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|  | |  | | --- | | **Simulation of INFEED BACK, SIDE**  **Date: Saturday, October 26, 2013 Designer: Solidworks**  **Study name: SimulationXpress Study**  **Analysis type: Static** | | Table of Contents  [Description 1](#_Toc370570110)  [Assumptions 2](#_Toc370570111)  [Model Information 2](#_Toc370570112)  [Material Properties 3](#_Toc370570113)  [Loads and Fixtures 3](#_Toc370570114)  [Mesh Information 4](#_Toc370570115)  [Study Results 6](#_Toc370570116)  [Conclusion 8](#_Toc370570117) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** INFEED BACK, SIDE**  ****Current Configuration:** FEA** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **Boss-Extrude1** | **Solid Body** | ****Mass:1.20625 kg****  ****Volume:0.000855495 m^3****  ****Density:1410 kg/m^3****  ****Weight:11.8212 N**** | ****H:\ME\_450\Linear Book Scanner\Sides\INFEED BACK, SIDE.SLDPRT****  **Oct 26 16:57:24 2013** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **Delrin 2700 NC010, Low Viscosity Acetal Copolymer (SS)** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Unknown** | | ****Yield strength:**** | **6.3e+007 N/m^2** | | ****Tensile strength:**** | **4.07e+007 N/m^2** | | **SolidBody 1(Boss-Extrude1)(INFEED BACK, SIDE)** | |

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| **Loads and Fixtures**  | ****Fixture name**** | ****Fixture Image**** | ****Fixture Details**** | | --- | --- | --- | | **Fixed-1** |  | |  |  | | --- | --- | | Entities: | **5 face(s)** | | Type: | **Fixed Geometry** | |  | ****Load name**** | ****Load Image**** | ****Load Details**** | | --- | --- | --- | | **Force-1** |  | |  |  | | --- | --- | | Entities: | **1 face(s), 1 plane(s)** | | Reference: | **Plane1** | | Type: | **Apply force** | | Values: | **---, ---, -25 N** | | |

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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 | 0.477756 in | | Tolerance | 0.0238878 in | | Mesh Quality | High |  Mesh Information - Details  |  |  | | --- | --- | | Total Nodes | 16477 | | Total Elements | 8138 | | Maximum Aspect Ratio | 15.738 | | % of elements with Aspect Ratio < 3 | 68.3 | | % of elements with Aspect Ratio > 10 | 0.172 | | % of distorted elements(Jacobian) | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:03 | | Computer name: | DC3SWP37 | |  | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Stress | VON: von Mises Stress | 1209.3 N/m^2  Node: 15848 | 1.32241e+007 N/m^2  Node: 16147 | | **INFEED BACK, SIDE-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0 mm  Node: 1 | 4.74001 mm  Node: 2501 | | **INFEED BACK, SIDE-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed Shape | | **INFEED BACK, SIDE-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 4.76404  Node: 16147 | 52096.4  Node: 15848 | | **INFEED BACK, SIDE-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |