

ANSYS 12 - Beam (2D Element) - Step 4

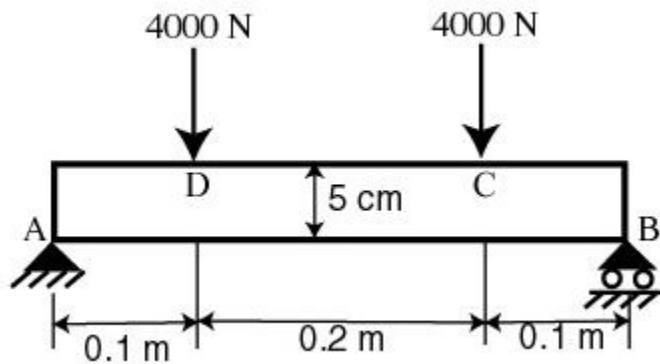
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Problem Specification

1. Pre-Analysis & Start-Up
2. Geometry
3. Mesh
4. Setup (Physics)
5. Solution
6. Results
7. Verification & Validation

Step 4: Setup (Physics)

We need to specify point BC's at A, B, C and D.



Let's start with setting up boundary condition at A.

Outline > Static Structural (A5) > Insert > Displacement

Select point A in the **Graphics** window and click **Apply** next to Geometry under **Details of "Displacement"**. Enter 0 for both **X Component** and **Y Component**.

| Details of "Displacement" | |
|---|--------------------------|
| Scope | |
| Scoping Method | Geometry Selection |
| Geometry | 1 Vertex |
| Definition | |
| Type | Displacement |
| Define By | Components |
| Coordinate System | Global Coordinate System |
| <input type="checkbox"/> X Component | 0. m (ramped) |
| <input checked="" type="checkbox"/> Y Component | 0. m (ramped) |
| Suppressed | No |

Let's move on to setting up boundary condition B.

Outline > Static Structural (A5) > Insert > Displacement

Select point B in the **Graphics** window and click **Apply** next to Geometry under **Details of "Displacement 2"**. Enter 0 for **Y Component** and leave **X Component** to be free.

| Details of "Displacement 2" | |
|--------------------------------------|--------------------------|
| Scope | |
| Scoping Method | Geometry Selection |
| Geometry | 1 Vertex |
| Definition | |
| Type | Displacement |
| Define By | Components |
| Coordinate System | Global Coordinate System |
| X Component | Free |
| <input type="checkbox"/> Y Component | 0. m (ramped) |
| Suppressed | No |

We can move on to setting up point force at point C and D.

Outline > Static Structural (A5) > Insert > Force

Select point C in the **Graphics** window and click **Apply** next to Geometry under **Details of "Force"**. Next to **Define By**, change **Vector** to **Components**. Enter -4000 for **Y Component**.

| Details of "Force" | |
|--------------------------------------|--------------------------|
| Scope | |
| Scoping Method | Geometry Selection |
| Geometry | 1 Vertex |
| Definition | |
| Type | Force |
| Define By | Components |
| Coordinate System | Global Coordinate System |
| <input type="checkbox"/> X Component | 0. N (ramped) |
| <input type="checkbox"/> Y Component | -4000. N (ramped) |
| Suppressed | No |

Do the same for point D.

[Go to Step 5: Solution](#)

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