SOLIDWORKS TRAINING COURES SUMMARY

Exclusive from Conceptia Konnect, SOLIDWORKS Simulation course has been developed to deliver the power and potential of SOLIDWORKS simulation through a structured programme built upon the industry best practice. Let us support you to achieve the ultimate in design efficiency, productivity and innovation in the quickest time possible. This course will provide an in-depth coverage on the basics of Finite Element Analysis (FEA), covering the entire analysis process from meshing to evaluation of results for parts and assemblies, and also to create better designs in SOLIDWORKS by performing analysis and evaluating the behaviour of their parts and assemblies under actual service conditions.

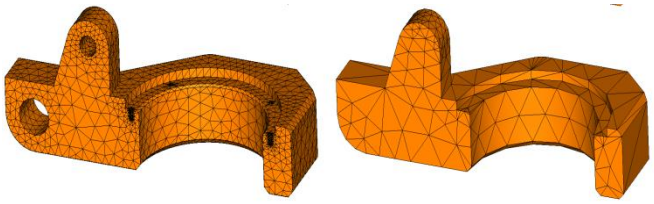
Prerequisites:

1. Knowledge of SOLIDWORKS and basic mechanical engineering concepts is recommended..
2. The engineer should have basic knowledge on FEA.

SOLIDWORKS Simulation Basic Course Details: -

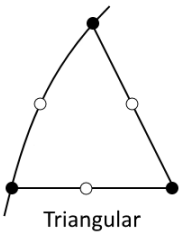
Introduction to SOLIDWORKS Simulation

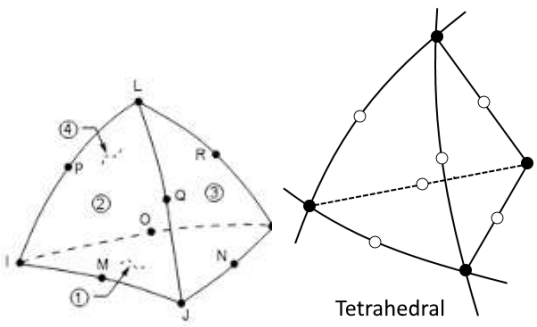
- What is SOLIDWORKS Simulation?
- What Is Finite Element Analysis?
- Build Mathematical Model
- De-featuring
- Idealization
- Clean-up
- Build Finite Element Model
- Solve Finite Element Model



Finite Elements

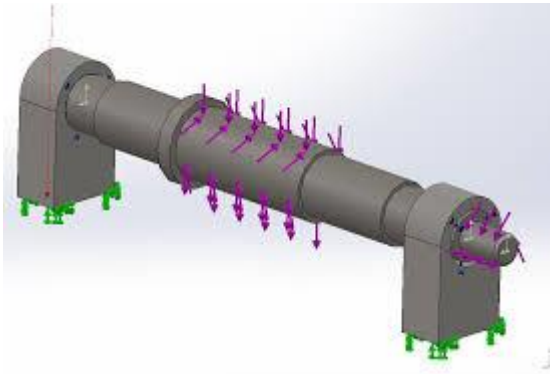
- Element Types Available in SOLIDWORKS Simulation
- First Order Solid Tetrahedral Elements
- Second Order Solid Tetrahedral Elements
- First Order Triangular Shell Elements
- Second Order Triangular Shell Elements
- Beam Elements
- Choosing Between Solid and Shell Elements
- Draft vs. High Solid and Shell Elements
- Degrees of Freedom
- Calculations in FEA





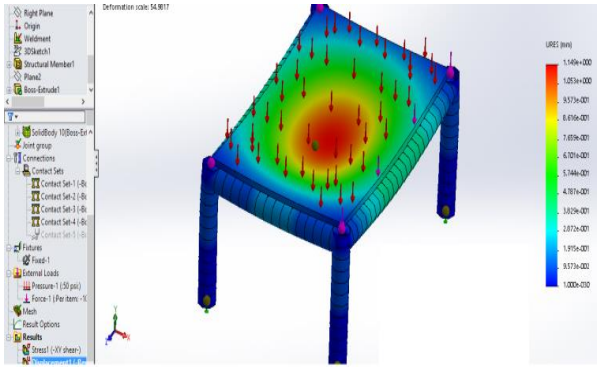
Conceptia Software Technologies Private Limited
22, 2nd Floor, 6th Block, 3rd Phase, Banashankari 3rd Stage, Bangalore-560 085, India
Phone: +91 9886755854 Office: +91 8884411865 vinay@ckonnect.in

The Analysis Process



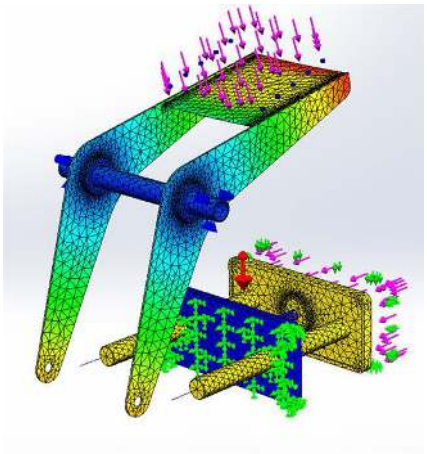
- Stages in the Process
- SOLIDWORKS Simulation Interface
- Project Description
- Plot Settings
- Assigning Material Properties
- Fixtures
- Fixture Types
- External Loads
- Pre-processing Summary

Meshing



- Standard Mesh
- Curvature Based Mesh
- Blended Curvature Based Mesh
- Mesh Density
- Element Sizes
- Minimum Number of Elements in a Circle
- Ratio
- Mesh Quality

Assembly Analysis with Contacts



- Project Description
- Stages in the Process
- Component Contact Component Contact: Options
- Component Contact: Default Setting
- Component Contact: Hierarchy and Conflicts
- Viewing Assembly Results
- Conclusion
- Handle Contact
- Required Force
- Pliers with Local Contact
- Local Contact
- Local Contact Types
- No Penetration Local Contact Properties, Accuracy & Remarks

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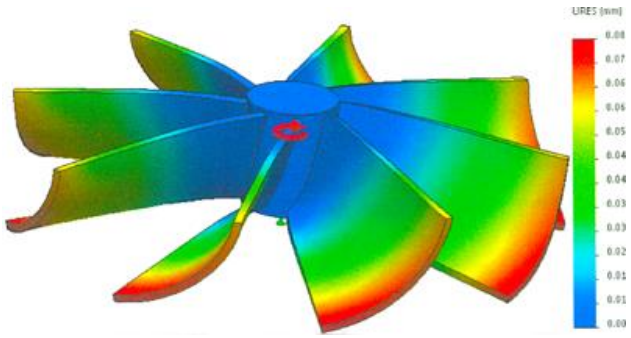
Compatible/Incompatible Meshes

- Project Description
- Compatible Mesh
- Incompatible Mesh
- Automatic Switch to Incompatible Mesh
- Incompatible Bonding Options
- Cyclic Symmetry

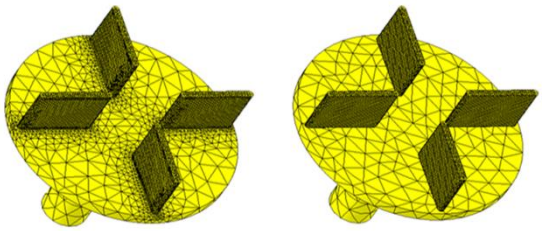


Symmetrical and Free Self-Equilibrated Assemblies

- Cylindrical Coordinate Systems
- Shrink Fit Parts
- Shrink Fit Contact Condition
- Soft Springs
- Inertial Relief

Analysis of Thin Components

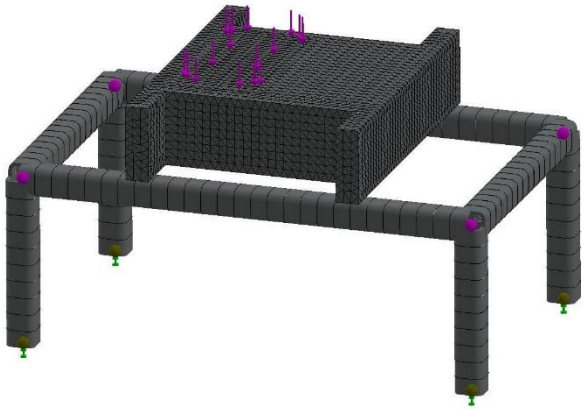
- Thin Components
- Solid vs. Shell Mesh
- Creating Shell Elements
- Shell Elements - Mid-plane Surface
- Thin vs. Thick Shells
- Shell Mesh Colours
- Changing Mesh Orientation / Alignment



Compatible vs. Incompatible mesh for adjoining parts

Mixed Meshing Shells & Solids

- Mixed Meshing Shells & Solids
- Bonding Shells and Solids
- Mixed Mesh: Supported Analysis Types
- Shell to Solid Bonded Contact



Beam Elements

- Beam Elements / Truss Elements
- Beam Joints: Locations
- Beam Joint Types
- Render Beam Profile
- Beam Stress components
- Bending Moment and Shear Force Diagrams

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