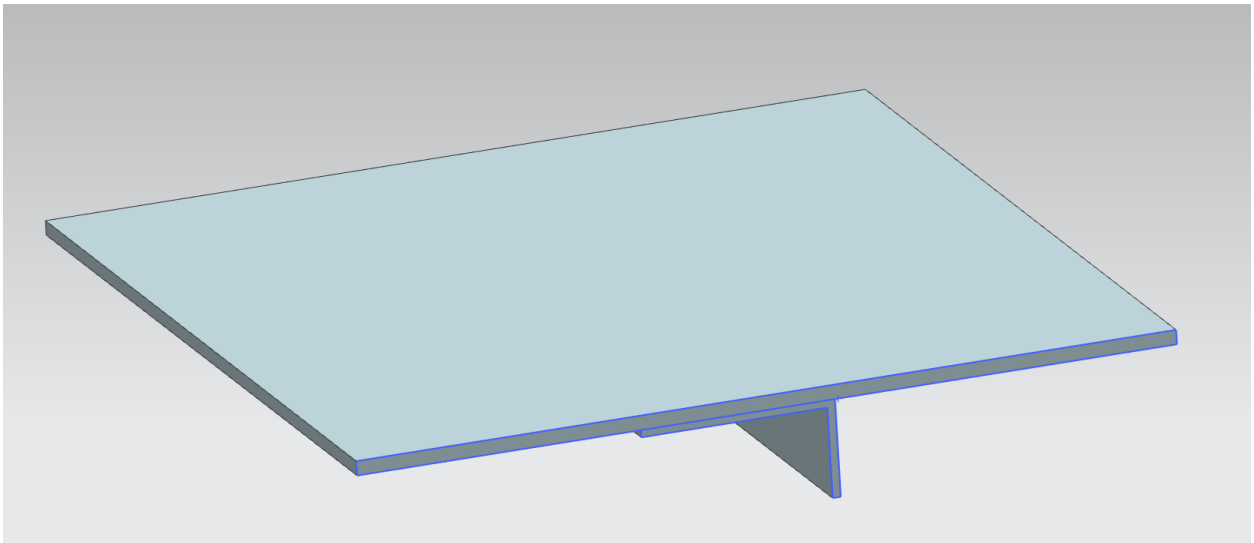
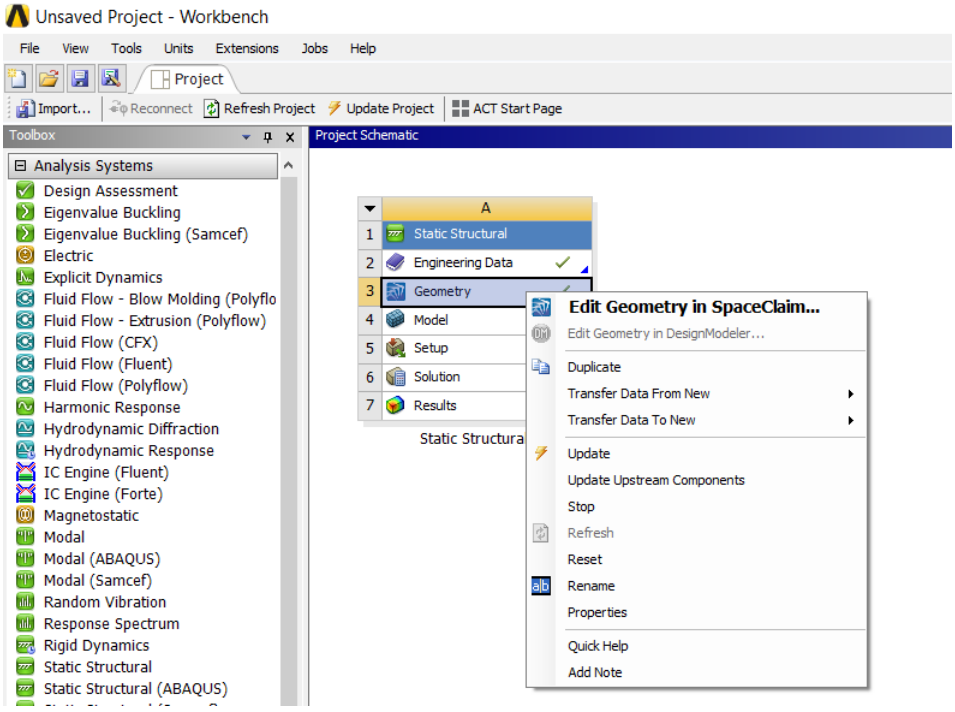
Model idealization using Ansys

1. Create geometry using CAD model



2. Import the geometry to Ansys



3. Open the ansys spaceclaim by double click on geometry
4. Select Prepare – Midsurface

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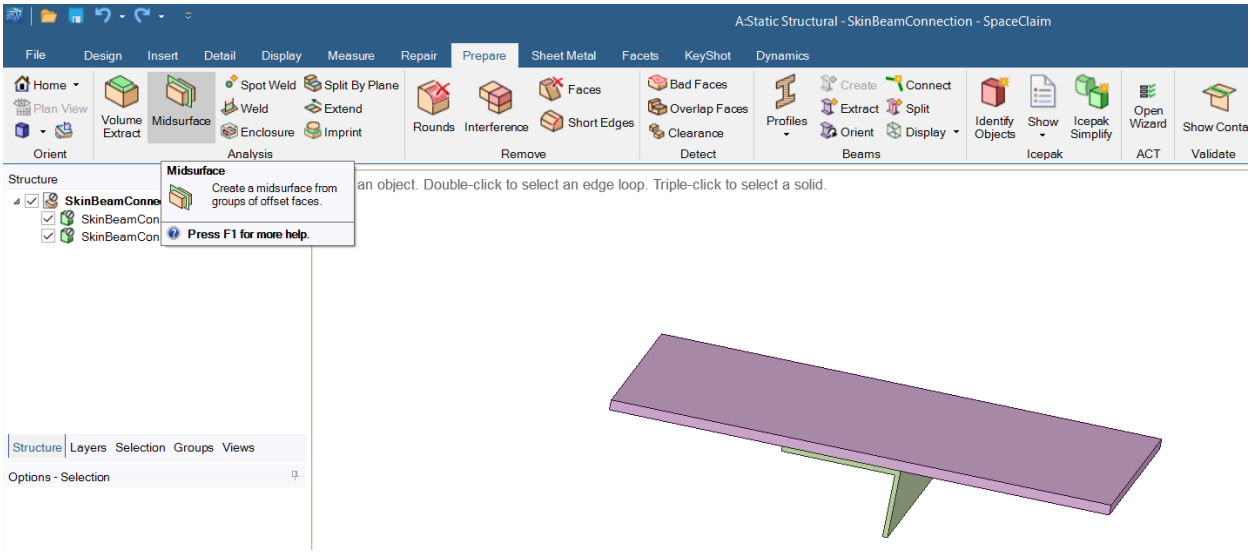
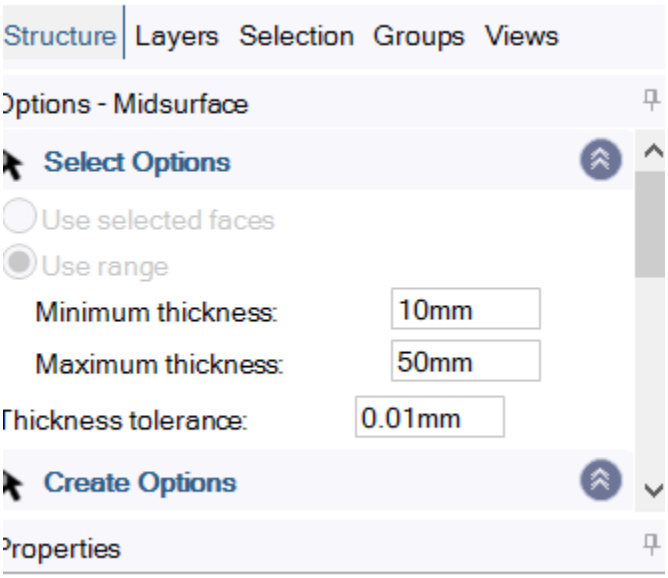


5. In the option – mid-surface window select use range, then specify the range of thicknesses that related to the solids you want to edit.



6. Select the whole geometry to specify the bodies you want to midsurface

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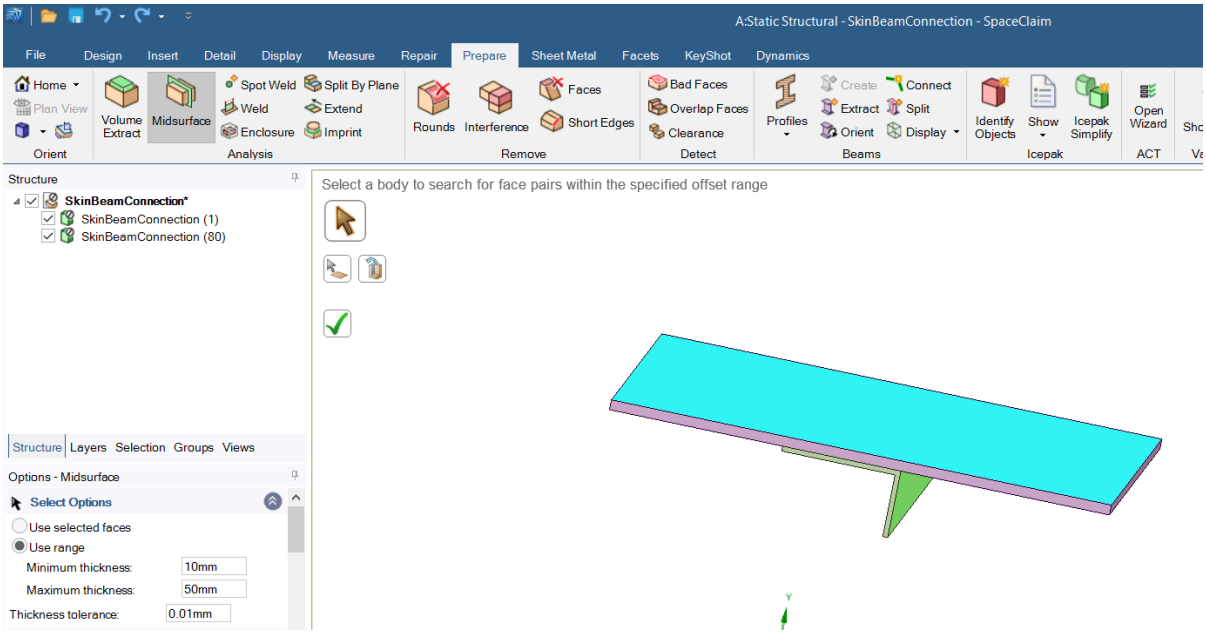
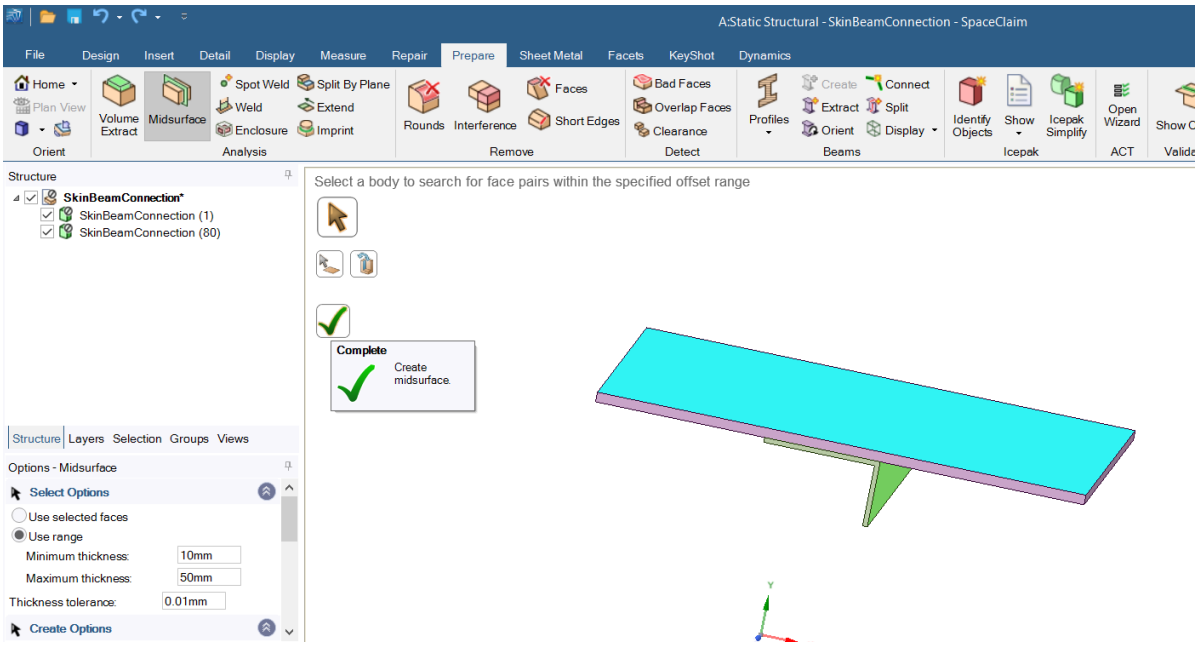


7. Click on complete to apply your process



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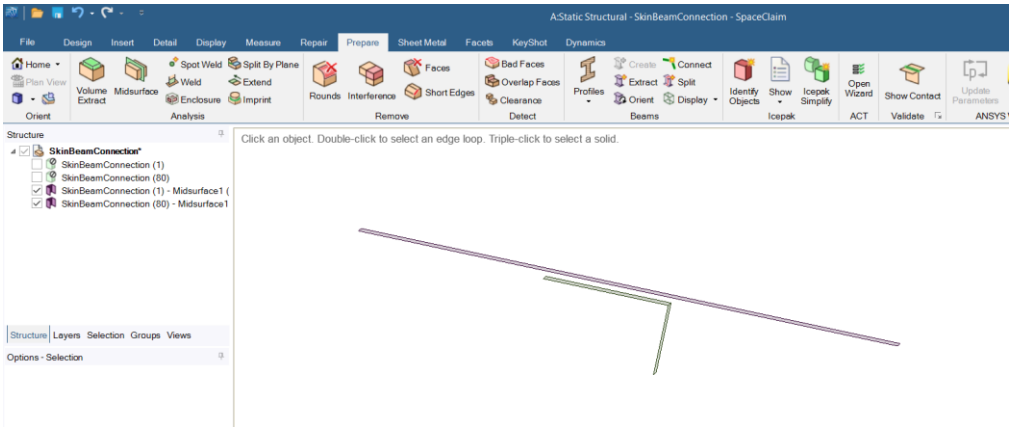
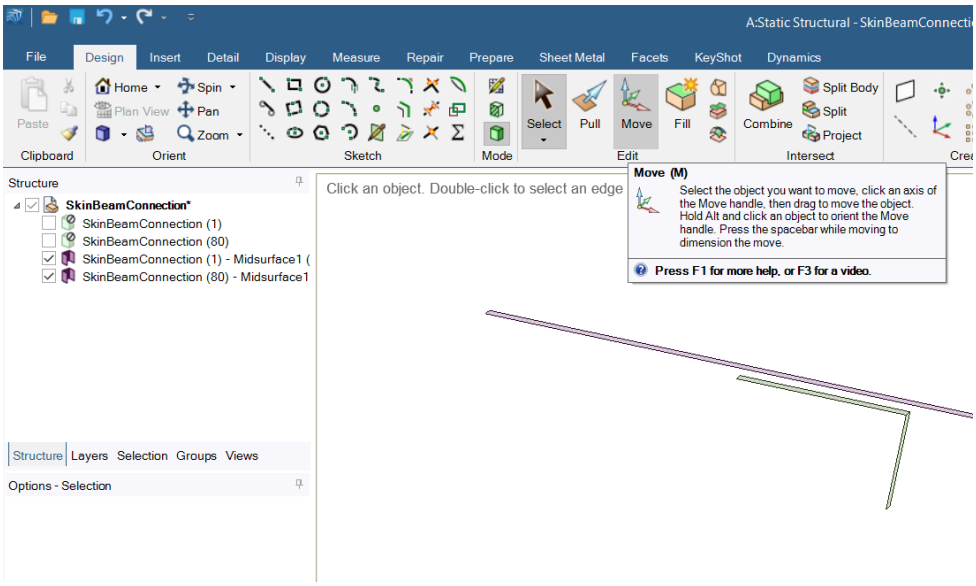
The final surfaces will look like the figure below



There is a problem in this configuration that the two surfaces should be connected together. To do so, we will use the move option

8. From the design tab select Move



9. Select the upper surface of the stringer

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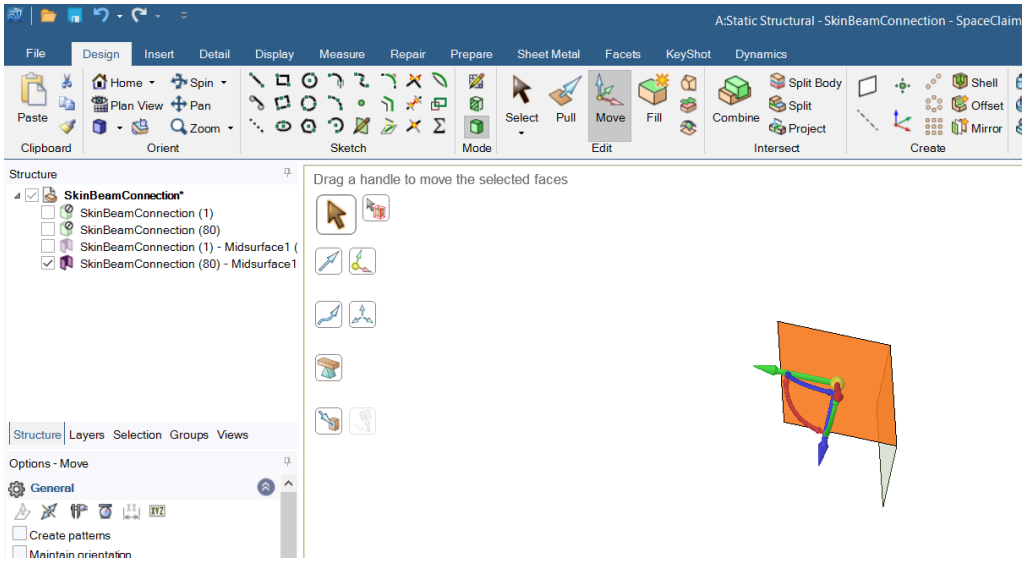
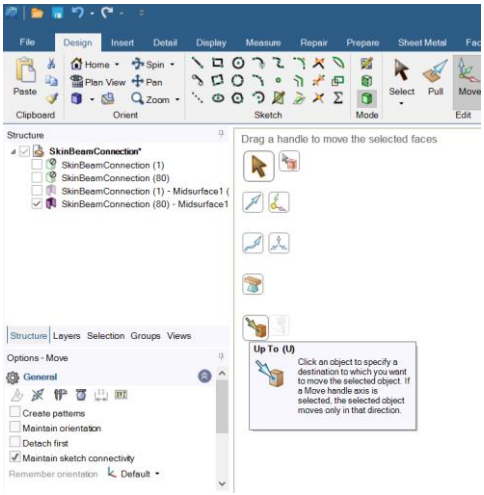


10. Then click on “up to “ option, and finally select the upper surface.



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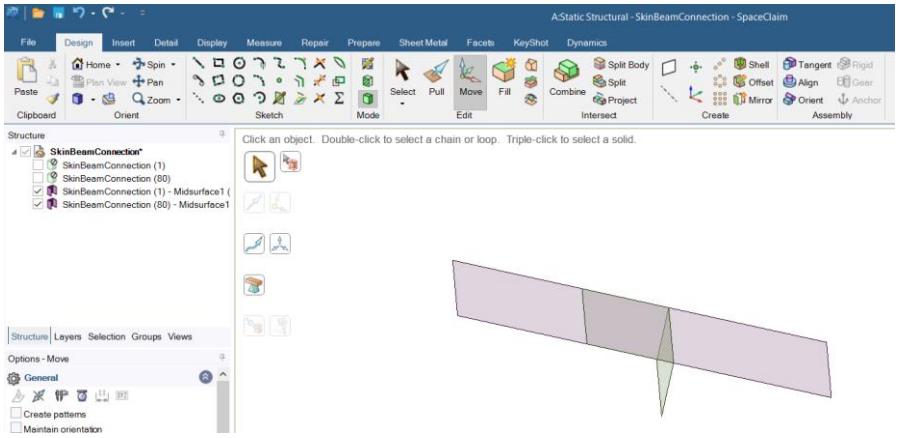
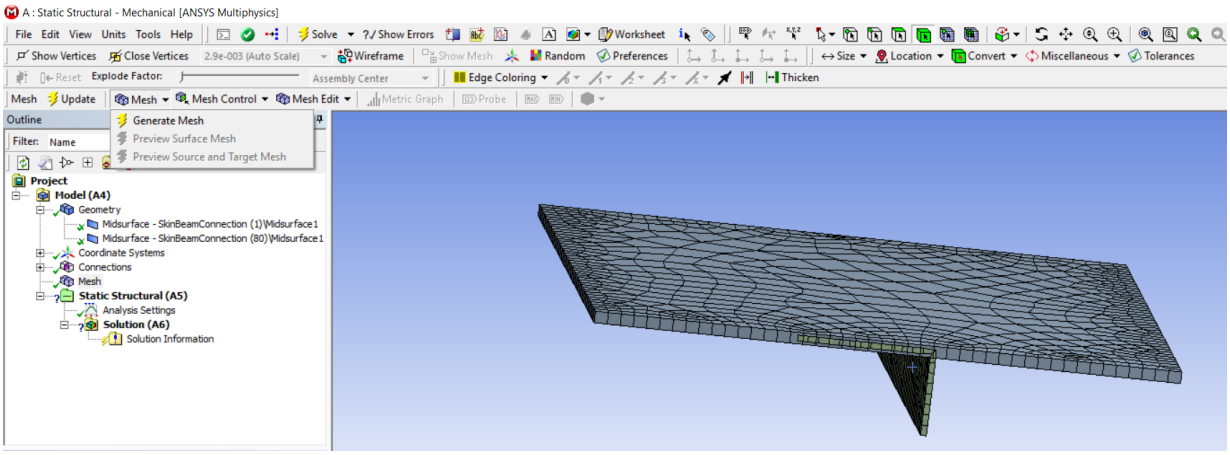


Open ansys model to excute a finite element model for the body. Notice thet Ansys by default will define

- The plates thickness
- The plates connections to bond

11. Click the mesh tab then click generate mesh to mesh your body



12. Right click on static structural to define forces and constraints

    And then insert the output you need by right slick on solution and select the output result

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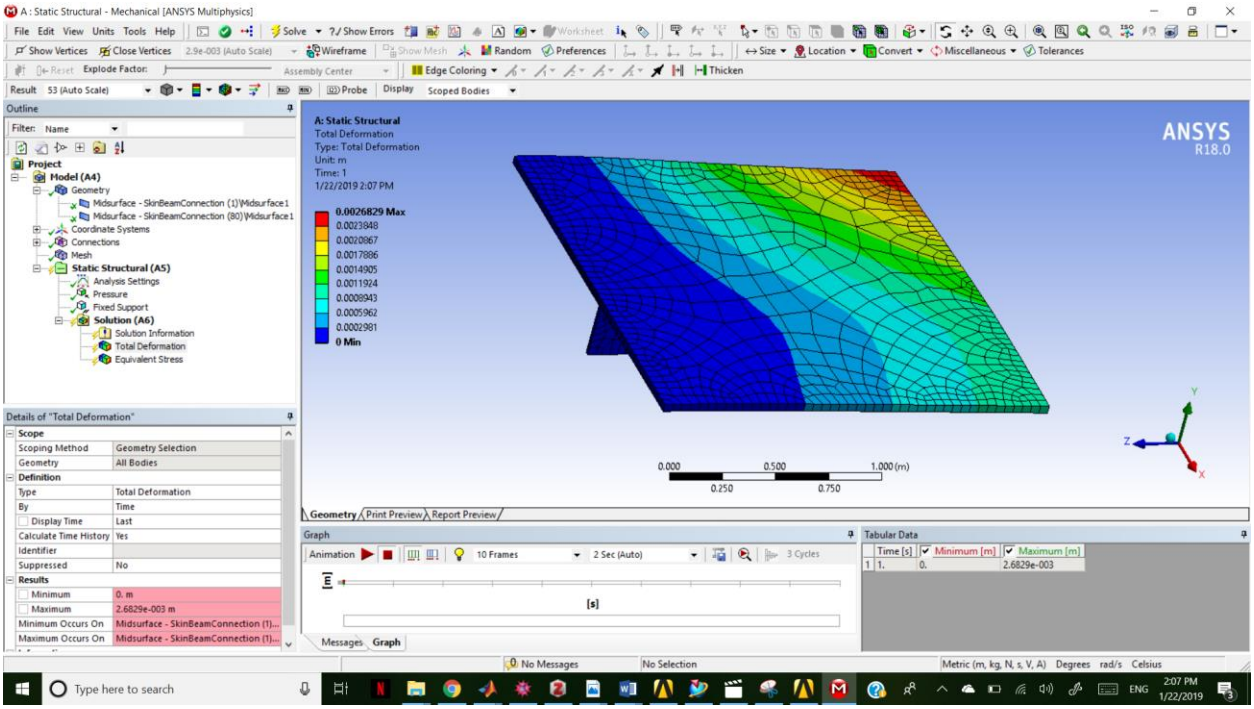
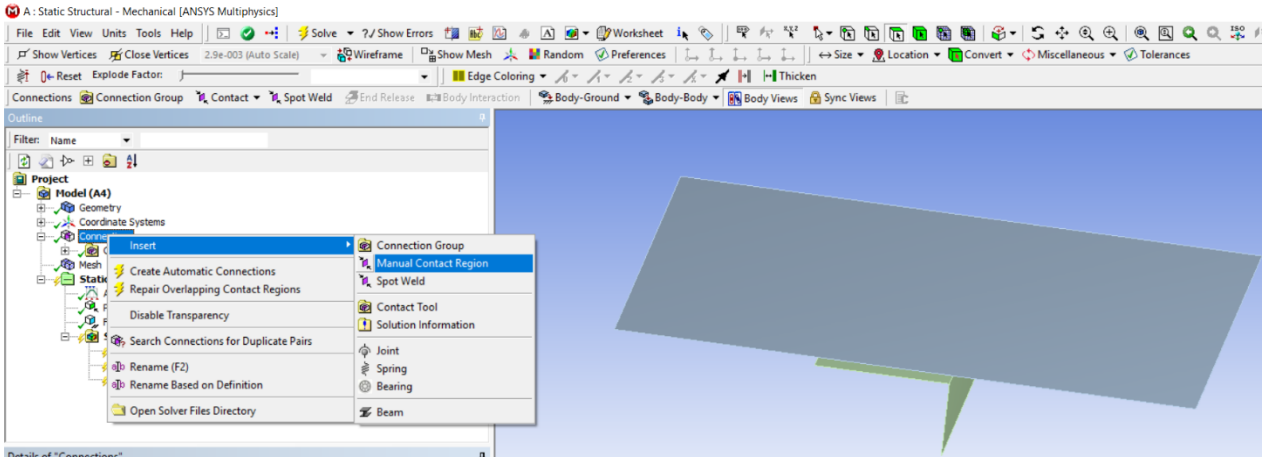


The correct method is to leave the distance between the two bodies as it is and define contacts manually in Ansys model.



Then select the two faces and define the contact type as bonded.

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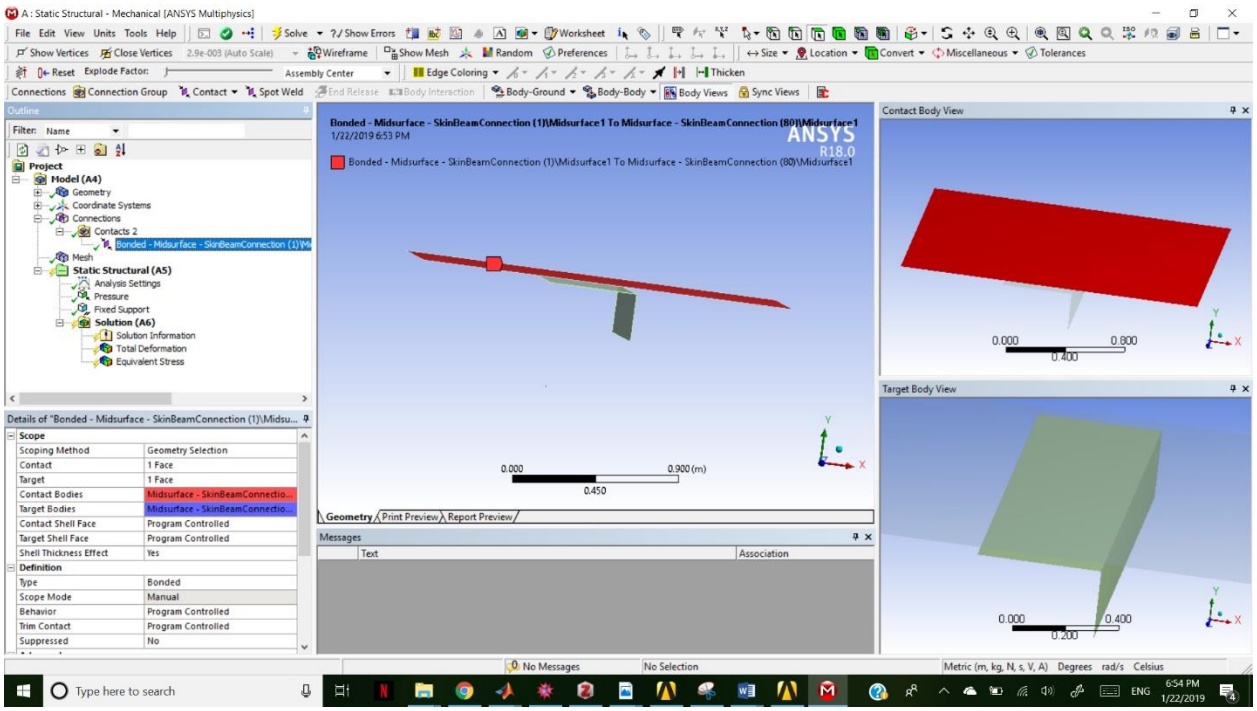

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