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|  | |  | | --- | | **Simulation of shell\_medium\_material**  **Date: 27 May 2024 Designer: Solidworks**  **Study name: Fatigue 1**  **Analysis type: Fatigue(Constant Amplitude)** | | Table of Contents  [Description 1](#_Toc167737865)  [Assumptions 2](#_Toc167737866)  [Model Information 3](#_Toc167737867)  [Study Properties 4](#_Toc167737868)  [Units 4](#_Toc167737869)  [Material Properties 5](#_Toc167737870)  [Loading Options 5](#_Toc167737871)  [Study Results 6](#_Toc167737872)  [Conclusion 7](#_Toc167737873) | |
| Description No Data |

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| Assumptions  |  |  | | --- | --- | | Original Model | Model Analyzed | |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** shell\_medium\_material**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **shell\_medium.step<1>[3]** | **Solid Body** | ****Mass:0.0102444 kg****  ****Volume:8.53698e-06 m^3****  ****Density:1,200 kg/m^3****  ****Weight:0.100395 N**** | ****C:\Users\cinta\Downloads\IER\_Shell\Medium Shell\shell\_medium\_material.SLDPRT****  **May 27 21:30:25 2024** | | **shell\_medium.step<1>[4]** | **Solid Body** | ****Mass:0.0139134 kg****  ****Volume:1.15905e-05 m^3****  ****Density:1,200.41 kg/m^3****  ****Weight:0.136351 N**** | ****C:\Users\cinta\Downloads\IER\_Shell\Medium Shell\shell\_medium\_material.SLDPRT****  **May 27 21:30:25 2024** | |

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| 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\cinta\Downloads\IER\_Shell\Medium Shell) | |

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

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **TPU** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Unknown** | | **SolidBody 2(shell\_medium.step<1>[3])(shell\_medium\_material),**  **SolidBody 3(shell\_medium.step<1>[4])(shell\_medium\_material)** | | **Curve Data:**   |  |  |  | | --- | --- | --- | |  |  |  | | **SN curve** |  |  | | | | |

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| **Loading Options**  | ****Event Name**** | ****No. of cycles**** | ****Loading Type**** | ****Study Association**** | | --- | --- | --- | --- | | **Event-1** | **3000** | Fully Reversed (LR=-1) | |  |  |  | | --- | --- | --- | | **Study name** | **Scale Factor** | **Step** | | **Static 1** | **1** | **0** | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Results1 | Damage plot | 3.000e-01  Node: 1 | 3.000e+04  Node: 5 | | **shell\_medium\_material-Fatigue 1-Results-Results1** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Results2 | Life plot | 1.000e+01cycle  Node: 5 | 1.000e+06cycle  Node: 1 | | **shell\_medium\_material-Fatigue 1-Results-Results2** | | | | |

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| Conclusion |