

# Simulation of erkek hesap için

Date: Tuesday, 19 November, 2013  
Designer: ÖMER KORCAN ATEŞ  
Study name: Study 1  
Analysis type: Static

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## Description

3 noktada toplam 5980 N Yük için hesaplanmıştır

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## Assumptions

### Comments:

Yere bağlantıda en kötü durum olan taban yüzeyinden sabitlendiği varsayılmıştır.  
Yükleme için tellerin baskı yaptığı üst yuva yüzeyleri alınmıştır

## Model Information






Model name: erkek hesap için  
Current Configuration: Default

### Solid Bodies

| Document Name and Reference | Treated As | Volumetric Properties | Document Path/Date Modified |
|-----------------------------|------------|-----------------------|-----------------------------|
|-----------------------------|------------|-----------------------|-----------------------------|



|   |            |   |   |
|---|------------|---|---|
|  | Solid Body | Mass: 6.14819 kg<br>Volume: 0.00078823 m <sup>3</sup><br>Density: 7800 kg/m <sup>3</sup><br>Weight: 60.2523 N | C:\Users\Korcan\YandexDisk\1.OKA\1.MUSTERILER\CÜNEYT ÜNEYT<br>ARIK\ÇİZİMLER\2013.11.18 - kolon hesabı\erkek hesap için.SLDPRT |
|---|------------|---|---|

## Study Properties


|  |  |
|--|--|
| Study name   | Study 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<br>(C:\Users\Korcan\YandexDisk\1.OKA\1.MUSTERILER\CÜNEYT ÜNEYT<br>ARIK\ÇİZİMLER\2013.05.31 - galveniz profiller\HESAP) |



## Units

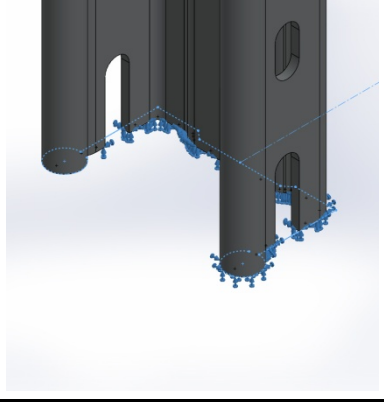
|                     |                  |
|---------------------|------------------|
| Unit system:        | SI (MKS)         |
| Length/Displacement | mm               |
| Temperature         | Kelvin           |
| Angular velocity    | Rad/sec          |
| Pressure/Stress     | N/m <sup>2</sup> |

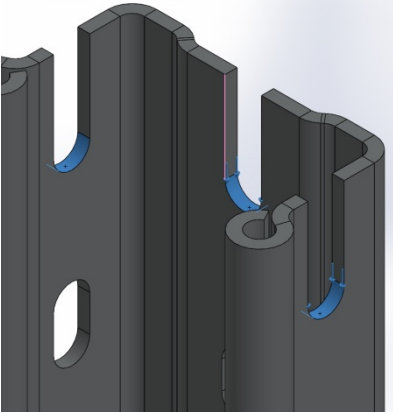
## Material Properties

| Model Reference  | Properties  | Components                             |
|--|---|--|
|  | <p>Name: Plain Carbon Steel<br/>Model type: Linear Elastic Isotropic<br/>Default failure criterion: Unknown<br/>Yield strength: 2.20594e+008 N/m<sup>2</sup><br/>Tensile strength: 3.99826e+008 N/m<sup>2</sup><br/>Elastic modulus: 2.1e+011 N/m<sup>2</sup><br/>Poisson's ratio: 0.28<br/>Mass density: 7800 kg/m<sup>3</sup><br/>Shear modulus: 7.9e+010 N/m<sup>2</sup><br/>Thermal expansion coefficient: 1.3e-005 /Kelvin</p> | SolidBody 1(Mirror1)(erkek hesap için) |
| Curve Data:N/A   |   |  |



## Loads and Fixtures

| Fixture name         | Fixture Image   | Fixture Details                              |            |           |
|----------------------|---|--|------------|-----------|
| Fixed-1              |  | Entities: 20 face(s)<br>Type: Fixed Geometry |            |           |
| Resultant Forces     |   |  |            |           |
| Components           | X   | Y  | Z          | Resultant |
| Reaction force(N)    | -0.0744228  | 5979.96                                      | -0.0632324 | 5979.96   |
| Reaction Moment(N·m) | 0   | 0  | 0          | 0         |

| Load name | Load Image  | Load Details  |
|-----------|---|---|
| Force-1   |  | Entities: 3 face(s)<br>Reference: Edge< 1 ><br>Type: Apply force<br>Values: ---, ---, -5980 N |



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## Connector Definitions

No Data

## Contact Information

No Data



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## Mesh Information

|                          |               |
|--------------------------|---------------|
| Mesh type                | Solid Mesh    |
| Mesher Used:             | Standard mesh |
| Automatic Transition:    | Off           |
| Include Mesh Auto Loops: | On            |
| Jacobian points          | 4 Points      |
| Element Size             | 9.32859 mm    |
| Tolerance                | 0.46643 mm    |
| Mesh Quality             | High          |

## Mesh Information - Details

|                                      |          |
|--------------------------------------|----------|
| Total Nodes                          | 139933   |
| Total Elements                       | 79226    |
| Maximum Aspect Ratio                 | 166.98   |
| % of elements with Aspect Ratio < 3  | 5.94     |
| % of elements with Aspect Ratio > 10 | 29.8     |
| % of distorted elements(Jacobian)    | 0        |
| Time to complete mesh(hh:mm:ss):     | 00:01:13 |
| Computer name:                       | HPZ800   |





Model name: erkek hesap için  
Study name: Study 1  
Mesh type: Solid mesh



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## Sensor Details

No Data

## Resultant Forces

### Reaction Forces

| Selection set | Units | Sum X      | Sum Y   | Sum Z      | Resultant |
|---------------|-------|------------|---------|------------|-----------|
| Entire Model  | N     | -0.0744228 | 5979.96 | -0.0632324 | 5979.96   |

### Reaction Moments

| Selection set | Units | Sum X | Sum Y | Sum Z | Resultant |
|---------------|-------|-------|-------|-------|-----------|
| Entire Model  | N·m   | 0     | 0     | 0     | 0         |

## Beams

No Data



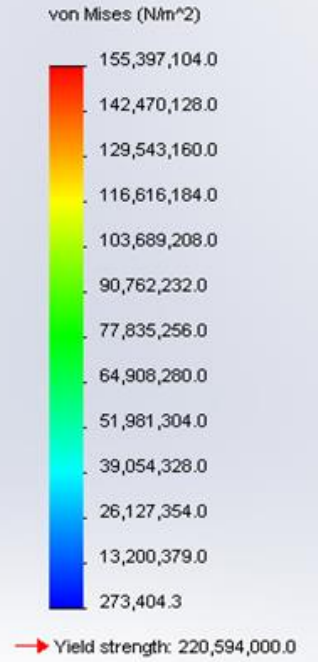
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## Study Results

| Name    | Type                  | Min                                    | Max   |
|---------|-----------------------|--|---|
| Stress1 | VON: von Mises Stress | 273404 N/m <sup>2</sup><br>Node: 72130 | 1.55397e+008 N/m <sup>2</sup><br>Node: 139398 |



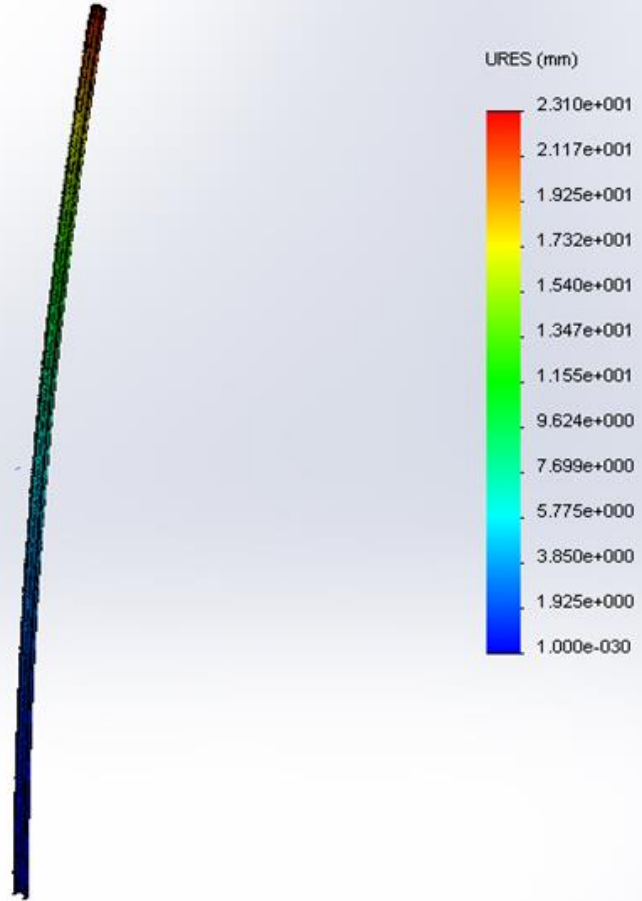
Model name: erkek hesap için  
Study name: Study 1  
Plot type: Static nodal stress Stress1



erkek hesap için-Study 1-Stress-Stress1

| Name          | Type                         | Min               | Max                     |
|---------------|------------------------------|-------------------|-------------------------|
| Displacement1 | URES: Resultant Displacement | 0 mm<br>Node: 559 | 23.0984 mm<br>Node: 938 |

Model name: erkek hesap için  
Study name: Study 1  
Plot type: Static displacement Displacement1  
Deformation scale: 15.1537



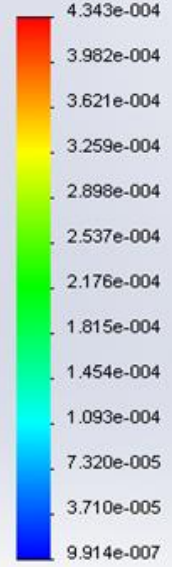
erkek hesap için-Study 1-Displacement-Displacement1

| Name    | Type                     | Min                            | Max                           |
|---------|--------------------------|--------------------------------|-------------------------------|
| Strain1 | ESTRN: Equivalent Strain | 9.91399e-007<br>Element: 43137 | 0.000434265<br>Element: 43105 |

Model name: erkek hesap için  
Study name: Study 1  
Plot type: Static strain Strain1  
Deformation scale: 15.1537



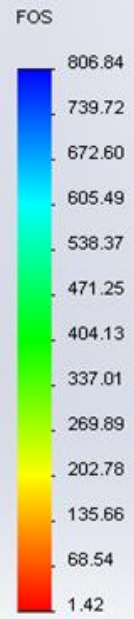
ESTRN



erkek hesap için-Study 1-Strain-Strain1

| Name              | Type      | Min                     | Max                    |
|-------------------|-----------|-------------------------|------------------------|
| Factor of Safety1 | Automatic | 1.41955<br>Node: 139398 | 806.842<br>Node: 72130 |

Model name: erkek hesap için  
Study name: Study 1  
Plot type: Factor of Safety Factor of Safety1  
Criterion : Automatic  
Factor of safety distribution: Min FOS = 1.4



erkek hesap için-Study 1-Factor of Safety-Factor of Safety1



Model name: erkek hesap için  
Study name: Study 1  
Plot type: Static nodal stress Stress1  
Deformation scale: 15.1537

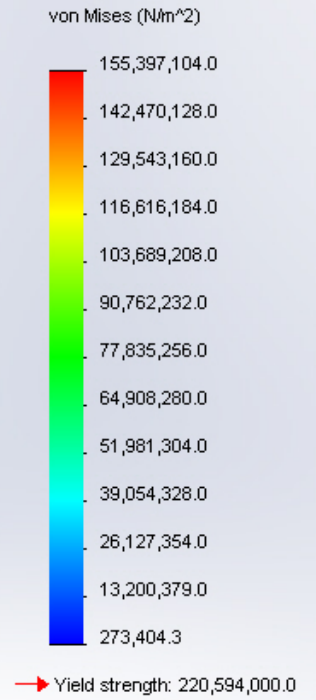
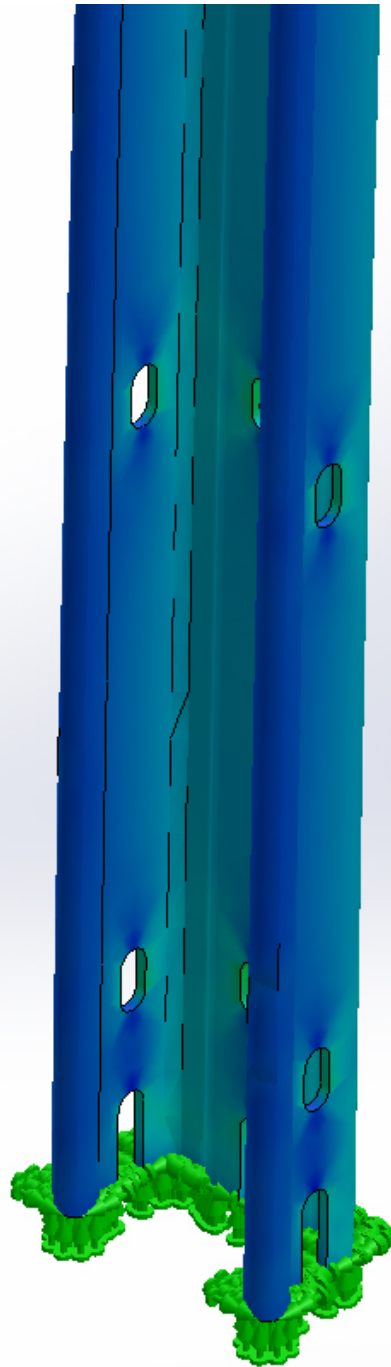


Image-1



Model name: erkek hesap için  
Study name: Study 1  
Plot type: Static nodal stress Stress1

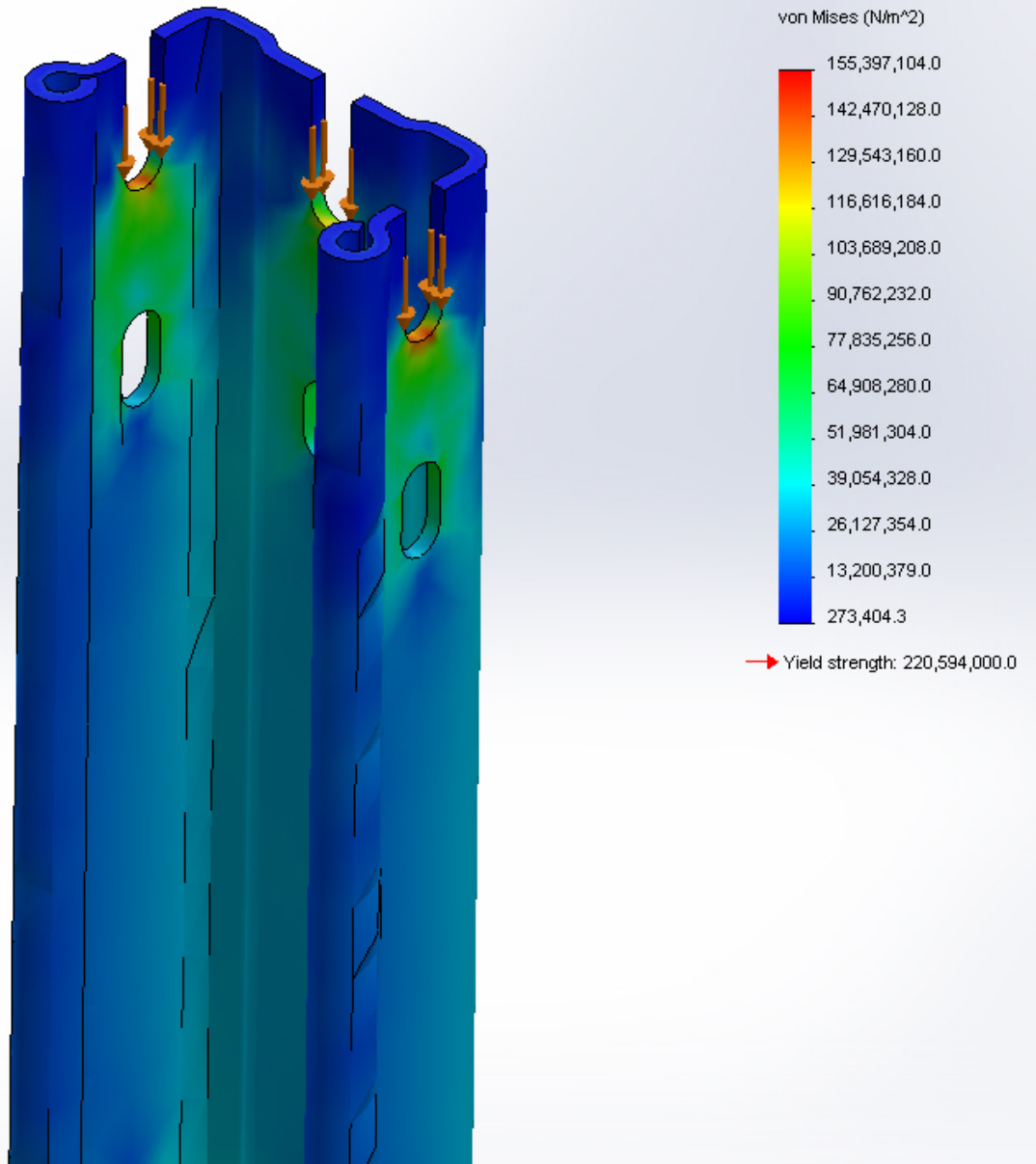


Image-2

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## Conclusion

