

COMPUTER AIDED ENGINEERING DESIGN (BFF2612)

LAB. EXERCISE 3 (FEM)

by

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Design: Dr Nizar

LAB. EXERCISE 3 (FEM)

HOLLOW BEAM

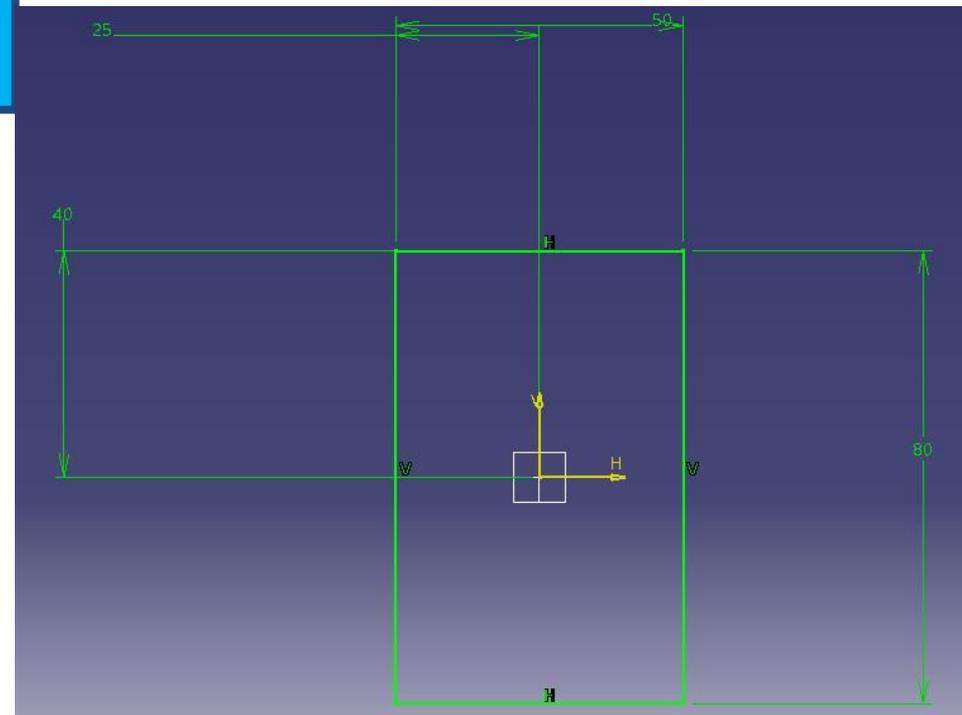


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STEP 1

Part Design

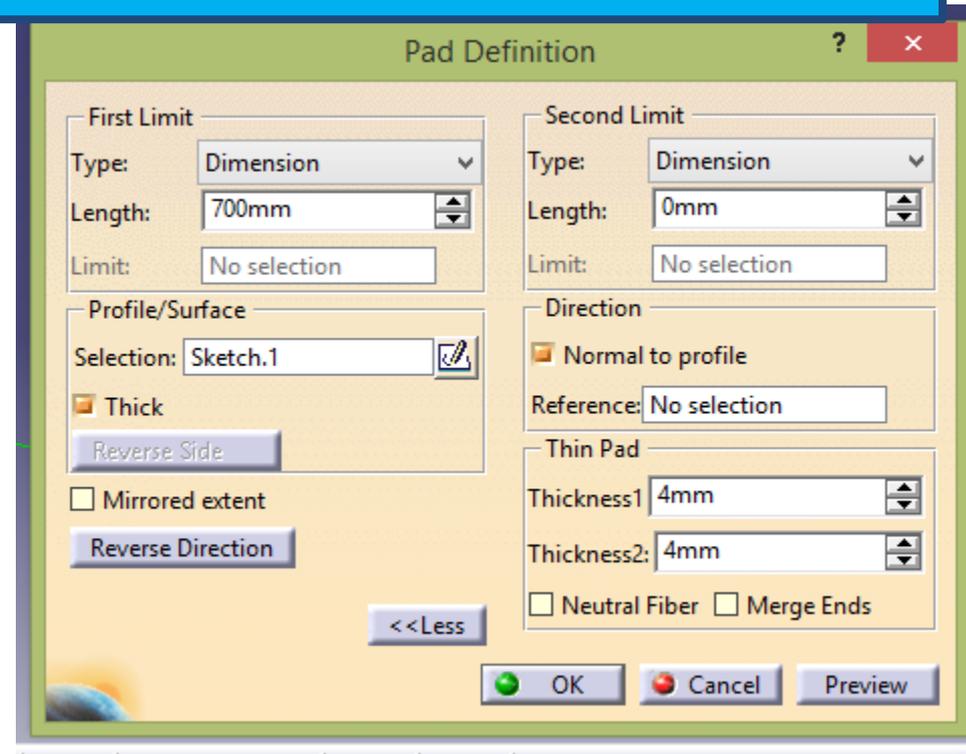
- Create a rectangle in YZ plane.
- Height is 80 mm, width is 50 mm.
- Place in the centre.



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STEP 2

- Exit from the sketch and do PAD with the length of 700 mm.
- Check on the Thick and insert the Thickness1 and Thickness2 of 4 mm each.



STEP 3

- Select the beam and Apply materials.
- Select Aluminum.



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STEP 4

Finite Element Analysis

- Select Analysis and Simulation in the Start.
- Select Generative Structural Analysis.
- Select Static.



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STEP 5

- Double click on nodes and elements or green lines.
- Change the size to become 10 mm.



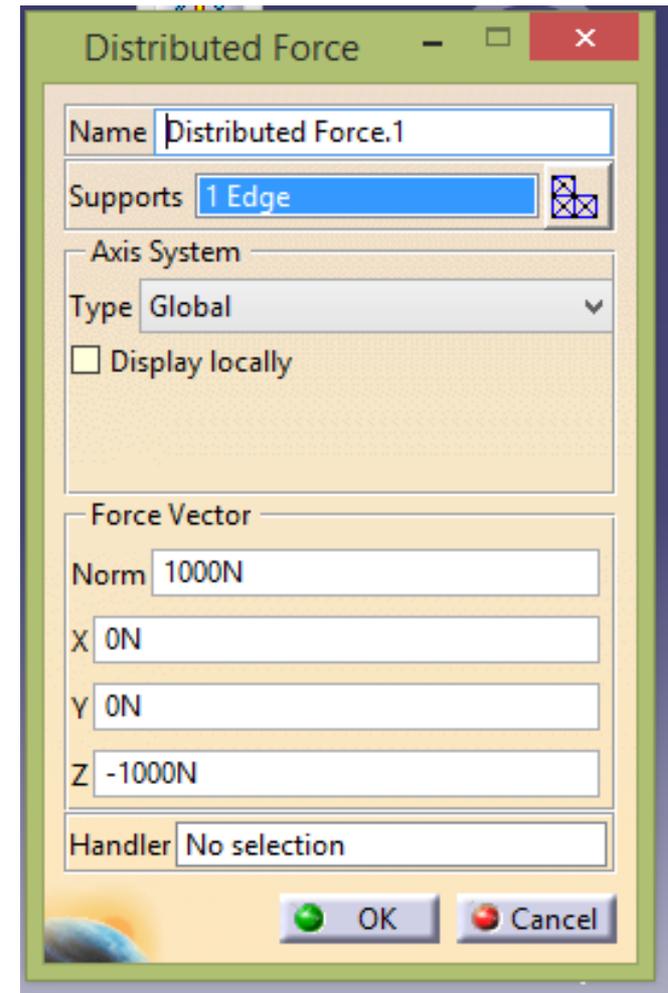
STEP 6

- Apply the boundary conditions.
- Select Clamp.
- Select one of the planes of the cross section of the beam as shown in figure.



STEP 7

- Apply the load.
- Select Distribution Force.
- Select the top edge in the other end of the beam and apply the load in Z direction with the value of -1000 N.



STEP 8

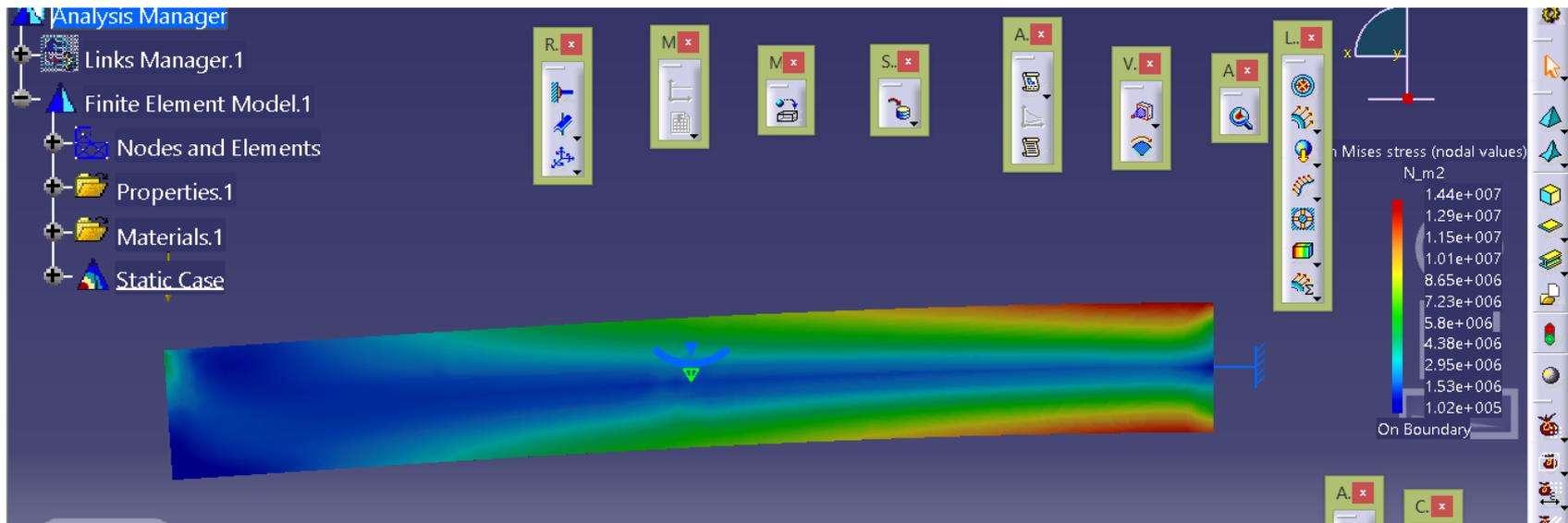
- Press Compute to get the result of the FEA.



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STEP 9

- After analysis completed, select Deformation to see the result.
- Select Von Mises to see the plastic yielding.



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