ANSYS 12 - Beam - Step 5

Author: Rajesh Bhaskaran & Yong Sheng Khoo, Cornell University

Step 5: Solution

Now that we have set up the boundary conditions, we can actually solve for a solution. Before we do that, let's take a minute to think about what is the post-processing that we are interested in. We are interested in the deflection and bending stress on the beam. We would also like to look at the force and moment reaction at our support A and B. Let's set up those post-processing parameters before we click solve button.

Let's start with inserting Total Deformation.

Outline > Solution (A6) > Insert > Total Deformation

Next let's insert beam tool that will enable us to look at the stresses on the beam.

Outline > Solution (A6) > Insert > Beam Tool > Beam Tool

We would also like to look at the Force Reaction at point A and B.

Outline > Solution (A6) > Insert > Probe > Force Reaction

Select ***Remote Displacement*** (which is point A) next to ***Boundary Condition*** under ***Details of "Force Reaction"***.

Details of "Force Reaction"

Definition	
Type	Force Reaction
Location Method	Boundary Condition
Boundary Condition	Remote Displacement
Orientation	Global Coordinate System
Options	
Result Selection	All
Display Time	End Time
Results	
X Axis	5.9174e-010 N
Y Axis	4000. N
Z Axis	1.4654e-010 N
Total	4000. N
Maximum Value Over Time	
Minimum Value Over Time	
Information	

Do the same step for Remote Displacement 2 (point B).
Next we will like to check and see that the moment at point A and B is zero.
Outline > Solution (A6) > Insert > Probe > Moment Reaction
Select ***Remote Displacement*** (which is point A) next to ***Boundary Condition*** under ***Details of "Moment Reaction"***.

Details of "Moment Reaction"

Definition	
Type	Moment Reaction
Location Method	Boundary Condition
Boundary Condition	Remote Displacement
Orientation	Global Coordinate System
Summation	Centroid
Options	
Result Selection	All
Display Time	End Time
Results	
Maximum Value Over Time	
Minimum Value Over Time	
Information	

Do the same step for Remote Displacement 2 (point B).
We are done setting up all the results. Click ***Solve*** at the top menu to obtain a solution. Wait for a minute for the solution.

Go to Step 6: Results

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