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|  | |  | | --- | | **Simulation of cylinder**  **Date: Thursday, December 13, 2012 Designer: Solidworks**  **Study name: SimulationXpress Study**  **Analysis type: Static** | | Table of Contents  [Description 1](#_Toc343203615)  [Assumptions 2](#_Toc343203616)  [Model Information 2](#_Toc343203617)  [Material Properties 3](#_Toc343203618)  [Loads and Fixtures 3](#_Toc343203619)  [Mesh Information 4](#_Toc343203620)  [Study Results 6](#_Toc343203621)  [Conclusion 8](#_Toc343203622) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** cylinder**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **Boss-Extrude1** | **Solid Body** | ****Mass:3.23175 kg****  ****Volume:0.00119694 m^3****  ****Density:2700 kg/m^3****  ****Weight:31.6711 N**** | ****C:\Users\Arko\Desktop\Tesla\HABEX Project\HABEX 2\ENV Chamber\cylinder.SLDPRT****  **Dec 13 23:08:46 2012** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **6061-T6 (SS)** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Max von Mises Stress** | | ****Yield strength:**** | **2.75e+008 N/m^2** | | ****Tensile strength:**** | **3.1e+008 N/m^2** | | **SolidBody 1(Boss-Extrude1)(cylinder)** | |

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| **Loads and Fixtures**  | ****Fixture name**** | ****Fixture Image**** | ****Fixture Details**** | | --- | --- | --- | | **Fixed-1** |  | |  |  | | --- | --- | | Entities: | **2 face(s)** | | Type: | **Fixed Geometry** | |  | ****Load name**** | ****Load Image**** | ****Load Details**** | | --- | --- | --- | | **Pressure-1** |  | |  |  | | --- | --- | | Entities: | **1 face(s)** | | Type: | **Normal to selected face** | | Value: | **14** | | Units: | **psi** | | |

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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 | 0.488471 in | | Tolerance | 0.0244236 in | | Mesh Quality | High |  Mesh Information - Details  |  |  | | --- | --- | | Total Nodes | 15029 | | Total Elements | 7419 | | Maximum Aspect Ratio | 6.3767 | | % of elements with Aspect Ratio < 3 | 97.6 | | % of elements with Aspect Ratio > 10 | 0 | | % of distorted elements(Jacobian) | 0 | | Time to complete mesh(hh;mm;ss): | 00:00:03 | | Computer name: | ARKO-PC | |  | | |

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| Study Results  | Name | Type | Min | Max | | --- | --- | --- | --- | | Stress | VON: von Mises Stress | 252071 N/m^2  Node: 1333 | 1.81689e+006 N/m^2  Node: 14971 | | **cylinder-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0 mm  Node: 1 | 0.00210212 mm  Node: 38 | | **cylinder-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed Shape | | **cylinder-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 151.358  Node: 14971 | 1090.96  Node: 1333 | | **cylinder-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |