

# Moment torzije

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**Mamula, Ivana**

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# Moment torzije

Datum: 21. rujan 2015.

Konstruktor: Ivana Mamula

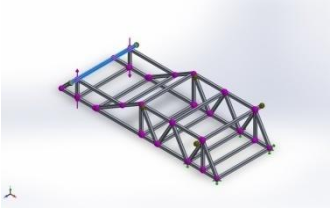
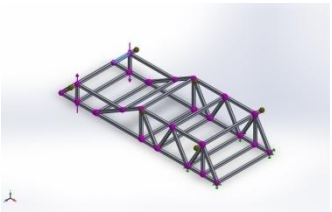
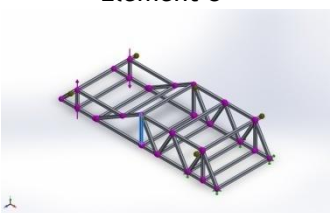
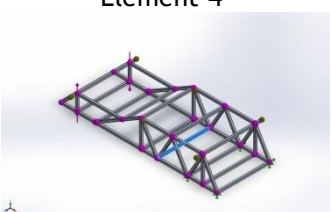
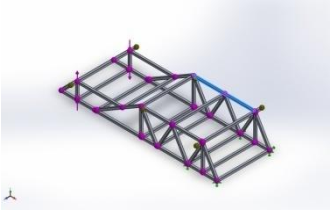
Ime analize: Moment torzije

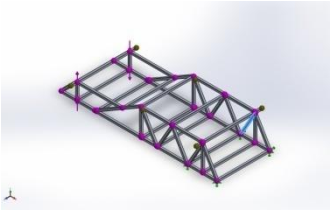
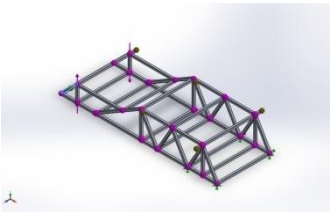
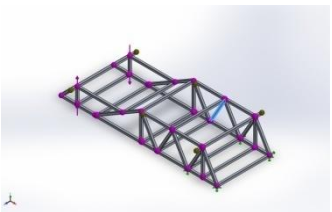
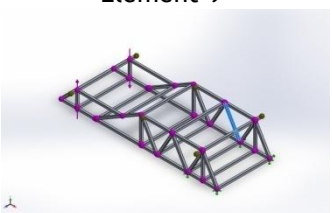
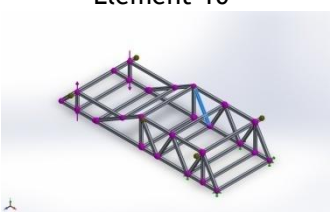
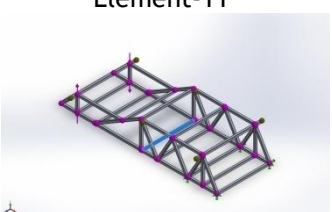
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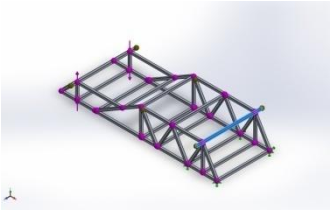
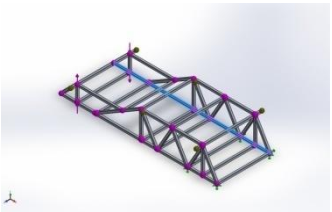
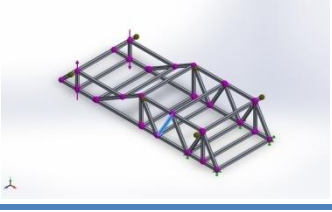
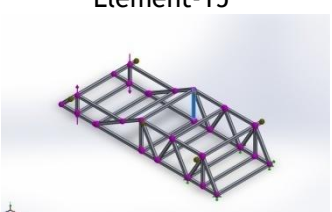
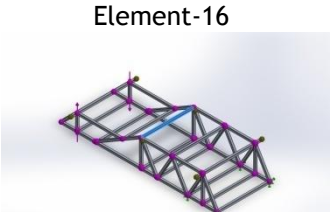
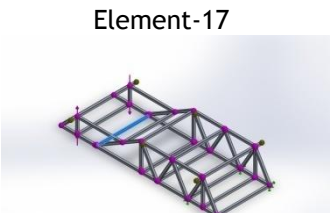
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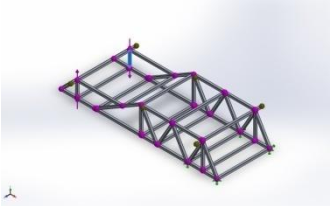
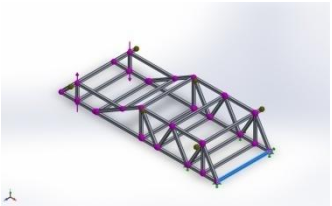
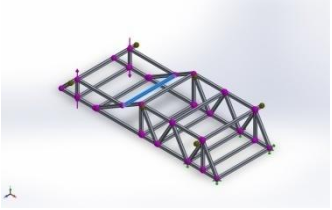
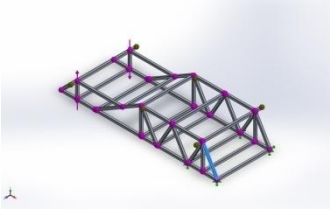
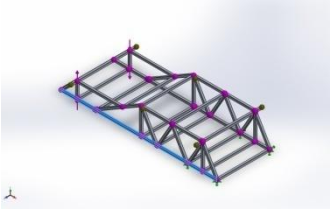


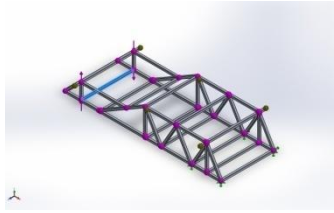
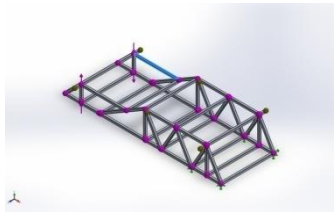
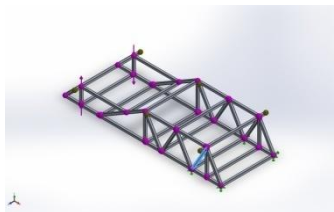
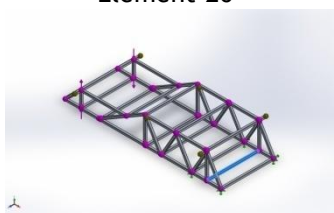
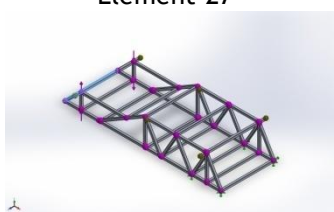
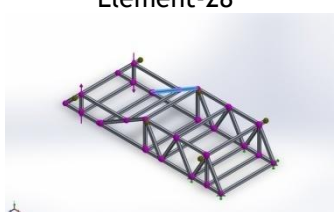
## Informacije o modelu

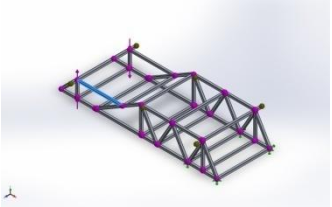
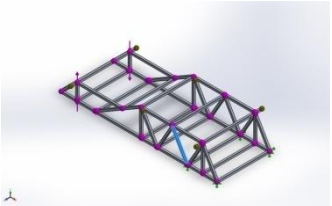
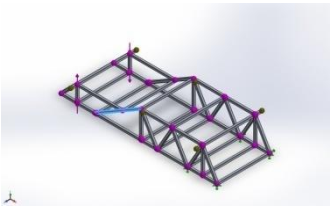
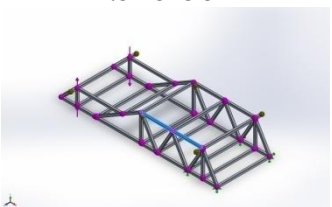
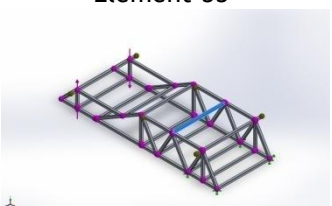
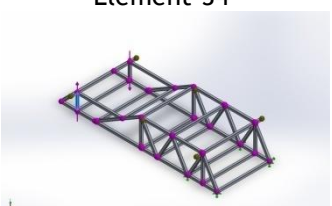
<p>Element-1</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4            Površina presjeka:            371612.16mm<sup>2</sup>            Dužina:1250mm            Volumen:0.00072m<sup>3</sup>            Masena gustoća:2700kg/m<sup>3</sup>            Masa:1.944kg            Težina:19.0512N</p>
<p>Element-2</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4            Površina presjeka:            371612.16mm<sup>2</sup>            Dužina:384.264mm            Volumen:0.000221337m<sup>3</sup>            Masena gustoća:2700kg/m<sup>3</sup>            Masa:0.597611kg            Težina:5.85658N</p>
<p>Element-3</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4            Površina presjeka:            371612.16mm<sup>2</sup>            Dužina:480mm            Volumen:0.000276481m<sup>3</sup>            Masena gustoća:2700kg/m<sup>3</sup>            Masa:0.746498kg            Težina:7.31568N</p>
<p>Element-4</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4            Površina presjeka:            371612.16mm<sup>2</sup>            Dužina:960mm            Volumen:0.00055296m<sup>3</sup>            Masena gustoća:2700kg/m<sup>3</sup>            Masa:1.49299kg            Težina:14.6313N</p>
<p>Element-5</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4            Površina presjeka:            576in<sup>2</sup>            Dužina:1154.7mm            Volumen:0.000665107m<sup>3</sup>            Masena gustoća:2700kg/m<sup>3</sup>            Masa:1.79579kg            Težina:17.5987N</p>

<p>Element-6</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:488.368mm  Volumen:0.000282618m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.763069kg  Težina:7.47808N</p>
<p>Element-7</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:384.264mm  Volumen:0.000221337m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.597611kg  Težina:5.85658N</p>
<p>Element-8</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:508.068mm  Volumen:0.000292645m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.790143kg  Težina:7.7434N</p>
<p>Element-9</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:531.162mm  Volumen:0.000305947m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.826058kg  Težina:8.09537N</p>
<p>Element-10</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:513.608mm  Volumen:0.00029703m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.801982kg  Težina:7.85943N</p>
<p>Element-11</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>

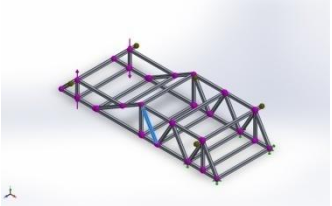
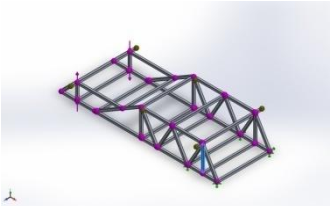
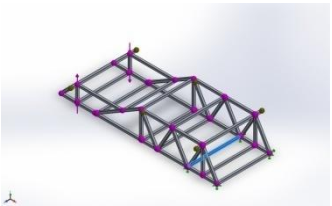
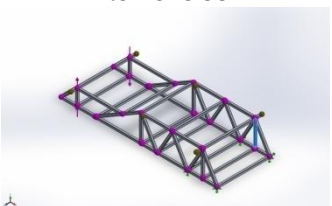
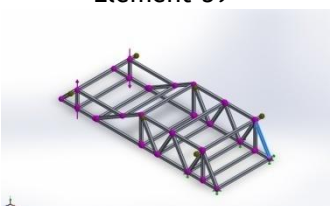
<p>Element-12</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:1250mm  Volumen:0.00072m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.944kg  Težina:19.0512N</p>
<p>Element-13</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:2965mm  Volumen:0.00170784m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:4.6118kg  Težina:45.1896N</p>
<p>Element-14</p> 	<p>Gredni element</p>	<p>Presjek-iso/cijev/40 x 40 x 4  Section Area: 576in<sup>2</sup>  Dužina:508.068mm  Volumen:0.000292645m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.790143kg  Težina:7.7434N</p>
<p>Element-15</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:480mm  Volumen:0.000276481m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.746498kg  Težina:7.31568N</p>
<p>Element-16</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>
<p>Element-17</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>

<p>Element-18</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:260mm  Volumen:0.00014976m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.404352kg  Težina:3.96265N</p>
<p>Element-19</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:1000mm  Volumen:0.000576002m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.5552kg  Težina:15.241N</p>
<p>Element-20</p> 	<p>Gredni element</p>	<p>Presjek-iso/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:970.436mm  Volumen:0.000558971m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.50922kg  Težina:14.7904N</p>
<p>Element-21</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:491.162mm  Volumen:0.000282908m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.763852kg  Težina:7.48575N</p>
<p>Element-22</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:2965mm  Volumen:0.00170784m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:4.61118kg  Težina:45.1896N</p>

<p>Element-23</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Weight:14.6313N</p>
<p>Element-24</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:795.573mm  Volumen:0.000458252m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.23728kg  Težina:12.1253N</p>
<p>Element-25</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:488.368mm  Volumen:0.000282619m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.763071kg  Težina:7.47809N</p>
<p>Element-26</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>
<p>Element-27</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:1000mm  Volumen:0.000576002m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.5552kg  Težina:15.241N</p>
<p>Element-28</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:953.812mm  Volumen:0.000549392m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.48336kg  Težina:14.5369N</p>

<p>Element-29</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:795.573mm  Volumen:0.000458251m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.23728kg  Težina:12.1253N</p>
<p>Element-30</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:531.162mm  Volumen:0.000305947m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.826058kg  Težina:8.09537N</p>
<p>Element-31</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:953.812mm  Volumen:0.000549392m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.48336kg  Težina:14.5369N</p>
<p>Element-32</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:1154.7mm  Volumen:0.000665107m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.79579kg  Težina:17.5987N</p>
<p>Element-33</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>
<p>Element-34</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:260mm  Volumen:0.00014976m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.404352kg  Težina:3.96265N</p>

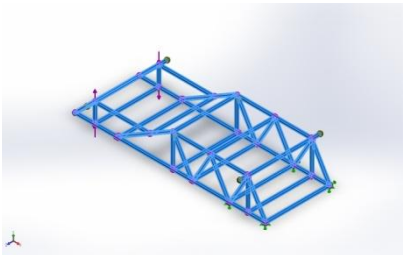


<p>Element-35</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:513.608mm  Volumen:0.00029703m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.801982kg  Težina:7.85942N</p>
<p>Element-36</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:460mm  Volumen:0.00026496m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.715392kg  Težina:7.01084N</p>
<p>Element-37</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:960mm  Volumen:0.00055296m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:1.49299kg  Težina:14.6313N</p>
<p>Element-38</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:460mm  Volumen:0.00026496m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.715392kg  Težina:7.01084N</p>
<p>Element-39</p> 	<p>Gredni element</p>	<p>Presjek-ISO/cijev/40 x 40 x 4  Površina presjeka:  371612.16mm<sup>2</sup>  Dužina:488.368mm  Volumen:0.000282617m<sup>3</sup>  Masena gustoća:2700kg/m<sup>3</sup>  Masa:0.763066kg  Težina:7.47805N</p>

## Mjerne jedinice

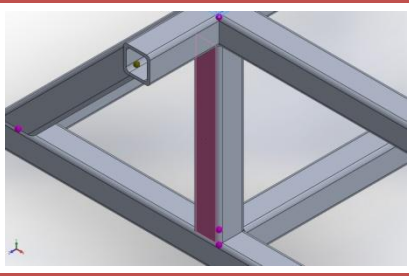
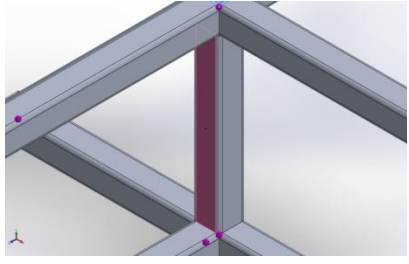
Mjerni sustav:	SI (MKS)
Dužina/Pomak	mm
Temperatura	K
Kutno ubrzanje	Rad/sec
Naprezanje	N/m <sup>2</sup>

## Karakteristike materijala

Model	Karakteristike	Komponente
	<p> <b>Ime:</b> 1060 Aluminijeva legura  <b>Yield-ova snaga:</b> <math>2.75742e+007 \text{ N/m}^2</math>  <b>Vlačna grvstoća:</b> <math>6.89356e+007 \text{ N/m}^2</math>  <b>Modul elastičnosti:</b> <math>6.9e+010 \text{ N/m}^2</math>  <b>Poisson'ov koeficijent:</b> 0.33  <b>Masena gustoća:</b> <math>2700 \text{ kg/m}^3</math>  <b>Modul smicanja:</b> <math>2.7e+010 \text{ N/m}^2</math>  <b>Toplinski koeficijent ekspanzije:</b> <math>2.4e-005 / \text{Kelvin}</math>  <b>Ime:</b> 1060 Aluminijeva legura  <b>Yield-ova snaga:</b> <math>2.75742e+007 \text{ N/m}^2</math> </p>	<p>           Element 1            Element 2            Element 3            Element 4            Element 5            Element 6            Element 7            Element 8            Element 9            Element 10            Element 11            Element 12            Element 13            Element 14            Element 15            Element 16            Element 17            Element 18            Element 19            Element 20            Element 21            Element 22            Element 23            Element 24            Element 25            Element 26            Element 27            Element 28            Element 29            Element 30            Element 31            Element 32            Element 33            Element 34            Element 35            Element 36            Element 37            Element 38            Element 39         </p>

## Sile i uklještenja

Uklještenja	Slika	Fixture Details
Uklještenje-1		<p><b>Količina:</b> U 4 čvora  <b>Tip:</b> Fiksno uklještenje</p>

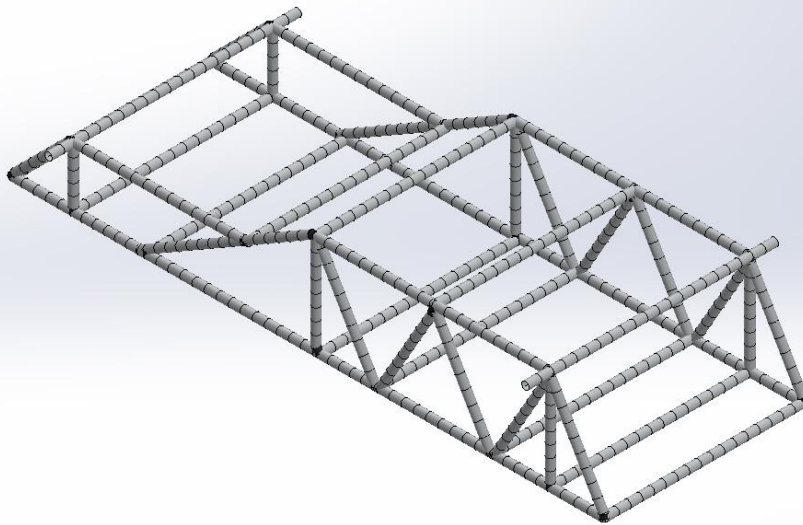
Opterećenje	Slika	Load Details
Sila-1		<p><b>Količina:</b> U 2 čvora  <b>Smjer:</b> U smjeru Y- osi  <b>Tip:</b> Primjenjena sila  <b>Iznos:</b> 4900 N  <b>Količina:</b> U 4 čvora</p>
Sila-2		<p><b>Količina:</b> U 2 čvora  <b>Smjer:</b> U smjeru Y- osi  <b>Tip:</b> Primjenjena sila  <b>Iznos:</b> -4900 N  <b>Količina:</b> U 4 čvora</p>

## Mreža

### Mreža - Detalji

Ukupni broj čvorova	616
Ukupni broj elemenata	614
Vrijeme potrebno za generiranje mreže(hh:mm:ss):	00:00:12

Model name: Part12bdsbv  
Study name: Static 5(-Default<As Machined>-)  
Mesh type:



## Rezultirajuće vrijednosti

### Sila

Područje	Jedinica	Suma po X	Suma po Y	Suma po Z	Rezultirajuća
Model	N	0.00390625	0	-3.05176e-005	0.00390637

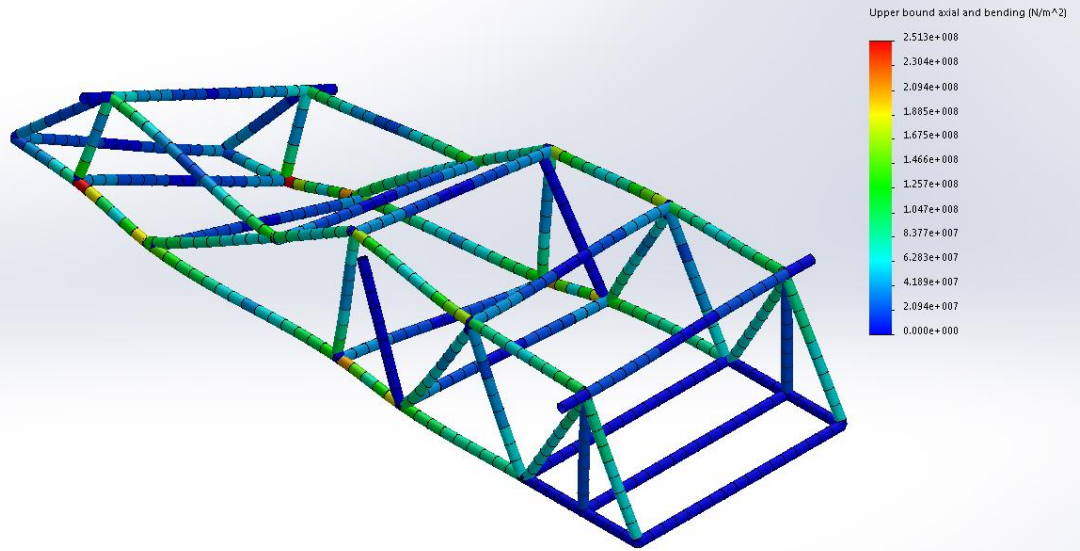
### Momenti

Područje	Jedinica	Suma po X	Suma po Y	Suma po Z	Rezultirajuća
Model	N.m	534.839	-237.876	0.100883	585.353

# Rezultati

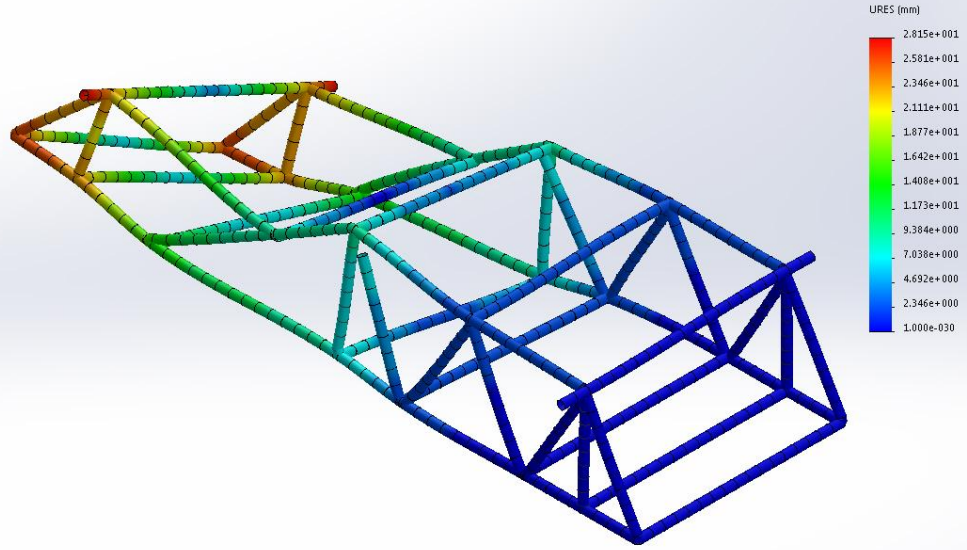
Ime	Tip	Min	Max
Naprezanje	TXY: Smicanje u smjeru Y-osi na YZ ravnini	0 N/m <sup>2</sup> Element: 161	2.51319e+008 N/m <sup>2</sup> Element: 214

Model name: Part12bdsbv  
 Study name: Static 5(Default<As Machined>-)  
 Plot type: Upper bound axial and bending Stress1  
 Deformation scale: 10.896



Ime	Tip	Min	Max
Pomaci	Ukupni pomaci	0 mm Node: 102	28.1516 mm Node: 503

Model name: Part12bdsbv  
Study name: Static 5(-Default<As Machined>-)  
Plot type: Static displacement Displacement1  
Deformation scale: 10.896



Ime	Tip
Pomaci	Deformiranost oblika

Model name: Part12bdsbv  
Study name: Static 5(-Default<As Machined>-)  
Plot type: Deformed Shape Displacement[1]  
Deformation scale: 10.896

