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|  | |  | | --- | | **Simulation of aw\_hook-test**  **Date: Wednesday, April 24, 2019 Designer: Solidworks**  **Study name: SimulationXpress Study**  **Analysis type: Static** | | Table of Contents  [Description 1](#_Toc7018671)  [Assumptions 2](#_Toc7018672)  [Model Information 2](#_Toc7018673)  [Material Properties 4](#_Toc7018674)  [Loads and Fixtures 5](#_Toc7018675)  [Mesh information 6](#_Toc7018676)  [Study Results 8](#_Toc7018677)  [Conclusion 11](#_Toc7018678) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** aw\_hook-test**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **Split Line1** | **Solid Body** | ****Mass:21.022 lb****  ****Volume:75.5697 in^3****  ****Density:0.27818 lb/in^3****  ****Weight:21.0077 lbf**** | ****C:\Users\Public\Documents\SOLIDWORKS\SOLIDWORKS 2017\tutorial\cosmosxpress\aw\_hook-test.sldprt****  **Apr 24 16:39:33 2019** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **Alloy Steel** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Max von Mises Stress** | | ****Yield strength:**** | **89984.6 psi** | | ****Tensile strength:**** | **104982 psi** | | **SolidBody 1(Split Line1)(aw\_hook-test)** | |

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| **Loads and Fixtures**  | ****Fixture name**** | ****Fixture Image**** | ****Fixture Details**** | | --- | --- | --- | | **Fixed-1** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Fixed Geometry** | |  | ****Load name**** | ****Load Image**** | ****Load Details**** | | --- | --- | --- | | **Force-1** |  | |  |  | | --- | --- | | Entities: | **2 face(s), 1 plane(s)** | | Reference: | **Plane2** | | Type: | **Apply force** | | Values: | **---, ---, -1500 lbf** | | |

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| Mesh information  |  |  | | --- | --- | | Mesh type | Solid Mesh | | Mesher Used: | Standard mesh | | Automatic Transition: | Off | | Include Mesh Auto Loops: | Off | | Jacobian points | 4 Points | | Element Size | 5.37052 mm | | Tolerance | 0.268526 mm | | Mesh Quality Plot | High |  Mesh information - Details  |  |  | | --- | --- | | Total Nodes | 76649 | | Total Elements | 51694 | | Maximum Aspect Ratio | 11.359 | | % of elements with Aspect Ratio < 3 | 99 | | % of elements with Aspect Ratio > 10 | 0.0058 | | % of distorted elements(Jacobian) | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:03 | | Computer name: | SE-A218-16 | |  | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Stress | VON: von Mises Stress | 1.653e+001psi  Node: 74686 | 1.711e+004psi  Node: 3154 | | **aw\_hook-test-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0.000e+000in  Node: 92 | 2.542e-002in  Node: 58172 | | **aw\_hook-test-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed shape | | **aw\_hook-test-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 5.259e+000  Node: 3154 | 5.443e+003  Node: 74686 | | **aw\_hook-test-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |