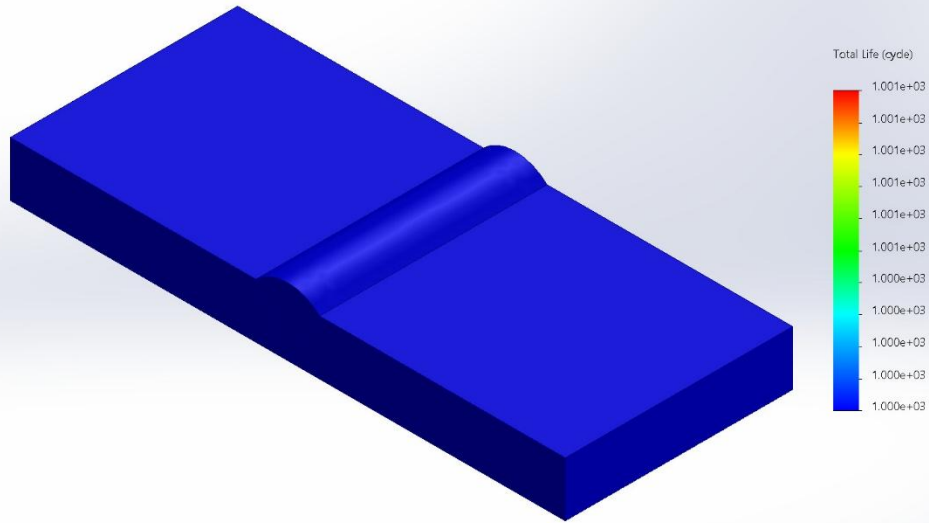


Study Results



Name	Type	Min	Max
Results2	Life plot	1.000e+03cycle Node: 1	1.000e+03cycle Node: 1

Model name: Lab5-b22me052
Study name: Fatigue 1-(Default-)
Plot type: Fatigue(Life) Results2

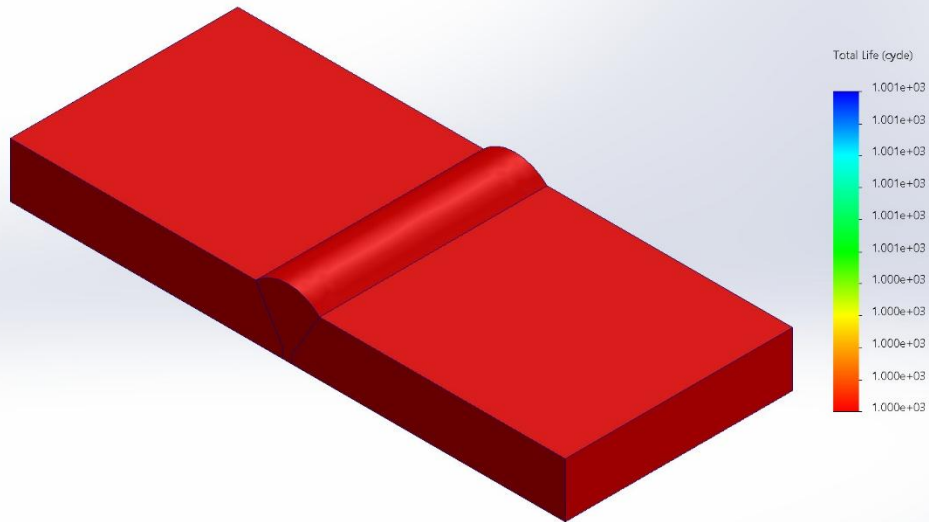


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Lab5-b22me052-Fatigue 1-Results-Results2

Name	Type	Min	Max
Results3	Life plot	1.000e+03cycle Node: 1	1.000e+03cycle Node: 1

Model name: Lab5-b22me052
Study name: Fatigue 1-(Default-)
Plot type: Fatigue(Life) Results3



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Lab5-b22me052-Fatigue 1-Results-Results3



Conclusion

