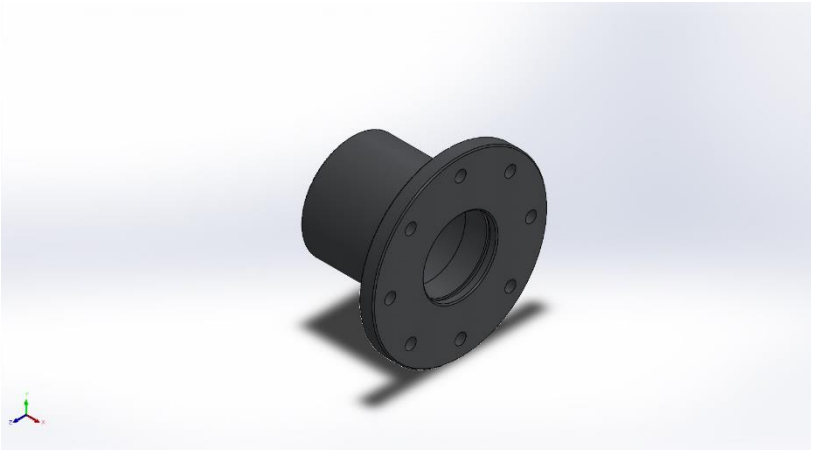


Simulation of Frame_small_stand_2

Date: Freitag, 2. Mai 2025
Designer: Solidworks
Study name: Statisch 1
Analysis type: Static

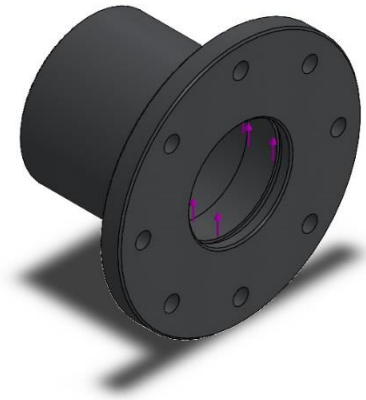
Table of Contents

Description

No Data

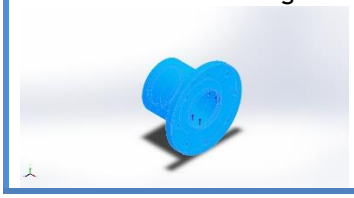
Assumptions

Model Information



Model name: Frame_small_stand_2
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Schnitt-Linear austragen1 	Solid Body	**Mass:0,356928 kg** **Volume:4,5608e-05 m^3** **Density:7.826 kg/m^3** **Weight:3,4979 N**	**T:\Аспирантура\Стенд_026\Frame_small_stand_2.SLDPRT**

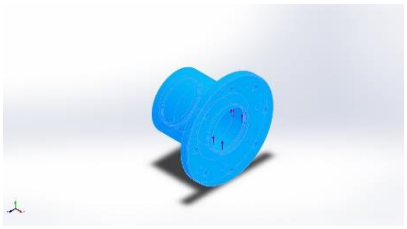
Study Properties

Study name	Statisch 1
Analysis type	Static
Mesh type	Solid Mesh
Thermal Effect:	On
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SOLIDWORKS Flow Simulation	Off
Solver type	FFEPlus
Inplane Effect:	Off
Soft Spring:	Off
Inertial Relief:	Off
Incompatible bonding options	Automatic
Large displacement	Off
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SOLIDWORKS document (T:\Аспирантура\Стенд_020)

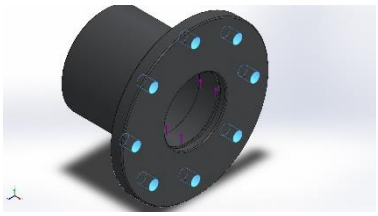
Units

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

Material Properties

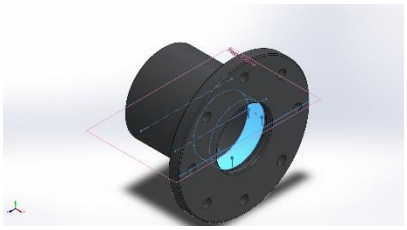
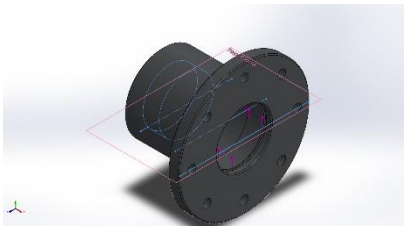
Model Reference	Properties		Components
	**Name:**	Сталь 45 ГОСТ 1050-88	Volumenkörper 1(Schnitt-Linear austragen1)(Frame_small_stand_2)
	Model type:	Linear Elastic Isotropic	
	Default failure criterion:	Unknown	
	Yield strength:	8,3e+08 N/m^2	
	Tensile strength:	9,8e+08 N/m^2	
	Elastic modulus:	2,04e+11 N/m^2	
	Poisson's ratio:	0,3	
	Mass density:	7.826 kg/m^3	
	Shear modulus:	7,8e+10 N/m^2	
	Thermal expansion coefficient:	1,2e-05 /Kelvin	
Curve Data:N/A			

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixiert-1		**Entities:** 8 face(s) **Type:** Fixed Geometry

Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	-0,0225483	154,015	0,00383842	154,015
Reaction Moment(N.m)	0	0	0	0

Load name	Load Image	Load Details
Kraft-1		**Entities:** 1 face(s), 1 plane(s) **Reference:** Top Plane **Type:** Apply force **Values:** ---; ---; 120 N
Kraft-2		**Entities:** 1 face(s), 1 plane(s) **Reference:** Top Plane **Type:** Apply force **Values:** ---; ---; -.274 N

Connector Definitions

No Data

Contact Information

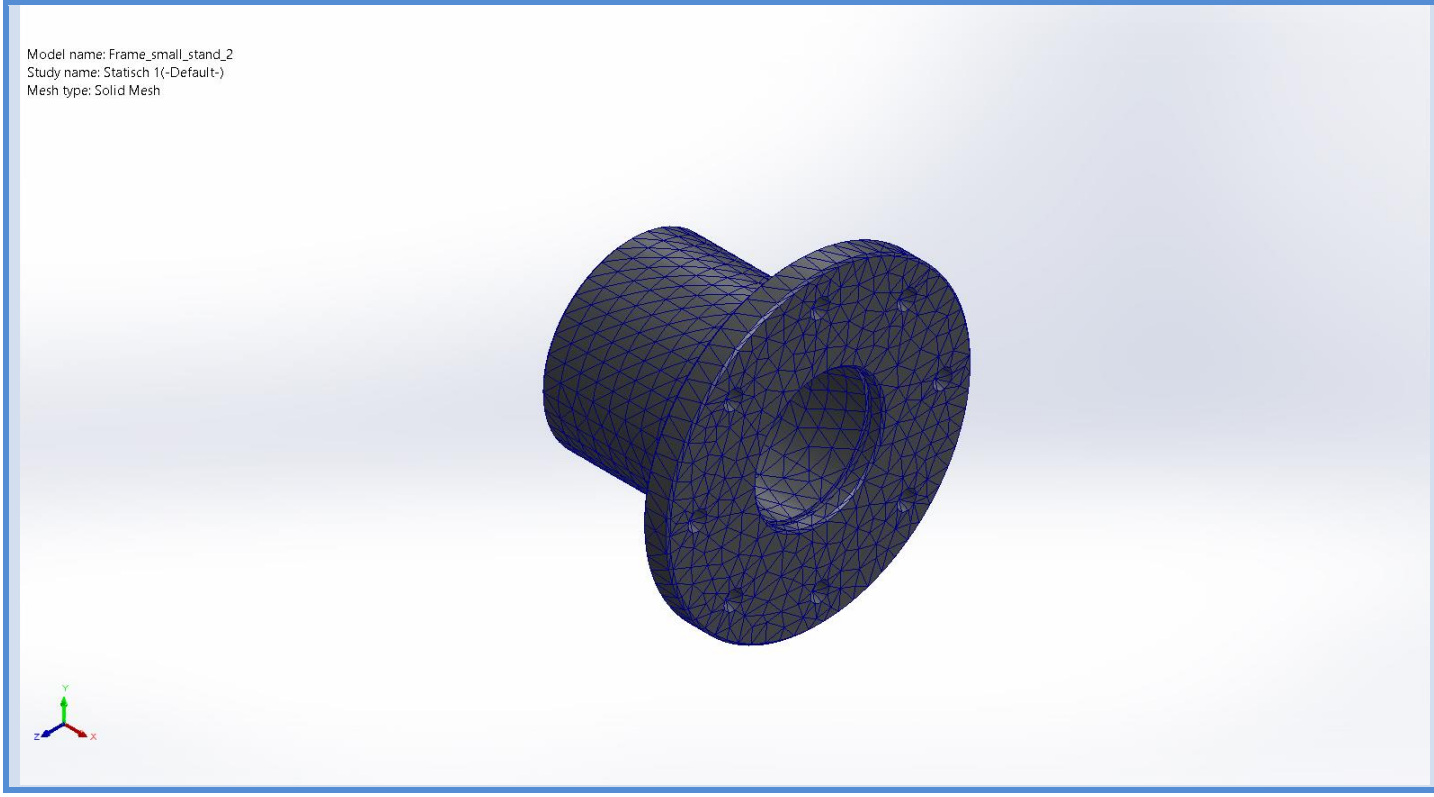
No Data

Mesh information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points for High quality mesh	4 Points
Element Size	3,67812 mm
Tolerance	0,183906 mm
Mesh Quality	High

Mesh information - Details

Total Nodes	16750
Total Elements	9746
Maximum Aspect Ratio	10,286
% of elements with Aspect Ratio < 3	84,6
Percentage of elements with Aspect Ratio > 10	0,0103
Percentage of distorted elements	0
Time to complete mesh(hh;mm;ss):	00:00:02
Computer name:	RUSLANPC



Sensor Details

No Data

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-0,0225483	154,015	0,00383842	154,015

Reaction Moments

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	0

Free body forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-0,0313616	0,0589406	-0,158171	0,171684

Free body moments

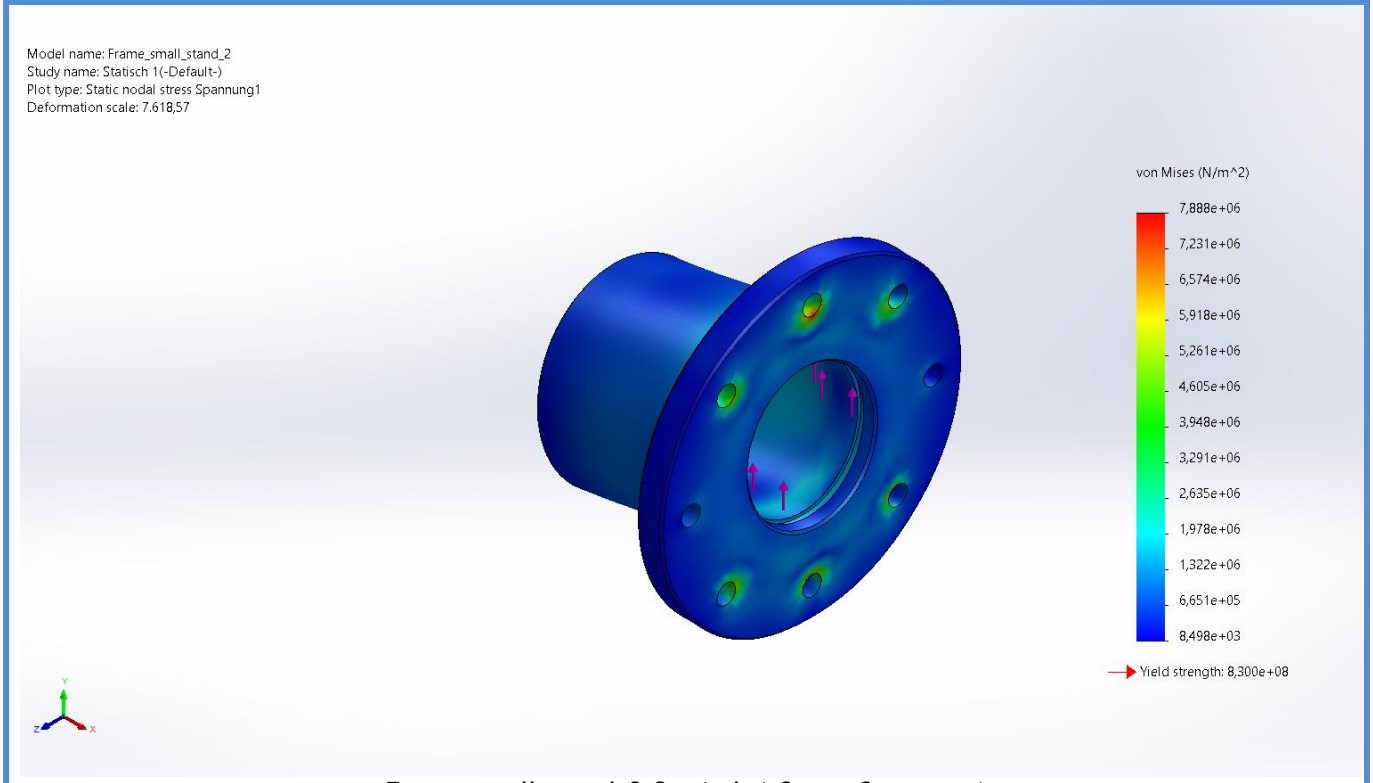
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	1e-33

Beams

No Data

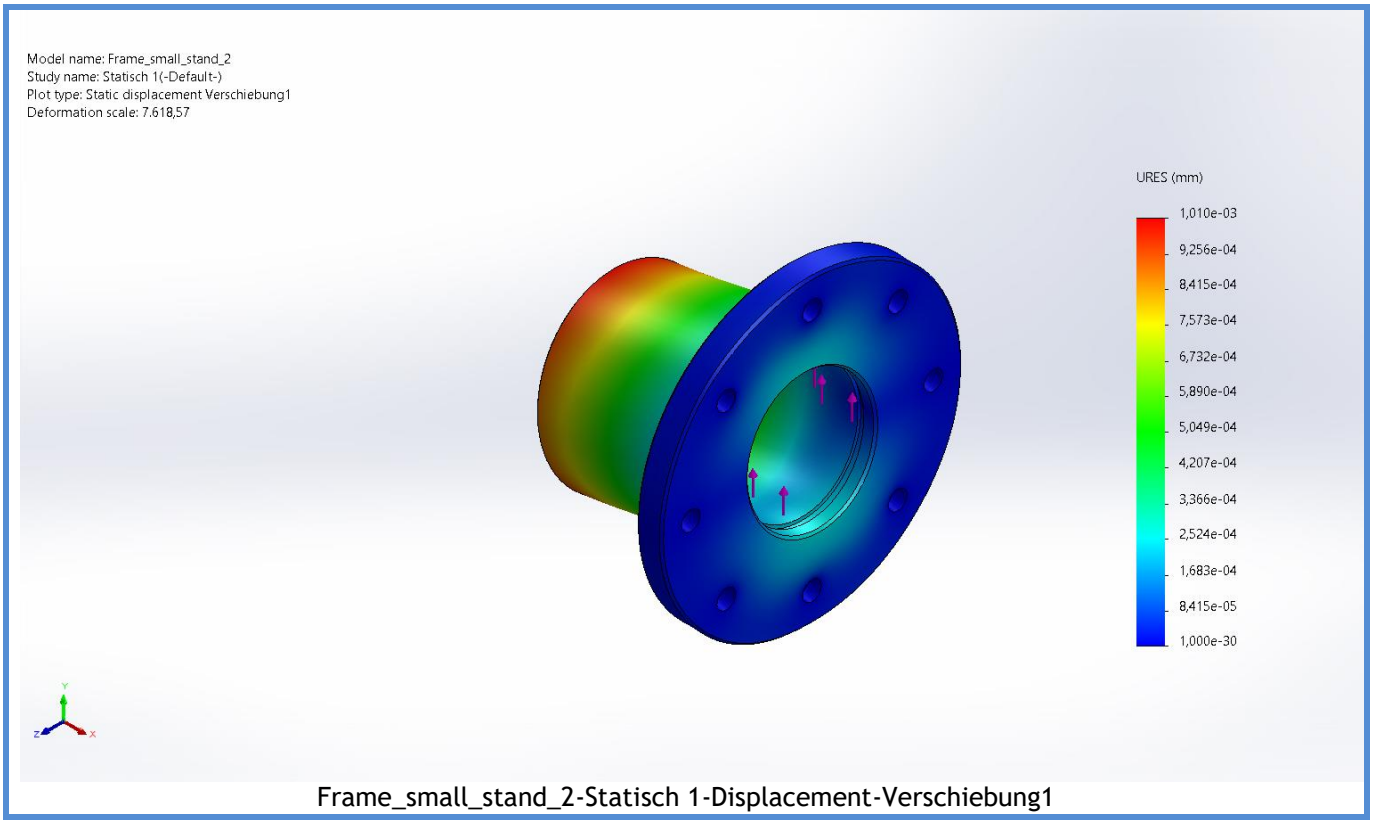
Study Results

Name	Type	Min	Max
Spannung1	VON: von Mises Stress	8,498e+03N/m^2 Node: 12339	7,888e+06N/m^2 Node: 15682



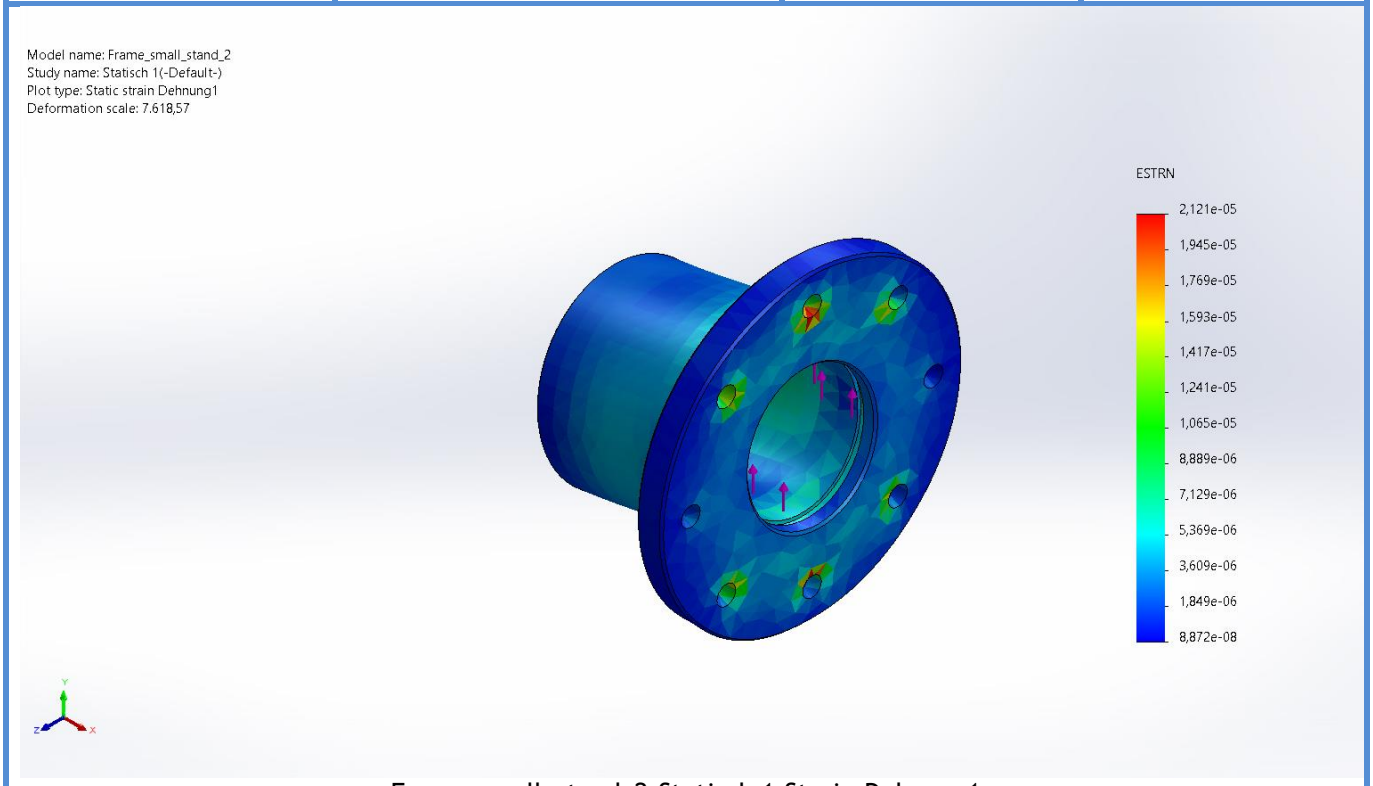
Frame_small_stand_2-Statisch 1-Stress-Spannung1

Name	Type	Min	Max
Verschiebung1	URES: Resultant Displacement	0,000e+00mm Node: 1	1,010e-03mm Node: 686



Frame_small_stand_2-Statisch 1-Displacement-Verschiebung1

Name	Type	Min	Max
Dehnung1	ESTRN: Equivalent Strain	8,872e-08 Element: 5677	2,121e-05 Element: 8104



Frame_small_stand_2-Statisch 1-Strain-Dehnung1

Conclusion