

Description
No Data

Simulation of Part1

Date: 16 March 2025
Designer: Solidworks
Study name: Fatigue 1
Analysis type: Fatigue(Constant Amplitude)

Table of Contents

Description1

Assumptions 2

Model Information2

Study Properties 3

Units 3

Material Properties4

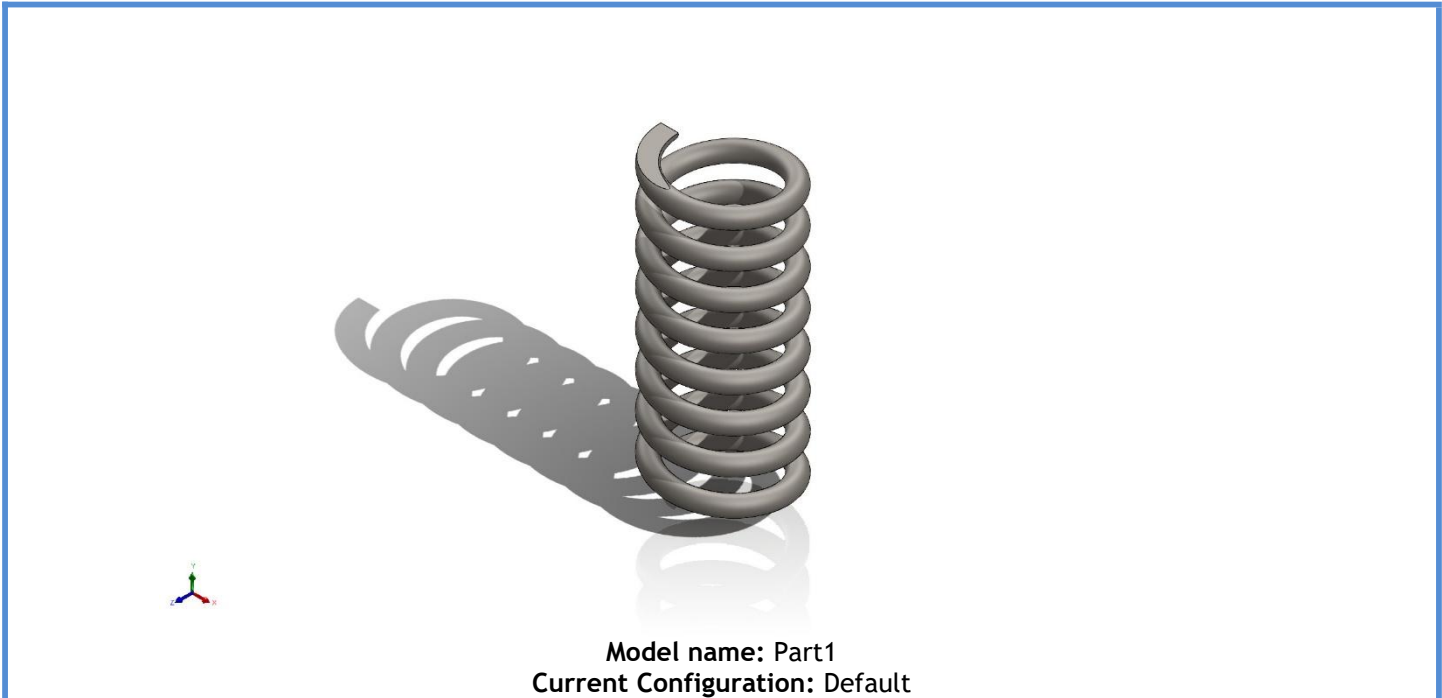
Loading Options4


Study Results 5

Conclusion 6

Assumptions

Model Information



| Solid Bodies | | | |
|---|------------|--|-----------------------------|
| Document Name and Reference | Treated As | Volumetric Properties | Document Path/Date Modified |
| <div>Cut-Extrude2</div>  | Solid Body | Mass:0.0329663 kg Volume:4.19951e-06 m^3 Density:7,850.02 kg/m^3 Weight:0.32307 N | |

Study Properties

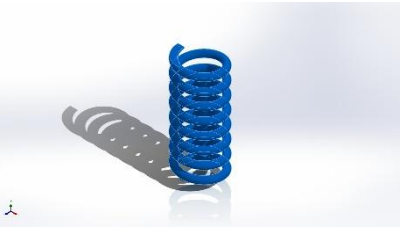
| | |
|------------------------------------|--|
| Study name | Fatigue 1 |
| Analysis type | Fatigue(Constant Amplitude) |
| Event Interaction | Random |
| Computing alternating stress using | Stress intensity (P1-P3) |
| Shell face | Top Face |
| Mean stress correction | None |
| Fatigue strength reduction factor | 1 |
| Infinite life | Off |
| Result folder | SOLIDWORKS document (c:\users\pushk\appdata\local\temp) |

Units

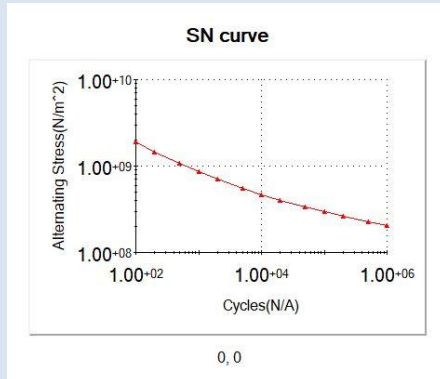
| | |
|---------------------|------------------|
| Unit system: | SI (MKS) |
| Length/Displacement | mm |
| Temperature | Kelvin |
| Angular velocity | Rad/sec |
| Pressure/Stress | N/m ² |



Material Properties

| Model Reference | Properties | Components |
|---|---|----------------------------------|
|  | Name: AISI 1045 Steel, cold drawn Model type: Linear Elastic Isotropic Default failure criterion: Max von Mises Stress | SolidBody 1(Cut-Extrude2)(Part1) |

Curve Data:



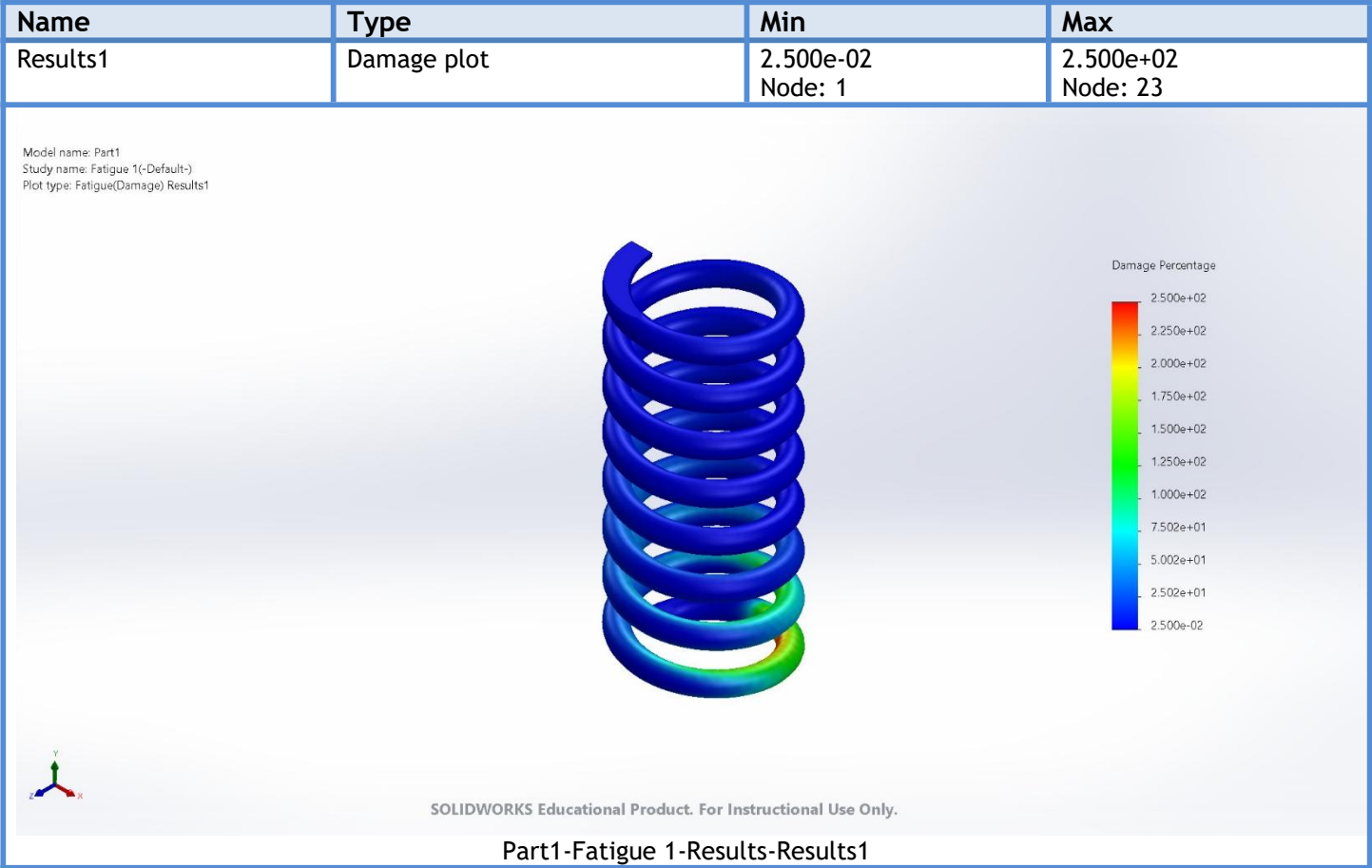
SN curve

Loading Options

| Event Name | No. of cycles | Loading Type | Study Association | | |
|------------|---------------|---------------------|-------------------|--------------|------|
| Event-1 | 250 | Loading Ratio : 0.4 | Study name | Scale Factor | Step |
| | | | Static 1 | 1 | 0 |

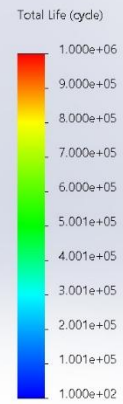
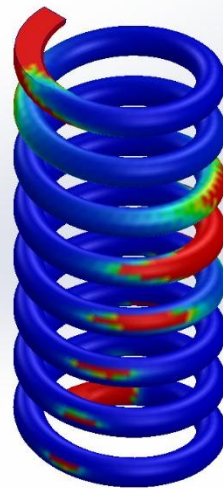


Study Results



| Name | Type | Min | Max |
|----------|-----------|----------------------------|---------------------------|
| Results2 | Life plot | 1.000e+02cycle Node: 23 | 1.000e+06cycle Node: 1 |

Model name: Part1
Study name: Fatigue 1(-Default-)
Plot type: Fatigue(Life) Results2



SOLIDWORKS Educational Product. For Instructional Use Only.

Part1-Fatigue 1-Results-Results2

Conclusion

