



Assesment Opdracht B CPP

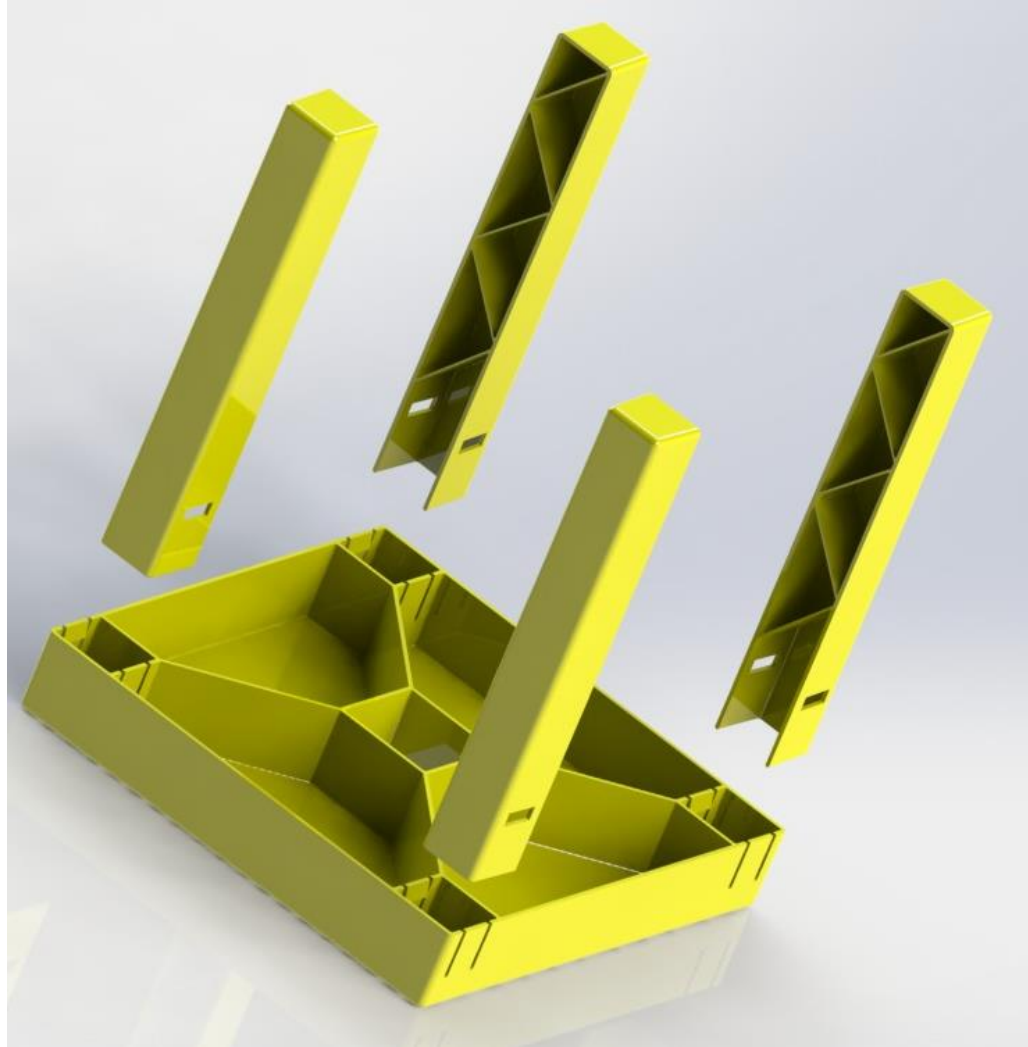
Joris Raaphorst
IO2C
S1055886

Materiaal

- ▶ Mijn keuze viel op 3 veel gebruikte materialen
 - ▶ ABS
 - ▶ Yieldstrength: 45 MPa
 - ▶ Polyethyleen
 - ▶ Yieldstrength: 21 MPa
 - ▶ Polipropyleen
 - ▶ Yieldstrength: 33.8 MPa

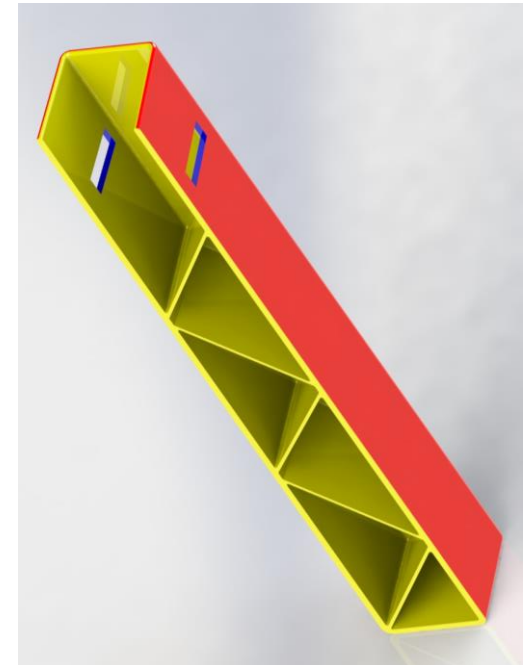
Resin	Recommended Wall Thickness (mm)
ABS	1.14 - 3.50
Acetal	0.64 - 3.05
Acrylic	0.64 - 3.81
Liquid crystal polymer	0.76 - 3.05
Long-fibre reinforced plastics	1.90 - 2.54
Nylon	0.76 - 2.92
Polycarbonate	0.11 - 3.81
Polyester	0.64 - 3.17
Polyethylene	0.76 - 5.08
Polyphenylene sulfide	0.51 - 4.57
Polypropylene	0.64 - 3.81
Polystyrene	0.89 - 3.81

Product opbouw



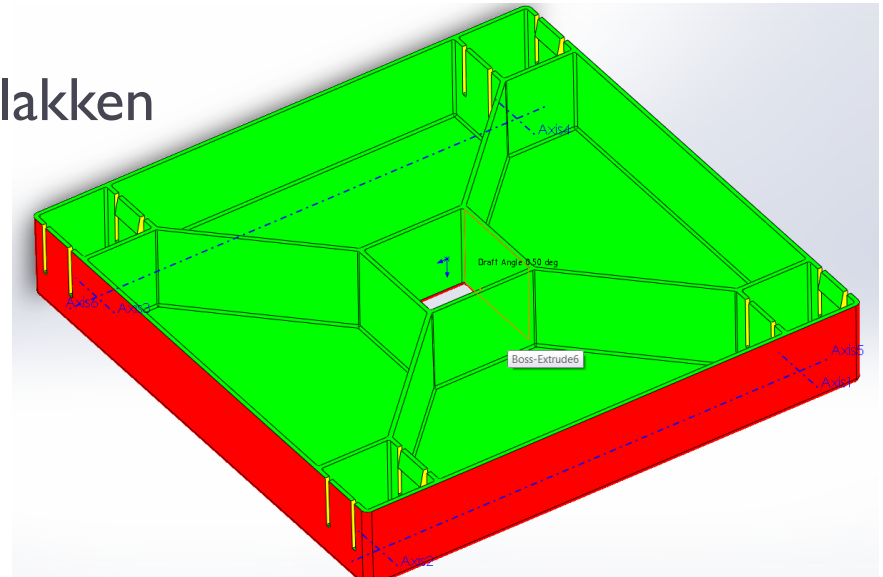
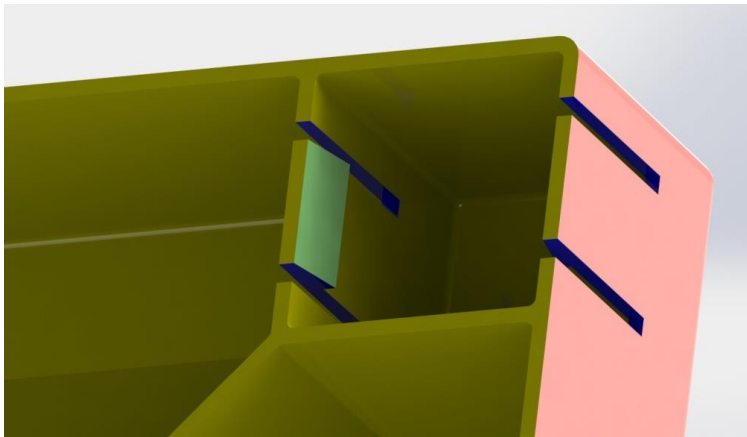
Matrijs deling - stoelpoot

- ▶ De matrijs bestaat uit 2 grote delen
- ▶ Geel:
 - ▶ De gele vlakken raken de binnenmatrijs
 - ▶ De blauwe vlakken ontstaan door schuifjes bevestigd aan de gele matrijs.
- ▶ Rood:
 - ▶ De rode vlakken beslaat de buitenkant.



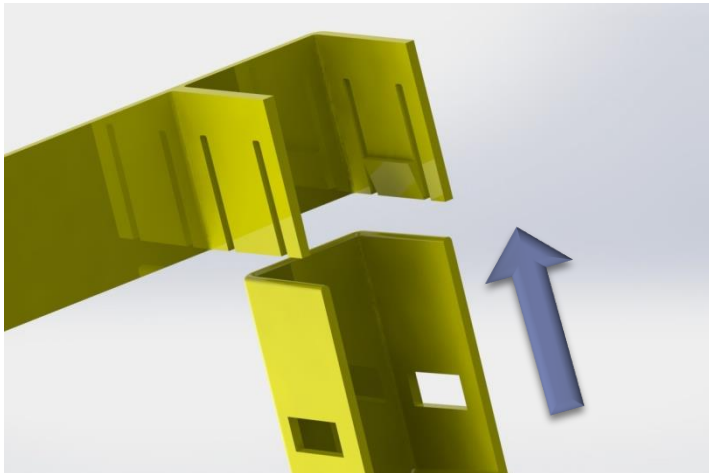
Matrijsdeling - tafelblad

- ▶ De matrijs bestaat uit 2 grote delen
- ▶ Groen:
 - ▶ De binnenmatrijs maakt groene vlakken
 - ▶ De gele vlakken ontstaan door schuifjes in de groene matrijs. Dit geldt eveneens voor de clipjes in afbeelding 2
- ▶ Rood:
 - ▶ De buitenmatrijs maakt rode vlakken



Verbindingen

- ▶ Men schuift de poot in het gat
- ▶ Het clipje buigt van de poot af
- ▶ Het clipje klikt in het gat na genoeg door schuiven



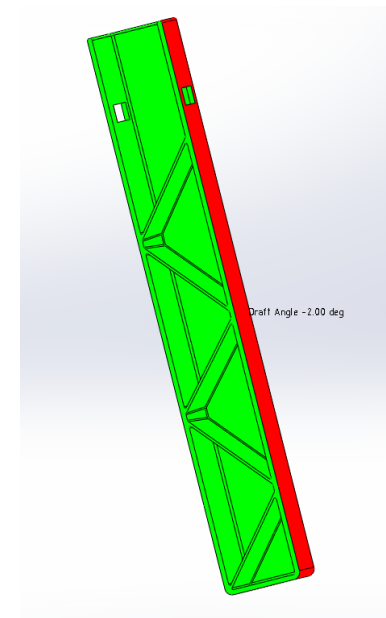
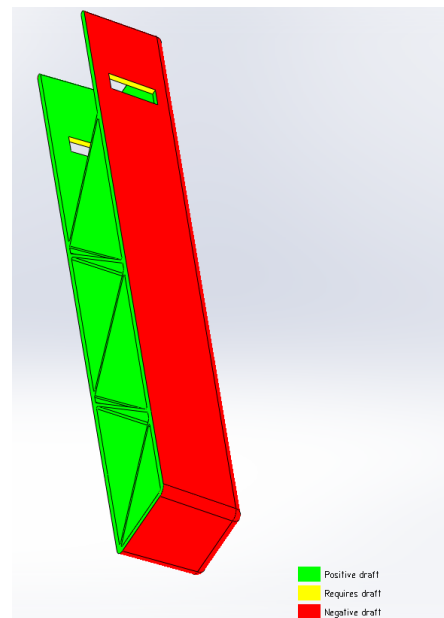
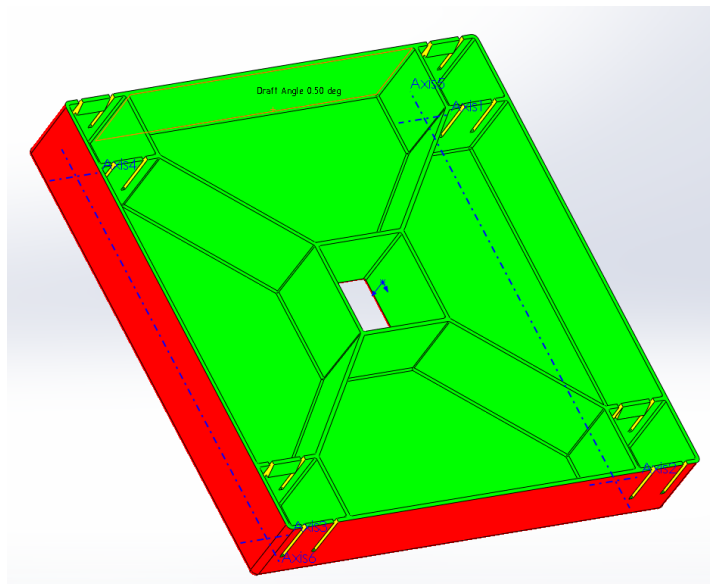
Lossingen

▶ Binnenvlakken:

- ▶ Lossingshoek = 0.5%

▶ Buitenvlakken

- ▶ Lossingshoek poot = 2 %
- ▶ Lossingshoek zitvlak = 0,5% (anders passen de poten niet)



Positive draft
Requires draft
Negative draft

Radii

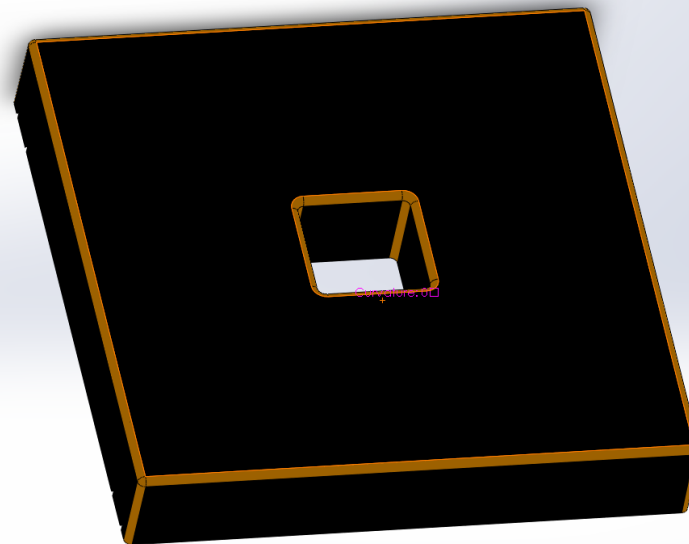
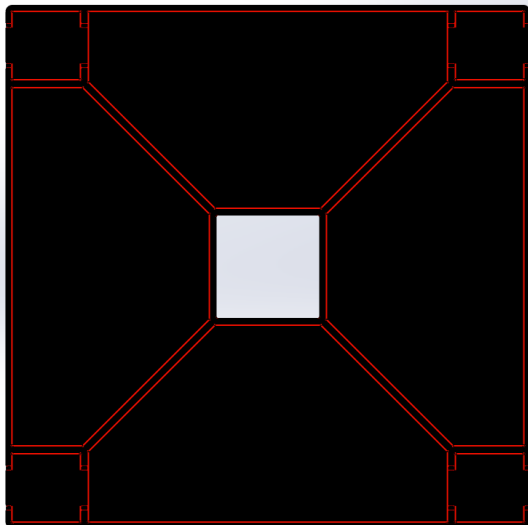
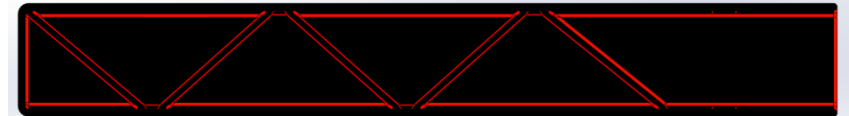
- ▶ Rood:

- ▶ Radii = 0.625mm(0.25T)

- ▶ Of 1,25mm (0,5T)

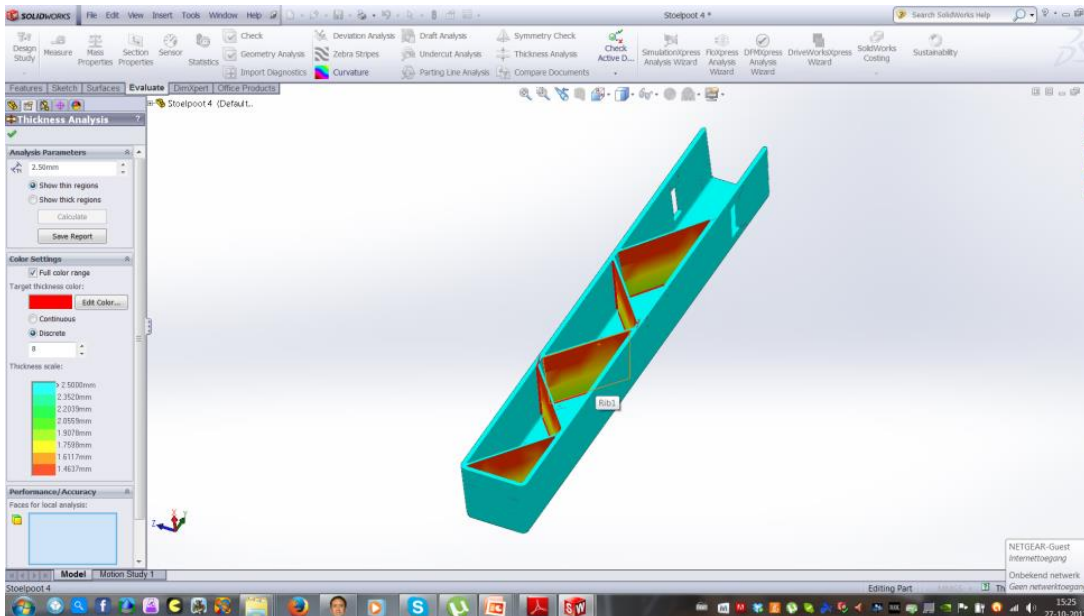
- ▶ Bruin:

- ▶ Radii = 3.75mm (1.5T)



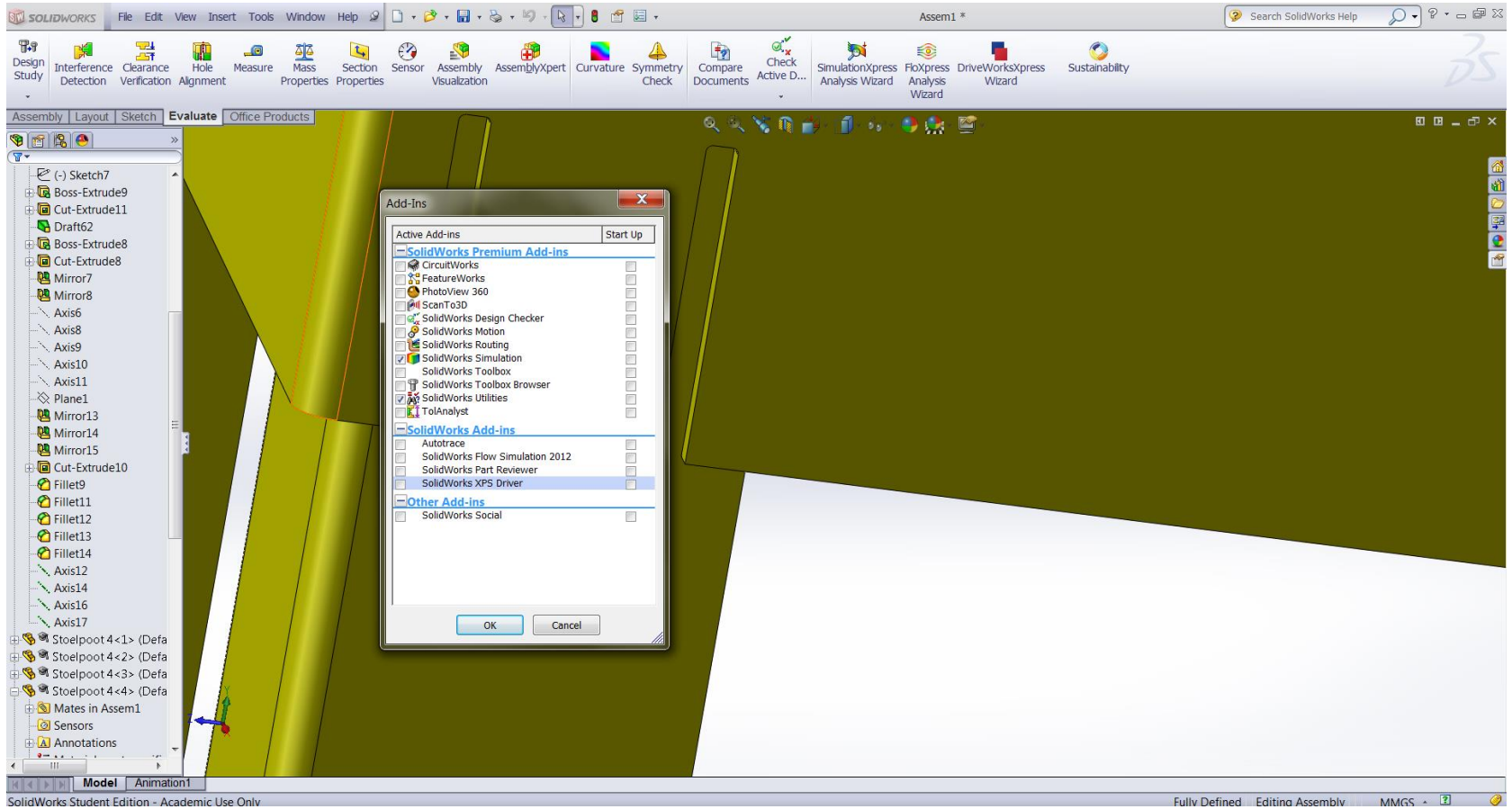
Wanddiktes

- ▶ Dikste wanddikte toepasbaar op elk materiaal = 2.5 mm
- ▶ Overall is de wanddikte 2.5mm behalve in de ribben omdat daar een lossingshoek van 2 kanten op zit.

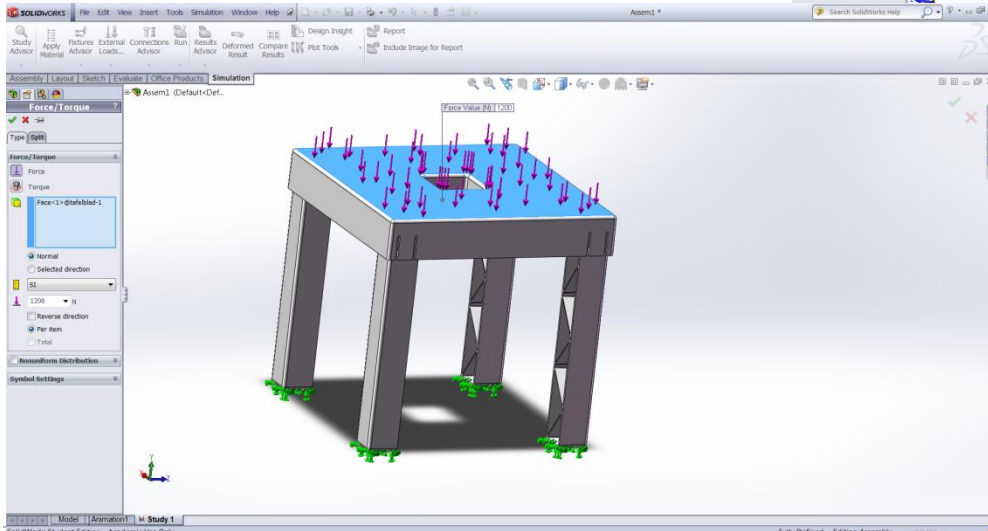
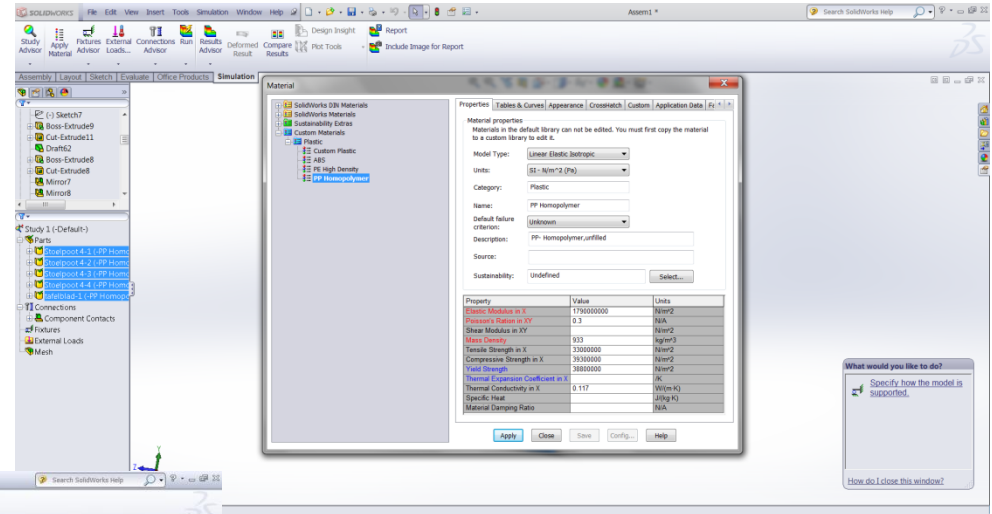


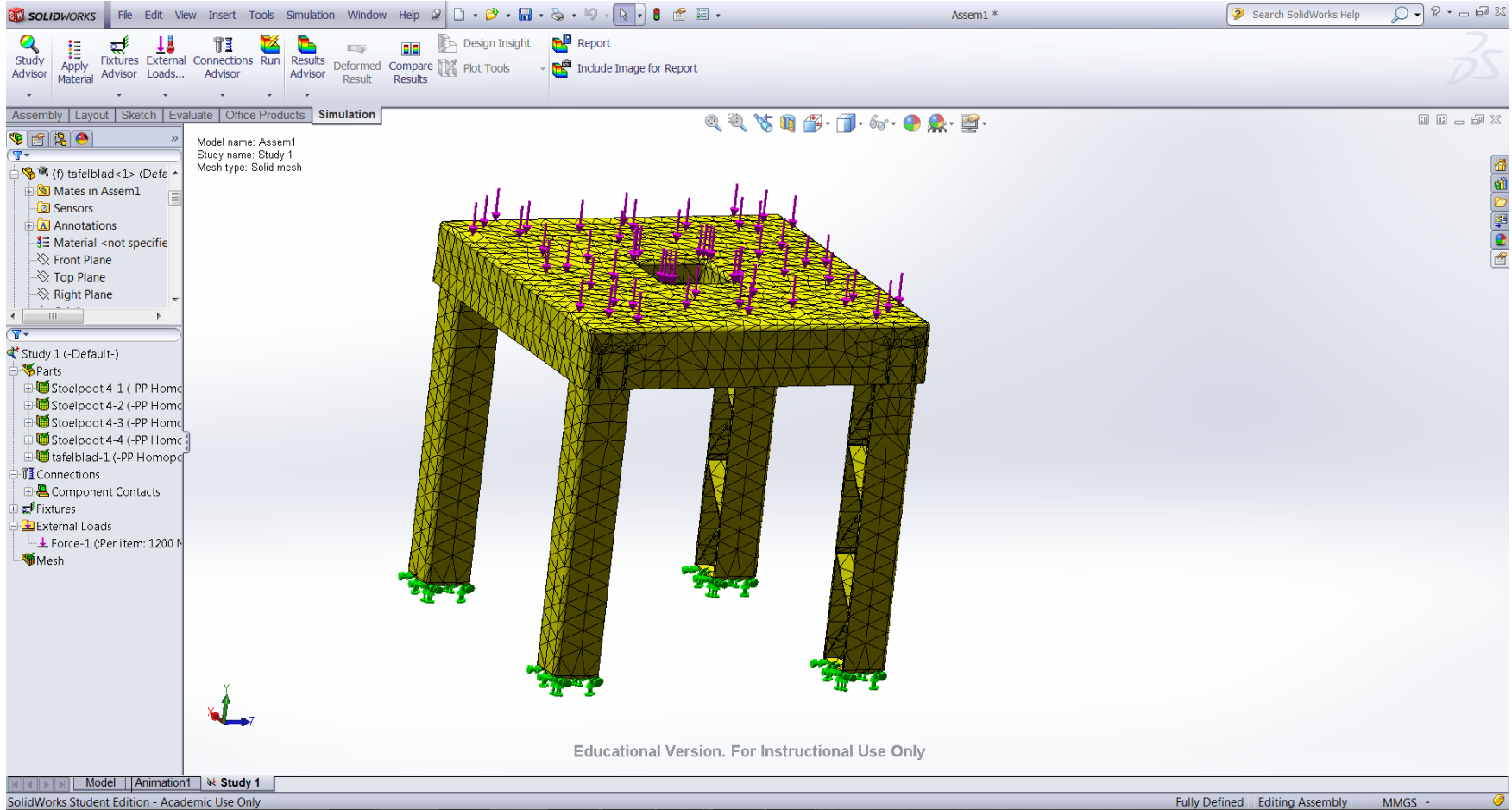
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Sterkte berekening



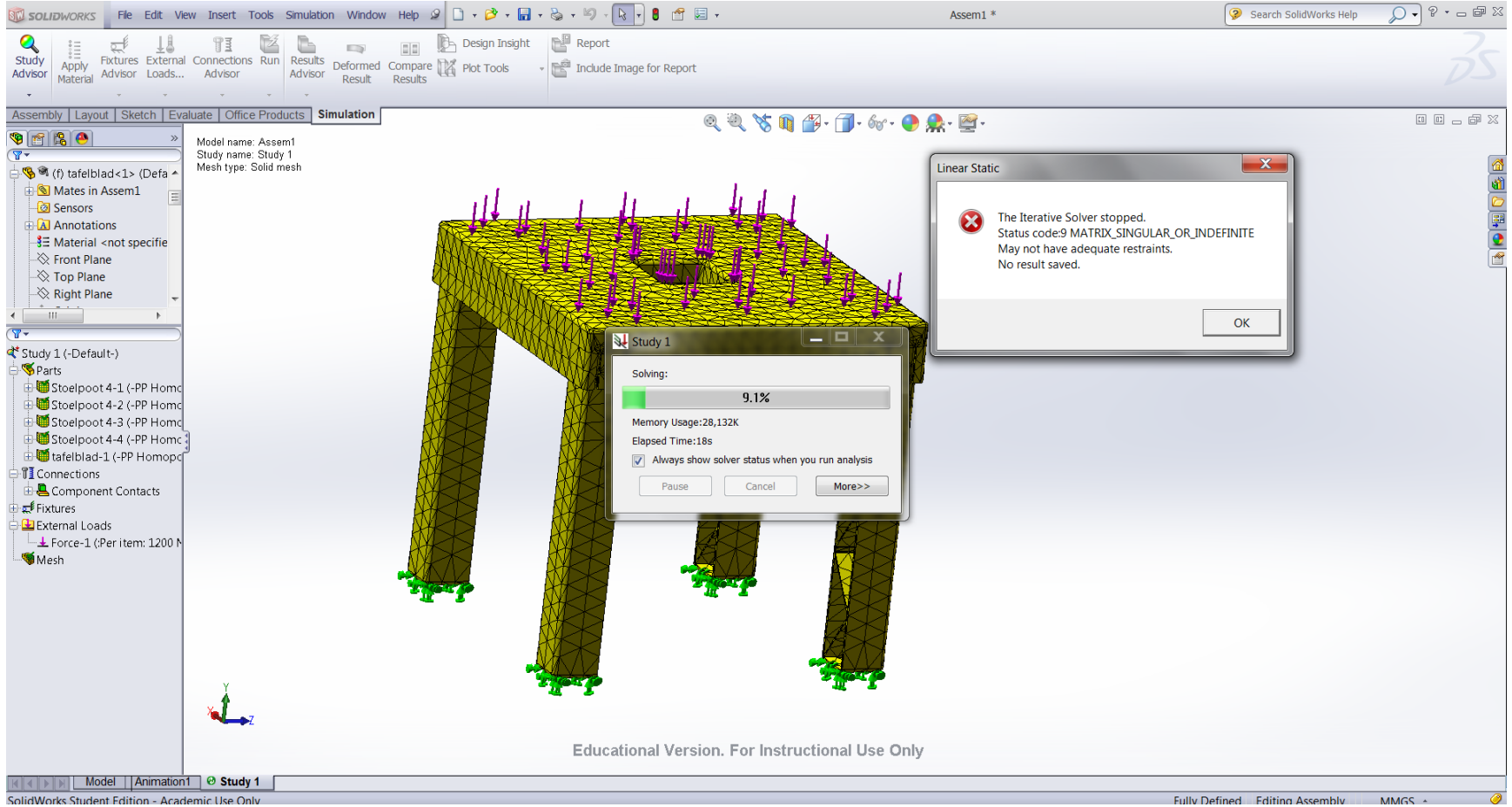
Material keuze + Force en Fixture





Status code: 9

Matrix_Singular_Or_Indefinite



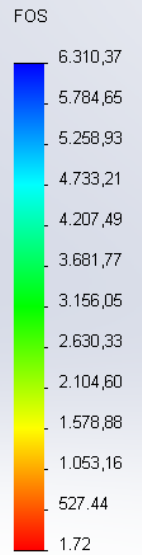
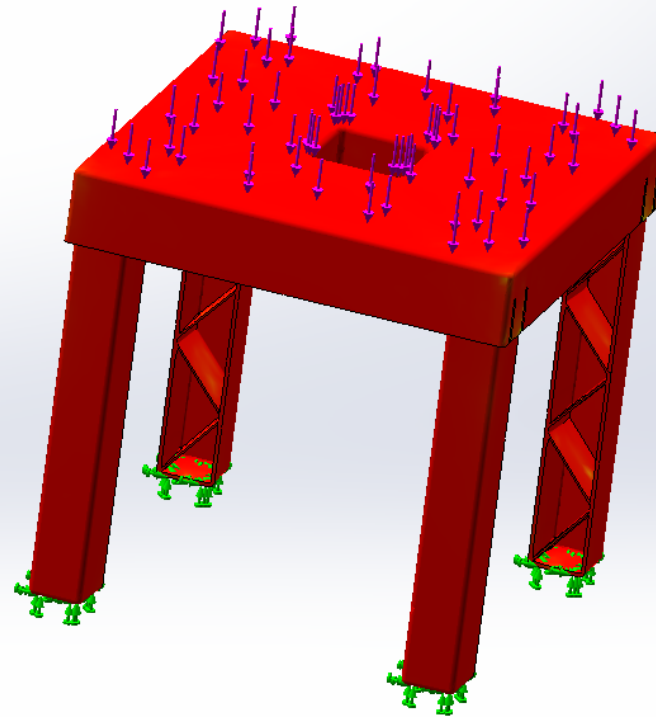
Oplossing voor Error

- Wat niet werkte:
- Verschillende materialen geprobeerd
- Assembly in elkaar met verschillende mates
- Mesh grote aanpassen
- Op forums gekeken voor oplossingen
- Krukje opnieuw maken
- Wat werkte wel?
- Aanhechting, vlak op vlak



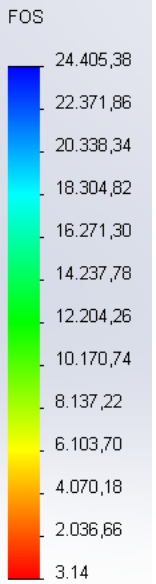
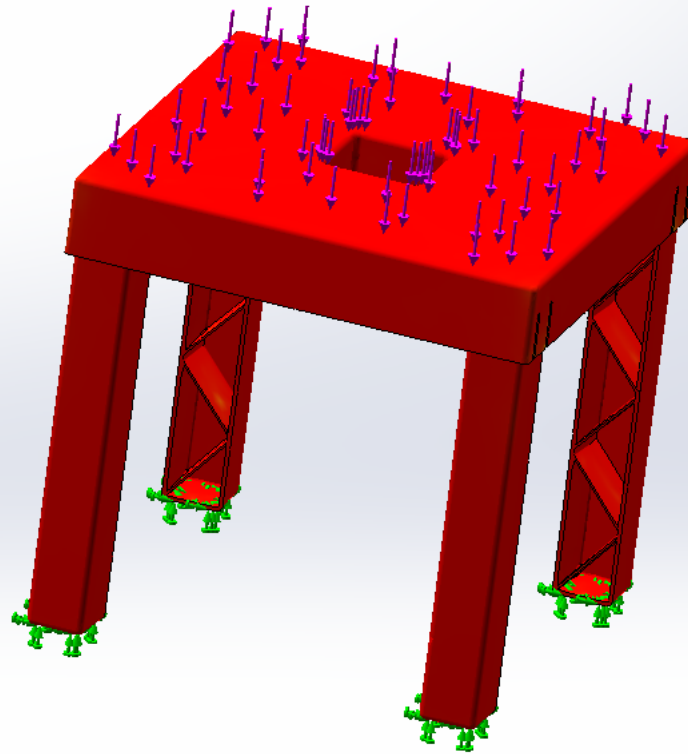
FOS - PE

Model name: Assem2
Study name: Study 7
Plot type: Factor of Safety Factor of Safety1
Criterion : Automatic
Factor of safety distribution: Min FOS = 1.7



FOS - PP

Model name: Assem2
Study name: Study 7
Plot type: Factor of Safety Factor of Safety1
Criterion : Automatic
Factor of safety distribution: Min FOS = 3.1



FOS - ABS

Model name: Assem2
Study name: Study 6
Plot type: Factor of Safety Factor of Safety1
Criterion : Automatic
Factor of safety distribution: Min FOS = 3.8

Chart Options ?

✓ ✗

Display Options ^

- Show min annotation
- Show max annotation
- Show plot details
- Show legend
- Show Min/Max range on shown parts only

Automatic

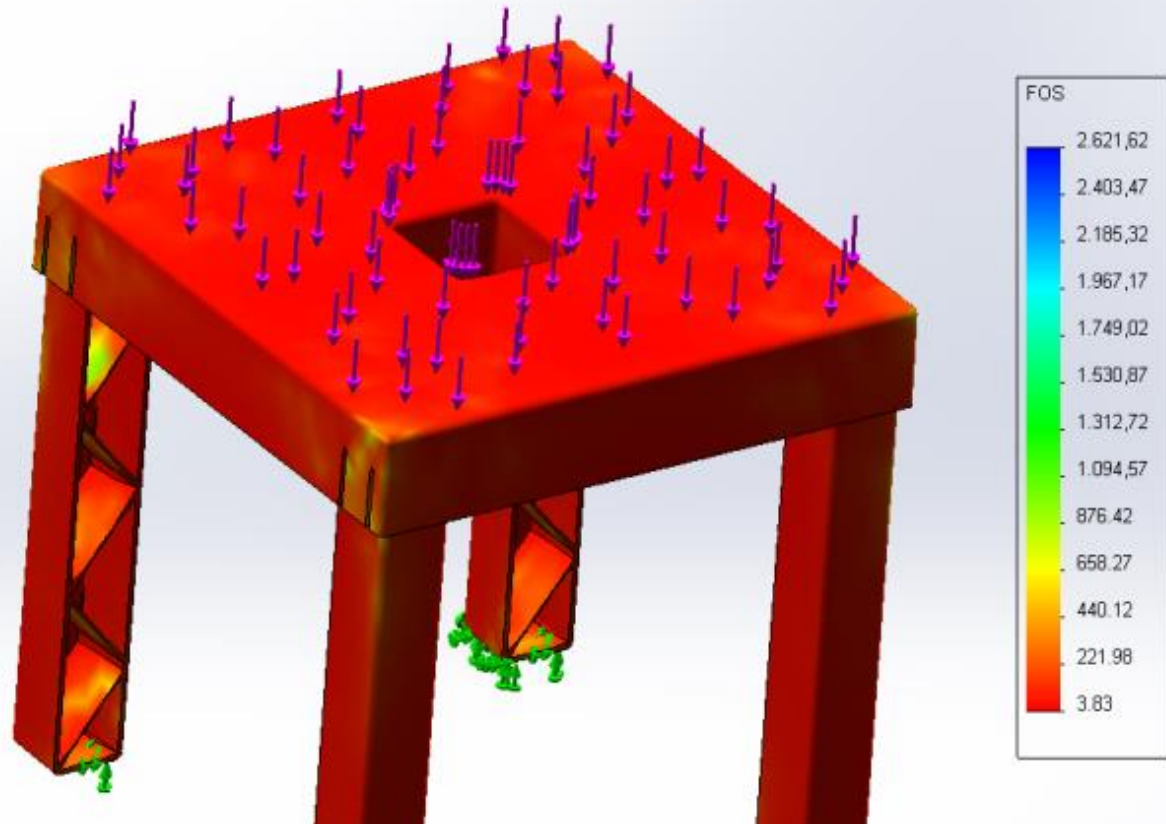
→ 3.82597852

→ 2621.61938477

Defined:

→ 3.82597852

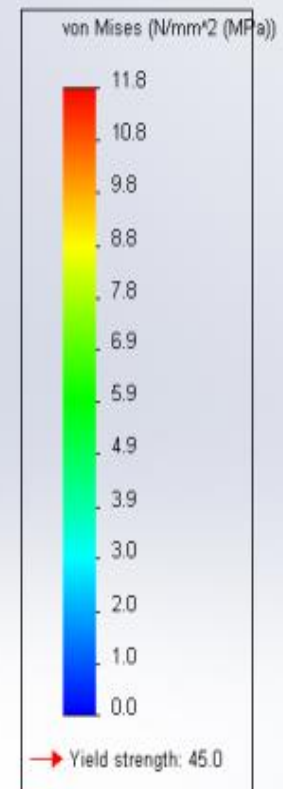
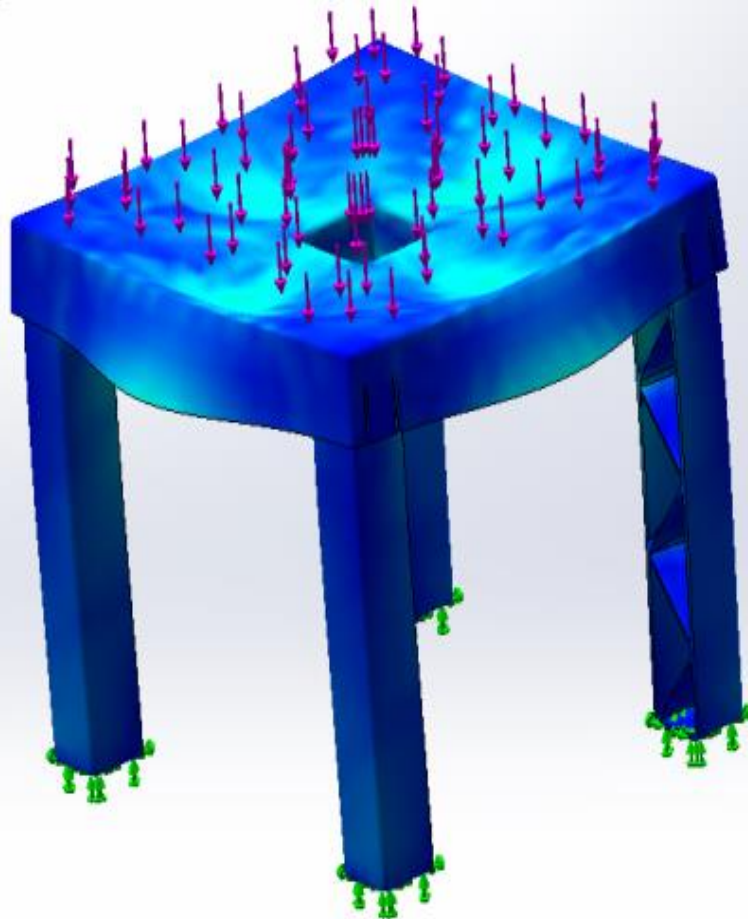
→ 2621.61938477



Von Missestress

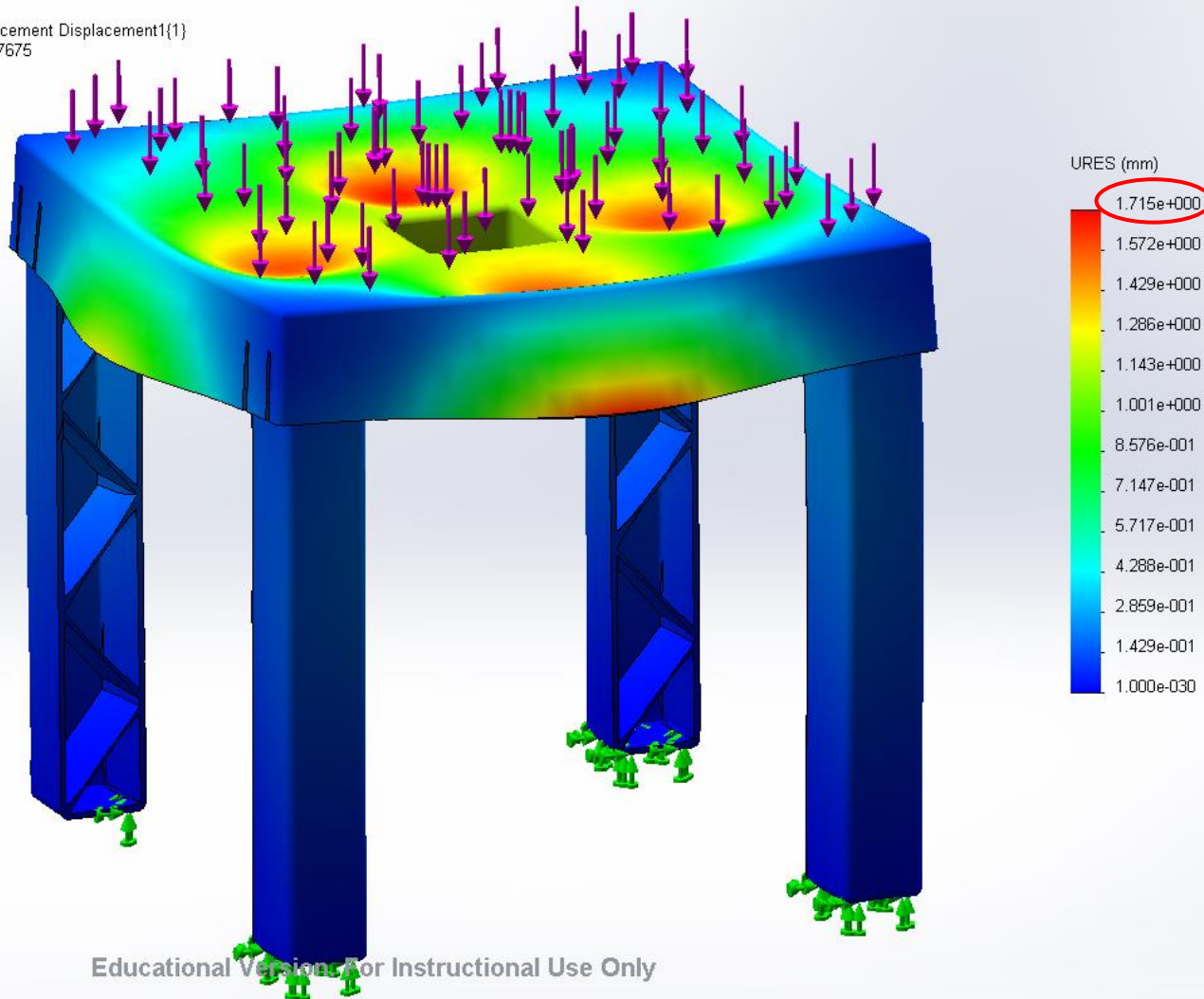
Model name: Assem2
Study name: Study 6
Plot type: Static nodal stress Stress1
Deformation scale: 17.7675

$$\text{Yieldstrength/Von Missestress} = 45,0 / 11,8 = 3,8 = \text{FOS}$$



Doorbuiging – URES (mm)

Model name: Assem2
Study name: Study 6
Plot type: Static displacement Displacement1{1}
Deformation scale: 17.7675



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