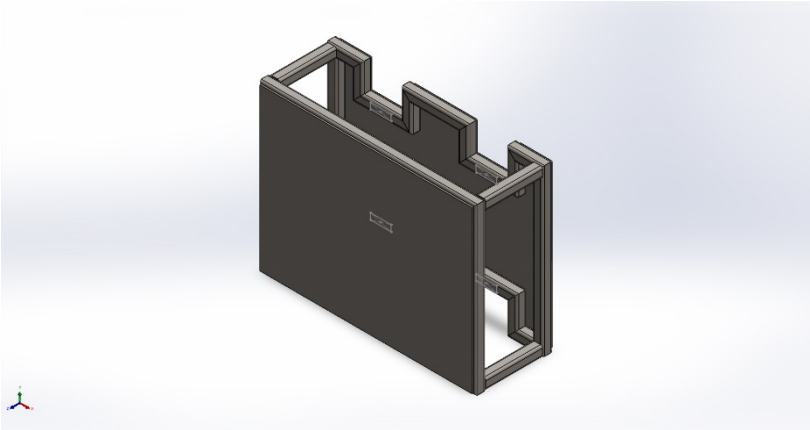


Simulation of EDR Chassis Assembly

Date: Wednesday, April 2, 2025
Designer: Omni-Directional Robot
Study name: Chassis Weight Test
Analysis type: Static

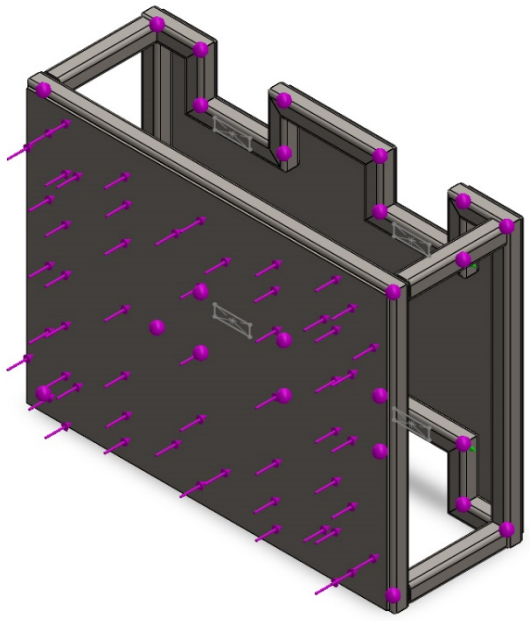
Table of Contents

Description

No Data

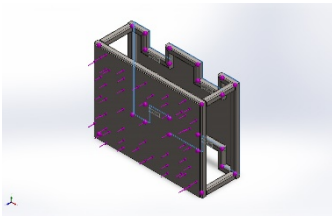
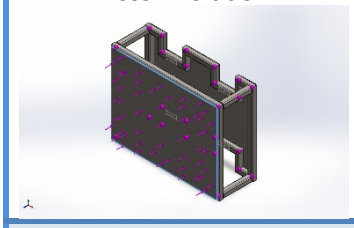
Assumptions

Model Information



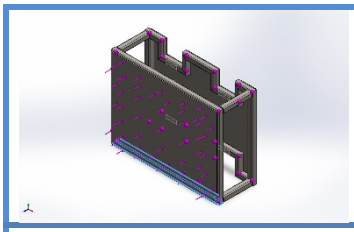
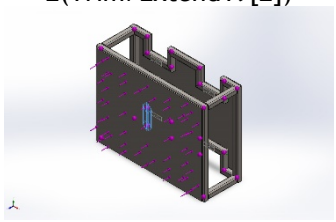
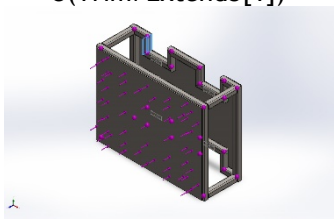
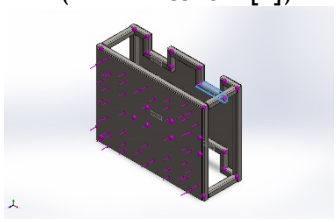
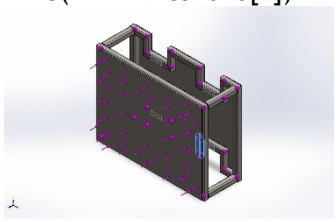
Model name: EDR Chassis Assembly
Current Configuration: Default

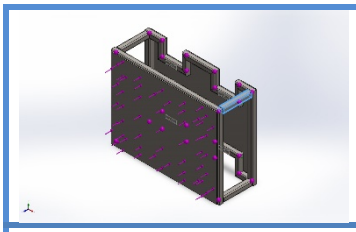
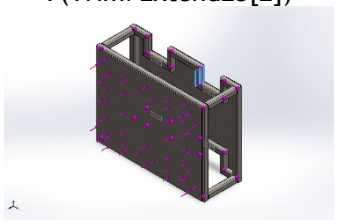
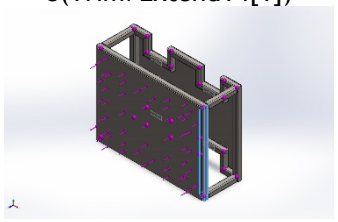
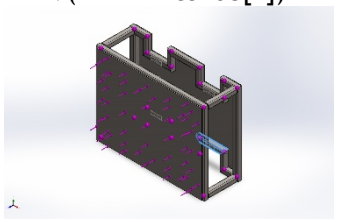
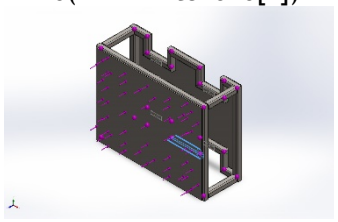
Solid Bodies

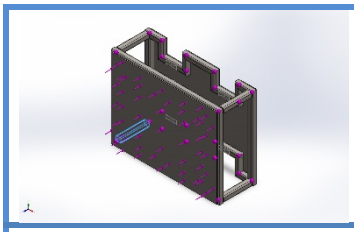
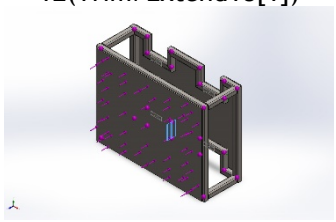
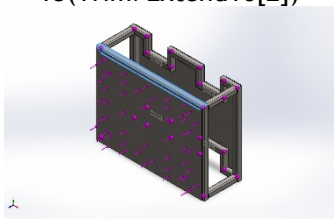
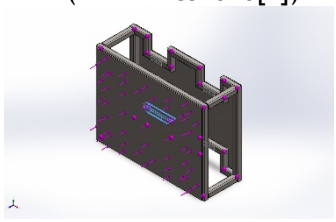
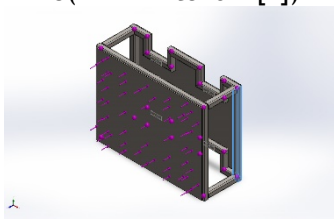
Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Boss-Extrude1 	Solid Body	**Mass:2.55242 kg** **Volume:0.000324818 m^3** **Density:7,858 kg/m^3** **Weight:25.0137 N**	**C:\Users\USER\Desktop\Chassis Design\Bottom Plate.SLDPRT** Apr 1 23:50:49 2025
Boss-Extrude1 	Solid Body	**Mass:3.0303 kg** **Volume:0.000385632 m^3** **Density:7,858 kg/m^3** **Weight:29.6969 N**	**C:\Users\USER\Desktop\Chassis Design\Top Plate.SLDPRT** Apr 1 23:50:49 2025

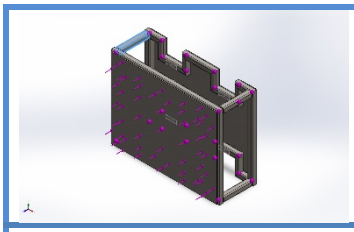
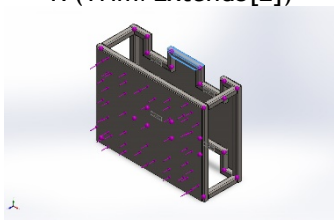
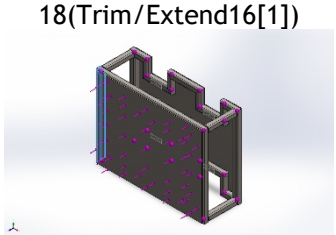
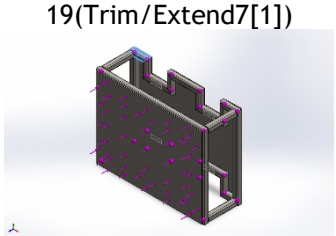
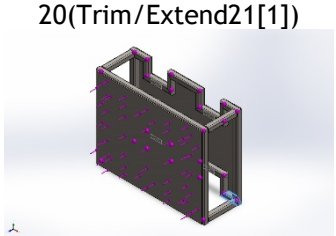
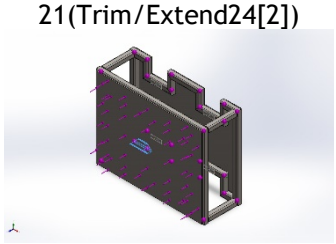
Beam Bodies:

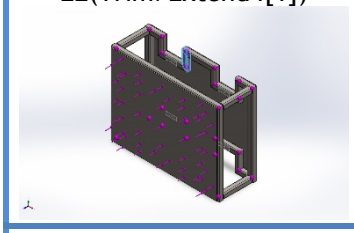
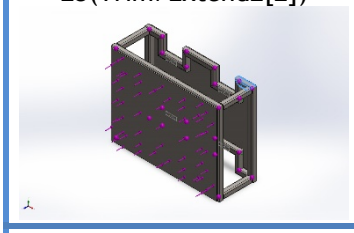
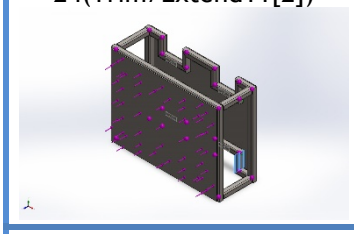
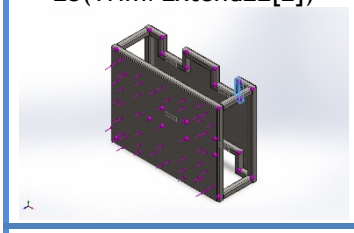
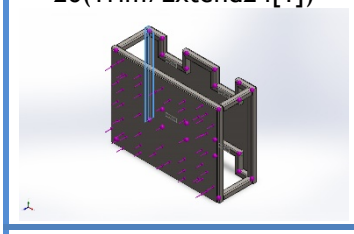
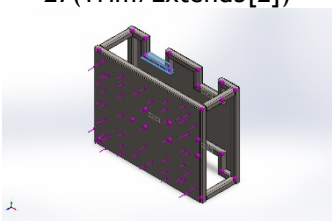
Document Name and Reference	Formulation	Properties	Document Path/Date Modified
SolidBody 1(Trim/Extend14[2])	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube** **Section Area: 0.000133699m^2** **Length:400mm** **Volume:5.34806e-05m^3**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025

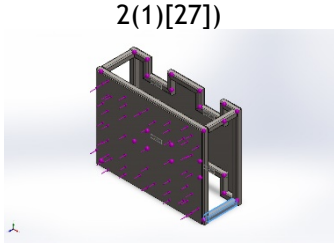
		**Mass Density:7,858kg/m^3 Mass:0.420251kg Weight:4.11846N**	
SolidBody 2(Trim/Extend19[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:60.0036mm Volume:8.02257e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0630413kg Weight:0.617805N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 3(Trim/Extend5[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:55mm Volume:7.35358e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0577845kg Weight:0.566288N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 4(Trim/Extend22[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:95mm Volume:1.27016e-05m^3 Mass Density:7,858kg/m^3 Mass:0.0998095kg Weight:0.978133N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 5(Trim/Extend20[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:55mm Volume:7.35358e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0577845kg Weight:0.566288N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 6(Square tube - configured 20 X 20 X 2(1)[24])	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47069e-05m^3 Mass Density:7,858kg/m^3**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025

		**Mass:0.115567kg Weight:1.13256N**	
SolidBody 7(Trim/Extend23[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:55mm Volume:7.35358e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0577845kg Weight:0.566288N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 8(Trim/Extend14[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:300mm Volume:4.01105e-05m^3 Mass Density:7,858kg/m^3 Mass:0.315188kg Weight:3.08884N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 9(Trim/Extend8[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:95mm Volume:1.27016e-05m^3 Mass Density:7,858kg/m^3 Mass:0.0998095kg Weight:0.978133N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 10(Trim/Extend20[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47072e-05m^3 Mass Density:7,858kg/m^3 Mass:0.115569kg Weight:1.13258N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 11(Square tube - configured 20 X 20 X 2(1)[26])	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47069e-05m^3 Mass Density:7,858kg/m^3**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025

		**Mass:0.115567kg Weight:1.13256N**	
SolidBody 12(Trim/Extend18[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:55mm Volume:7.35358e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0577845kg Weight:0.566288N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 13(Trim/Extend16[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:400mm Volume:5.34806e-05m^3 Mass Density:7,858kg/m^3 Mass:0.420251kg Weight:4.11846N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 14(Trim/Extend10[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:95mm Volume:1.27016e-05m^3 Mass Density:7,858kg/m^3 Mass:0.0998095kg Weight:0.978133N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 15(Trim/Extend21[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:300mm Volume:4.01105e-05m^3 Mass Density:7,858kg/m^3 Mass:0.315188kg Weight:3.08884N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 16(Square tube - configured 20 X 20 X 2(1)[25])	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47069e-05m^3 Mass Density:7,858kg/m^3**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025

		**Mass:0.115567kg Weight:1.13256N**	
SolidBody 17(Trim/Extend3[2]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47072e-05m^3 Mass Density:7,858kg/m^3 Mass:0.115569kg Weight:1.13258N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 18(Trim/Extend16[1]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:300mm Volume:4.01105e-05m^3 Mass Density:7,858kg/m^3 Mass:0.315188kg Weight:3.08884N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025
SolidBody 19(Trim/Extend7[1]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:50mm Volume:6.68508e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0525313kg Weight:0.514807N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 20(Trim/Extend21[1]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:50mm Volume:6.68508e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0525313kg Weight:0.514807N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 21(Trim/Extend24[2]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:50mm Volume:6.68508e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0525313kg Weight:0.514807N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025

SolidBody 22(Trim/Extend4[1]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:52.2184mm Volume:6.98168e-06m^3 Mass Density:7,858kg/m^3 Mass:0.054862kg Weight:0.537648N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 23(Trim/Extend2[2]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:50mm Volume:6.68508e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0525313kg Weight:0.514807N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 24(Trim/Extend11[2]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:60.0036mm Volume:8.02257e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0630413kg Weight:0.617805N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 25(Trim/Extend22[2]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:57.7816mm Volume:7.72549e-06m^3 Mass Density:7,858kg/m^3 Mass:0.0607069kg Weight:0.594927N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 26(Trim/Extend24[1]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:300mm Volume:4.01105e-05m^3 Mass Density:7,858kg/m^3 Mass:0.315188kg Weight:3.08884N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025
SolidBody 27(Trim/Extend5[2]) 	Beam - Uniform C/S	Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:95mm Volume:1.27016e-05m^3 Mass Density:7,858kg/m^3 Mass:0.0998095kg Weight:0.978133N	C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT Apr 1 23:41:29 2025

SolidBody 28(Square tube - configured 20 X 20 X 2(1)[27]) 	Beam - Uniform C/S	**Section Standard-weldment profiles/iso/square tube Section Area: 0.000133699m^2 Length:110mm Volume:1.47069e-05m^3 Mass Density:7,858kg/m^3 Mass:0.115567kg Weight:1.13256N**	**C:\Users\USER\Desktop\Chassis Design\Box bar frame.SLDPRT** Apr 1 23:41:29 2025

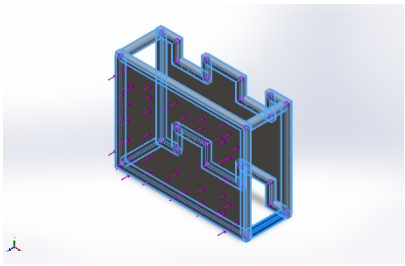
Study Properties

Study name	Chassis Weight Test
Analysis type	Static
Mesh type	Mixed 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	Direct sparse solver
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 (C:\Users\USER\Desktop\Chassis Design)

Units

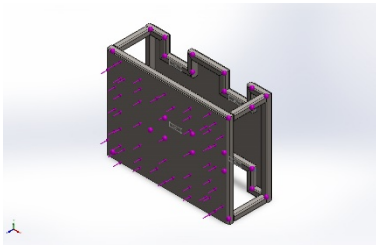
Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m^2

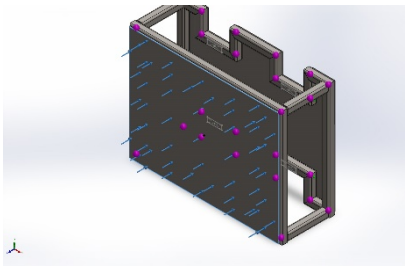
Material Properties

Model Reference	Properties	Components
	**Name:** 1023 Carbon Steel Sheet (SS) **Model type:** Linear Elastic Isotropic **Default failure criterion:** Max von Mises Stress **Yield strength:** 2.82685e+08 N/m^2 **Tensile strength:** 4.25e+08 N/m^2 **Elastic modulus:** 2.05e+11 N/m^2 **Poisson's ratio:** 0.29 **Mass density:** 7,858 kg/m^3 **Shear modulus:** 8e+10 N/m^2 **Thermal expansion coefficient:** 1.2e-05 /Kelvin	SolidBody 1(Boss-Extrude1)(Bottom Plate-1), SolidBody 1(Trim/Extend14[2])(Box bar frame-1), SolidBody 2(Trim/Extend19[2])(Box bar frame-1), SolidBody 3(Trim/Extend5[1])(Box bar frame-1), SolidBody 4(Trim/Extend22[1])(Box bar frame-1), SolidBody 5(Trim/Extend20[2])(Box bar frame-1), SolidBody 6(Square tube - configured 20 X 20 X 2(1)[24])(Box bar frame-1), SolidBody 7(Trim/Extend23[2])(Box bar frame-1), SolidBody 8(Trim/Extend14[1])(Box bar frame-1), SolidBody 9(Trim/Extend8[1])(Box bar frame-1), SolidBody 10(Trim/Extend20[1])(Box bar frame-1), SolidBody 11(Square tube - configured 20 X 20 X 2(1)[26])(Box bar frame-1), SolidBody 12(Trim/Extend18[1])(Box bar frame-1), SolidBody 13(Trim/Extend16[2])(Box bar frame-1), SolidBody 14(Trim/Extend10[1])(Box bar frame-1), SolidBody 15(Trim/Extend21[2])(Box bar frame-1), SolidBody 16(Square tube - configured 20 X 20 X 2(1)[25])(Box bar frame-1),

		SolidBody 17(Trim/Extend3[2])(Box bar frame-1), SolidBody 18(Trim/Extend16[1])(Box bar frame-1), SolidBody 19(Trim/Extend7[1])(Box bar frame-1), SolidBody 20(Trim/Extend21[1])(Box bar frame-1), SolidBody 21(Trim/Extend24[2])(Box bar frame-1), SolidBody 22(Trim/Extend4[1])(Box bar frame-1), SolidBody 23(Trim/Extend2[2])(Box bar frame-1), SolidBody 24(Trim/Extend11[2])(Box bar frame-1), SolidBody 25(Trim/Extend22[2])(Box bar frame-1), SolidBody 26(Trim/Extend24[1])(Box bar frame-1), SolidBody 27(Trim/Extend5[2])(Box bar frame-1), SolidBody 28(Square tube - configured 20 X 20 X 2(1)[27])(Box bar frame-1), SolidBody 1(Boss-Extrude1)(Top Plate-1)
Curve Data:N/A		

Loads and Fixtures

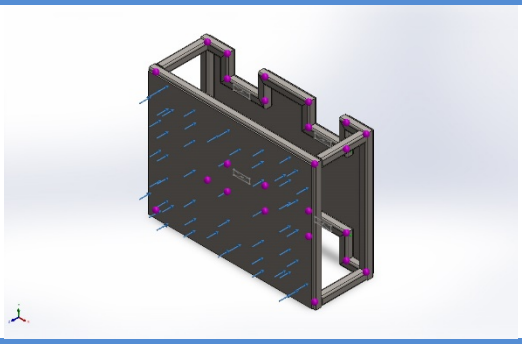
Fixture name	Fixture Image	Fixture Details
Fixed-1		**Type:** Fixed Geometry

Load name	Load Image	Load Details
Force-1		**Entities:** 1 face(s) **Type:** Apply normal force **Value:** 98.1 N

Connector Definitions

No Data

Interaction Information

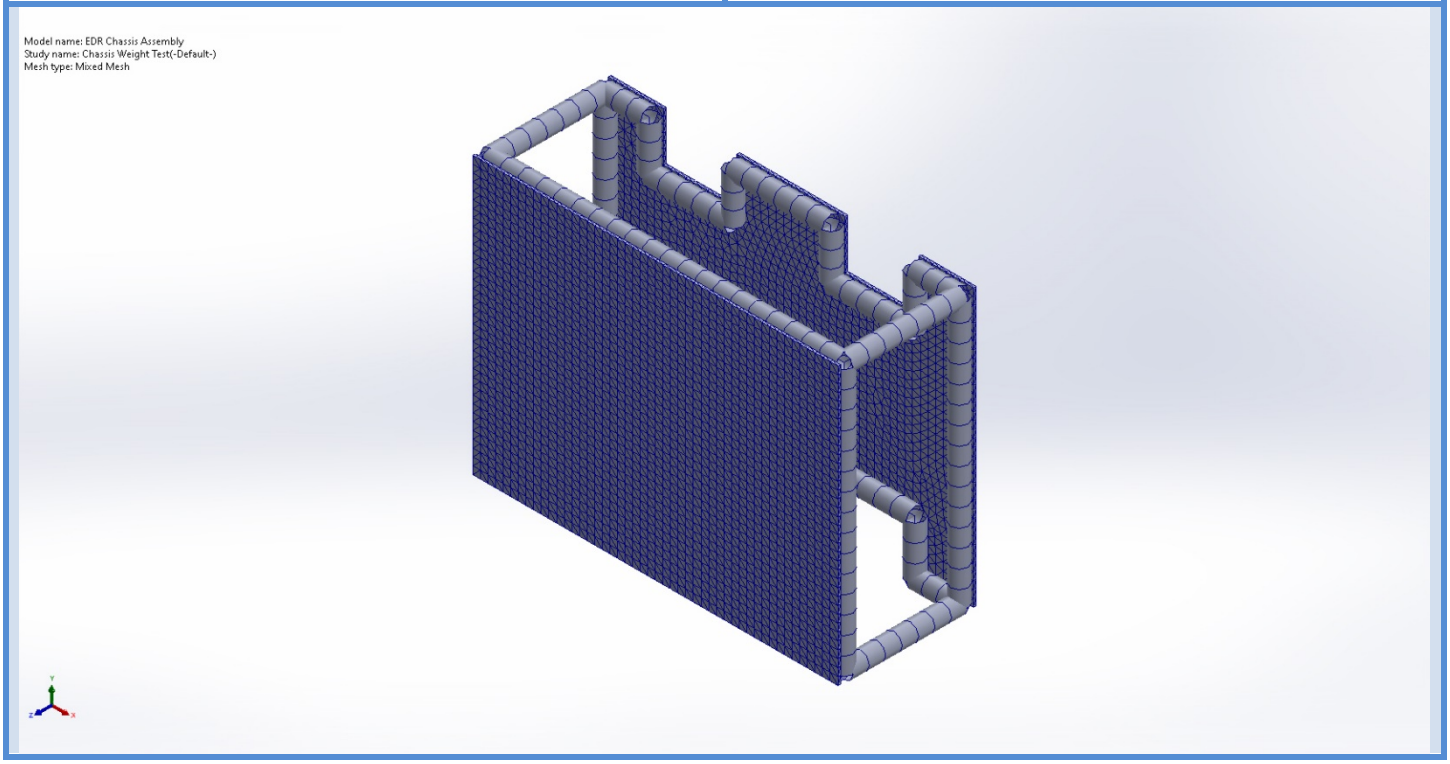
Interaction	Interaction Image	Interaction Properties
Component Contact-2		**Type:** Bonded **Components:** 3 component(s) **Options:** Continuous mesh

Mesh information

Mesh type	Mixed Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points for High quality mesh	16 Points
Jacobian check for shell	On
Element Size	8.69331 mm
Tolerance	0.434666 mm
Mesh Quality	High
Remesh failed parts independently	Off

Mesh information - Details

Total Nodes	41488
Total Elements	20734
Time to complete mesh(hh;mm;ss):	00:00:07
Computer name:	



Sensor Details

No Data

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-9.53674e-07	0	98.1	98.1

Reaction Moments

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	-0.158036	0.00327212	0.00951537	0.158356

Free body forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	4.34408e-05	6.35556e-06	0.00370944	0.0037097

Free body moments

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

Beams

Beam Forces

Beam Name	Joints	Axial(N)	Shear1(N)	Shear2(N)	Moment1(N.m)	Moment2(N.m)	Torque(N.m)
Beam-1(Trim/Extend14[2])	1	-1.84929	10.1222	14.2267	0.478417	-0.277077	0.385963
	2	1.42657	10.258	14.3817	-0.472211	0.278891	0.373873
Beam-2(Trim/Extend19[2])	1	-4.15636	7.91991	24.5527	-1.24867	0.287536	-0.535613
	2	4.15634	-7.91992	-24.5527	-0.224579	0.187687	0.535614
Beam-3(Trim/Extend5[1])	1	-4.3206	-8.77183	-24.4864	0.201346	-0.193106	0.560348
	2	4.32061	8.77183	24.4864	1.14541	-0.289344	-0.560347
Beam-4(Trim/Extend22[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-5(Trim/Extend20[2])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-6(Square tube - configured 20 X 20 X 2(1)[24])	1	-24.4932	-4.33938	1.72135	0.812377	0.577941	-0.0149599
	2	24.4932	4.33938	-1.72139	-0.588599	-0.0138222	0.0149594
Beam-7(Trim/Extend23[2])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-8(Trim/Extend14[1])	1	4.9811	-6.66492	9.41163	0.185514	0.250007	-0.250512
	2	-5.24788	-6.8651	9.48519	-0.186103	-0.255305	-0.259368
Beam-9(Trim/Extend8[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-10(Trim/Extend20[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-11(Square tube - configured 20 X 20 X 2(1)[26])	1	-24.5173	4.39459	-1.46506	-0.79919	-0.58404	-0.0142112
	2	24.5173	-4.39459	1.46514	0.608728	0.012744	0.0142103
Beam-12(Trim/Extend18[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0

Beam-13(Trim/Extend16[2])	1	-1.38725	-10.4253	14.416	0.475579	0.284548	-0.371876
	2	1.74903	-10.2737	14.1306	-0.477107	-0.282131	-0.384937
Beam-14(Trim/Extend10[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-15(Trim/Extend21[2])	1	-6.24518	-1.41177	0.229724	-0.135999	-0.0103495	-0.0250711
	2	6.25357	-1.07015	0.843512	0.149318	-0.000939775	-0.0250649
Beam-16(Square tube - configured 20 X 20 X 2(1)[25])	1	-24.5222	-4.51047	-1.86341	-0.819683	0.58631	0.016867
	2	24.5221	4.51047	1.86349	0.577435	5.02686e-05	-0.0168661
Beam-17(Trim/Extend3[2])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-18(Trim/Extend16[1])	1	5.20263	6.77137	9.21015	0.190038	-0.25309	0.248757
	2	-5.77782	6.93871	9.66934	-0.192638	0.257112	0.257203
Beam-19(Trim/Extend7[1])	1	8.77183	-4.3206	24.4864	0.560348	0.193106	-0.201346
	2	-8.77183	4.3206	-24.4864	0.66397	0.0229238	0.201346
Beam-20(Trim/Extend21[1])	1	8.10866	-4.4337	-24.6019	-0.686886	0.0251607	-0.227599
	2	-8.10866	4.4337	24.6019	-0.543208	0.196524	0.227599
Beam-21(Trim/Extend24[2])	1	7.91991	4.15635	24.5527	0.535614	-0.187687	0.224579
	2	-7.91991	-4.15635	-24.5527	0.692022	-0.0201308	-0.224579
Beam-22(Trim/Extend4[1])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-23(Trim/Extend2[2])	1	8.58309	4.26944	-24.459	-0.673469	-0.0188751	0.219448
	2	-8.58309	-4.26944	24.459	-0.549482	-0.194597	-0.219448
Beam-24(Trim/Extend11[2])	1	-4.4337	-8.10865	24.6019	-1.2486	-0.290024	0.543208
	2	4.43369	8.10866	-24.6019	-0.2276	-0.196524	-0.543208
	1	4.26945	-8.58309	24.459	1.19383	0.301348	0.549481

Beam-25(Trim/Extend22[2])	2	-4.26944	8.58309	-24.459	0.219448	0.194597	-0.549482
Beam-26(Trim/Extend24[1])	1	6.33621	1.26465	0.25256	0.14274	-0.007208	0.0260117
	2	-6.21188	1.25204	0.478026	-0.135821	0.0024686	0.0222519
Beam-27(Trim/Extend5[2])	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
Beam-28(Square tube - configured 20 X 20 X 2(1)[27])	1	-24.5674	4.45523	1.60716	0.810734	-0.590589	0.0160187
	2	24.5674	-4.45523	-1.6072	-0.601801	0.0114093	-0.0160182

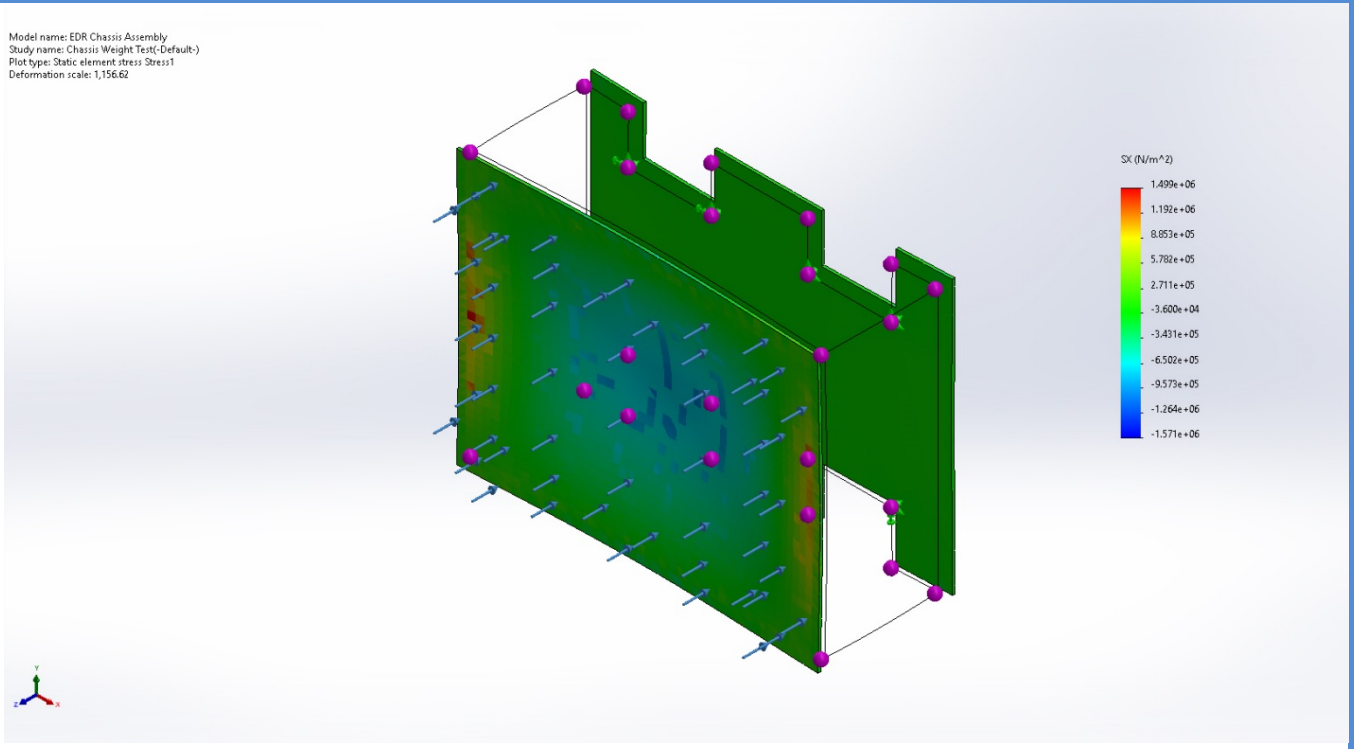
Beam Stresses

Beam Name	Joints	Axial(N/m^2)	Bending Dir1(N/m^2)	Bending Dir2(N/m^2)	Torsional (N/m^2)	Upper bound axial and bending(N/m^2)
Beam-1(Trim/Extend14[2])	1	-13,831.7	691,188	400,304	397,778	1.10532e+06
	2	-10,670	682,222	402,925	385,318	1.09582e+06
Beam-2(Trim/Extend19[2])	1	31,087.4	1.80401e+06	415,415	-552,010	2.25051e+06
	2	31,087.3	-324,458	-271,158	552,011	626,704
Beam-3(Trim/Extend5[1])	1	32,315.8	-290,893	-278,988	577,502	602,197
	2	32,315.9	1.65481e+06	418,027	-577,501	2.10515e+06
Beam-4(Trim/Extend22[1])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-5(Trim/Extend20[2])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-6(Square tube - configured 20 X 20 X 2(1)[24])	1	-183,197	1.17367e+06	-834,975	-15,417.8	2.19184e+06
	2	-183,197	850,372	-19,969.5	15,417.3	1.05354e+06
Beam-7(Trim/Extend23[2])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-8(Trim/Extend14[1])	1	37,256.1	268,019	-361,195	-258,181	666,470
	2	39,251.4	268,870	-368,850	-267,308	676,971
Beam-9(Trim/Extend8[1])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-10(Trim/Extend20[1])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-11(Square tube - configured 20 X 20 X 2(1)[26])	1	-183,376	-1.15462e+06	843,786	-14,646.3	2.18178e+06
	2	-183,376	-879,453	18,411.8	14,645.3	1.08124e+06
Beam-12(Trim/Extend18[1])	1	0	0	0	0	0
	2	0	0	0	0	0
	1	-10,375.9	687,087	-411,098	-383,260	1.10856e+06

Beam-13(Trim/Extend16[2])	2	-13,081.8	689,295	-407,606	-396,721	1.10998e+06
Beam-14(Trim/Extend10[1])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-15(Trim/Extend21[2])	1	46,710.7	196,484	-14,952.3	-25,838.6	258,147
	2	46,773.5	215,726	1,357.73	-25,832.2	263,857
Beam-16(Square tube - configured 20 X 20 X 2(1)[25])	1	-183,413	-1.18423e+06	-847,066	17,383.4	2.21471e+06
	2	-183,413	-834,243	72.625	-17,382.4	1.01773e+06
Beam-17(Trim/Extend3[2])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-18(Trim/Extend16[1])	1	38,912.9	274,556	365,650	256,372	679,118
	2	43,215.1	278,312	371,460	265,077	692,987
Beam-19(Trim/Extend7[1])	1	65,608.7	809,557	-278,988	-207,510	1.15415e+06
	2	65,608.7	-959,264	33,118.9	207,510	1.05799e+06
Beam-20(Trim/Extend21[1])	1	60,648.5	-992,371	-36,350.6	-234,567	1.08937e+06
	2	60,648.5	784,795	283,926	234,567	1.12937e+06
Beam-21(Trim/Extend24[2])	1	59,236.9	773,823	271,158	231,453	1.10422e+06
	2	59,236.9	-999,791	-29,083.7	-231,453	1.08811e+06
Beam-22(Trim/Extend4[1])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-23(Trim/Extend2[2])	1	64,197.1	-972,987	27,269.6	226,166	1.06445e+06
	2	64,197.1	793,858	-281,142	-226,166	1.1392e+06
Beam-24(Trim/Extend11[2])	1	33,161.8	1.8039e+06	-419,009	559,837	2.25608e+06
	2	33,161.7	-328,822	283,926	-559,837	645,910
Beam-25(Trim/Extend22[2])	1	31,933.2	1.72478e+06	-435,369	566,302	2.19208e+06
	2	31,933.2	-317,046	281,142	-566,303	630,121
Beam-26(Trim/Extend24[1])	1	47,391.6	206,221	10,413.7	26,808	264,027
	2	46,461.7	196,226	3,566.48	22,933.1	246,254
Beam-27(Trim/Extend5[2])	1	0	0	0	0	0
	2	0	0	0	0	0
Beam-28(Square tube - configured 20 X 20 X 2(1)[27])	1	-183,751	1.1713e+06	853,247	16,509.1	2.2083e+06
	2	-183,751	869,445	16,483.5	-16,508.6	1.06968e+06

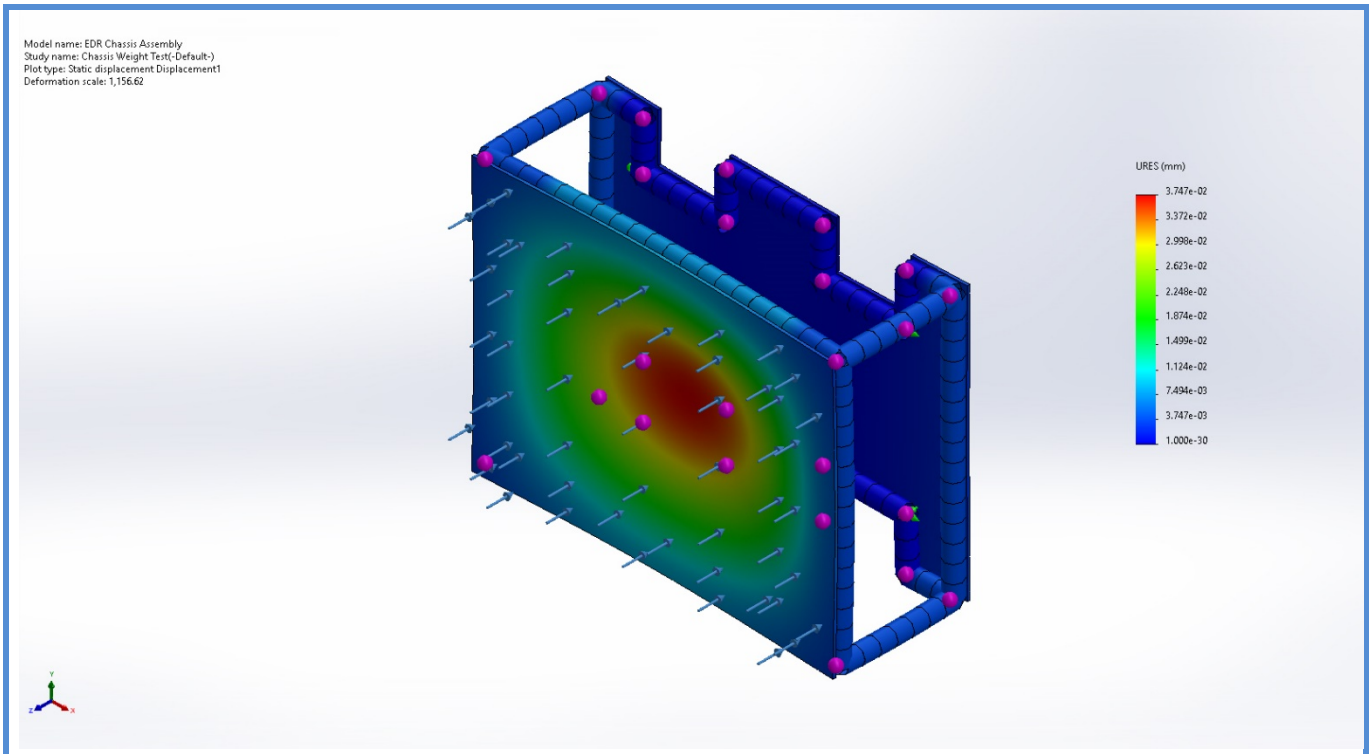
Study Results

Name	Type	Min	Max
Stress1	SX: X Normal Stress	-1.571e+06N/m^2 Element: 10696	1.499e+06N/m^2 Element: 17976



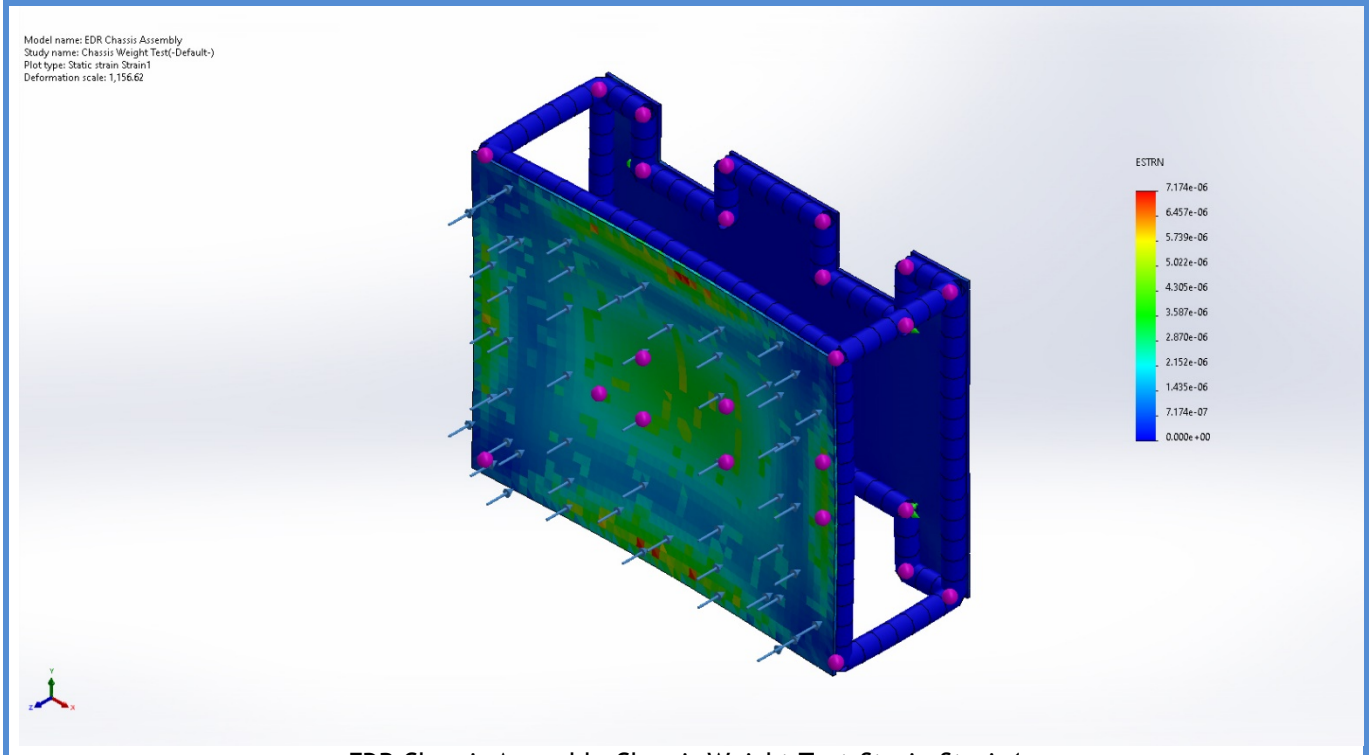
EDR Chassis Assembly-Chassis Weight Test-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0.000e+00mm Node: 41290	3.747e-02mm Node: 39397



EDR Chassis Assembly-Chassis Weight Test-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	0.000e+00 Element: 20539	7.174e-06 Element: 16349



EDR Chassis Assembly-Chassis Weight Test-Strain-Strain1

Image-1

Image-2

Image-3

Image-4

Image-5

Image-6

Image-7

Image-8

Image-9

Image-10

Conclusion