Fast CAE Modeling for Welding

DEP MeshWorks | Application Sheet

Rapid Welding process enables the user to quickly create welds with specific profiles and Heat Affected Zones to analyze stress and crack propagation.

Challenges faced in welding

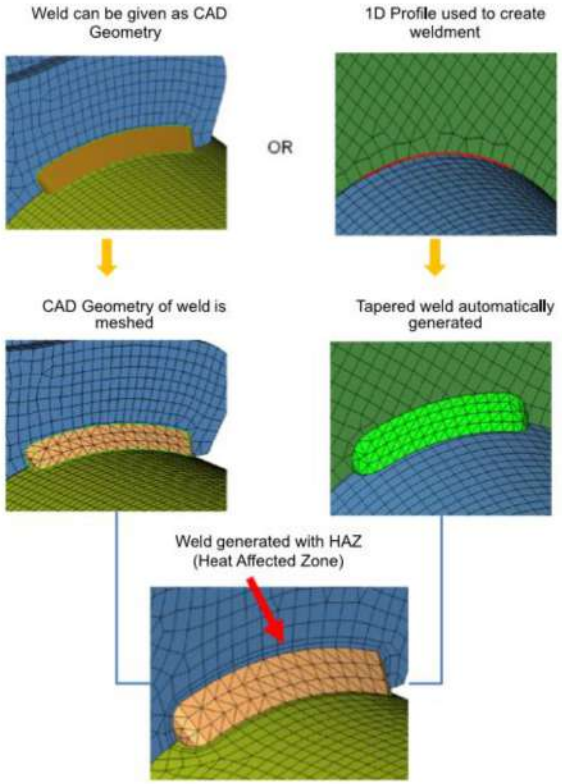
Typically, modeling for welds is very time consuming and difficult. This process requires a very experienced engineer with unique skillset for modeling the welds with specific profiles.

Solution

MeshWorks can address these types of solid welding for fabricated structures that can address various modelling scenarios with very minimal inputs. This process can be executed even by an entry level engineer. One big advantage is the welds can also be used for parametric studies.

Value

Up to 60% of time can be reduced using this process. The tool is user friendly and requires minimal inputs to execute the welding process, the training needed to learn the weldment function is very minimal.



Complete Pre & Post Processor

- Comprehensive FE/CFD pre & post processor with powerful tools for CAD clean-up, meshing (shell, tetra, hexa, hybrid, etc.), highly automated model assembly and results processing.
- Complex FE/CFD can be generated 30% faster and with better quality than other competitor products.

Customized Engineering Process Automation

- Customer CAE processes can be rapidly automated using a fast Record>Create-GUI>Plumb>Publish process.
- 2X to 10X time reduction can be expected for processes that are repeatable.

CAD & CAE Morphing Technology

- Reduces Finite Element (FE) & Computational Fluid Dynamics (CFD) model building time by 50% to 80%.
- Generated morphed CAD models representing optimized designs very rapidly and form the main link between CAE & Design teams.

Parametric CAE Technology

- Rapidly converts FE & CFD models to intelligent parametric CAE models, enabling fast design iterations & Design of Experiment (DoE) studies.
- Most comprehensive parametrization engine addressing several categories of parameters such as shape, gage, material, spot welds, seam welds, adhesives, design features, etc.

Multi-Disciplinary Optimization (MDO)

- Enables Multi-Disciplinary Optimization to meet design targets, minimize product weight, and minimize manufacturing cost using parameteric CAE models.