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|  | |  | | --- | | **Simulation of bottom**  **Date: Thursday, December 13, 2012 Designer: Solidworks**  **Study name: SimulationXpress Study**  **Analysis type: Static** | | Table of Contents  [Description 1](#_Toc343204039)  [Assumptions 2](#_Toc343204040)  [Model Information 2](#_Toc343204041)  [Material Properties 3](#_Toc343204042)  [Loads and Fixtures 3](#_Toc343204043)  [Mesh Information 4](#_Toc343204044)  [Study Results 6](#_Toc343204045)  [Conclusion 8](#_Toc343204046) | |
| Description No Data |

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| Assumptions |

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| Model Information  |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | |  |   ****Model name:** bottom**  ****Current Configuration:** Default** | | | | | ****Solid Bodies**** | | | | | ****Document Name and Reference**** | ****Treated As**** | ****Volumetric Properties**** | ****Document Path/Date Modified**** | | **Boss-Extrude2** | **Solid Body** | ****Mass:1.66015 kg****  ****Volume:0.000614871 m^3****  ****Density:2700 kg/m^3****  ****Weight:16.2695 N**** | ****C:\Users\Arko\Desktop\Tesla\HABEX Project\HABEX 2\ENV Chamber\bottom.SLDPRT****  **Dec 13 23:17:01 2012** | |

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| Material Properties  |  |  |  | | --- | --- | --- | | ****Model Reference**** | ****Properties**** | ****Components**** | |  | |  |  | | --- | --- | | ****Name:**** | **6061 Alloy** | | ****Model type:**** | **Linear Elastic Isotropic** | | ****Default failure criterion:**** | **Max von Mises Stress** | | ****Yield strength:**** | **5.51485e+007 N/m^2** | | ****Tensile strength:**** | **1.24084e+008 N/m^2** | | **SolidBody 1(Boss-Extrude2)(bottom)** | |

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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**** | | --- | --- | --- | | **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 | 0.353369 in | | Tolerance | 0.0176684 in | | Mesh Quality | High |  Mesh Information - Details  |  |  | | --- | --- | | Total Nodes | 16443 | | Total Elements | 8301 | | Maximum Aspect Ratio | 6.5161 | | % of elements with Aspect Ratio < 3 | 92.6 | | % 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 | 3133.15 N/m^2  Node: 11771 | 1.3092e+007 N/m^2  Node: 1160 | | **bottom-SimulationXpress Study-Stress-Stress** | | | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Displacement | URES: Resultant Displacement | 0 mm  Node: 1 | 0.0923336 mm  Node: 8617 | | **bottom-SimulationXpress Study-Displacement-Displacement** | | | |  | Name | Type | | --- | --- | | Deformation | Deformed Shape | | **bottom-SimulationXpress Study-Displacement-Deformation** | |  | Name | Type | Min | Max | | --- | --- | --- | --- | | Factor of Safety | Max von Mises Stress | 4.2124  Node: 1160 | 17601.6  Node: 11771 | | **bottom-SimulationXpress Study-Factor of Safety-Factor of Safety** | | | | |

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| Conclusion |