Autodesk® Simulation Mechanical/Multiphysics

Feature Comparison

Compare features to learn how Autodesk® Simulation Mechanical and Autodesk® Simulation Multiphysics software can help meet the needs of your organization.

	Autodesk Simulation Mechanical	Autodesk Simulation Multiphysics
PREPROCESSING		
Direct Modeling with Autodesk® Inventor® Fusion	✓	✓
Defeaturing with Inventor Fusion	✓	✓
Inventor Parameters	✓	✓
8,000+ Materials in Library	✓	✓
2D, Beam, and Plate Modeling	✓	✓
Automatic Surface Meshing	✓	✓
Automatic Tetrahedral Meshing	✓	✓
Automatic Hexa-Dominant Meshing	✓	✓
Automatic Boundary Layer Meshing	✓	✓
Automatic Midplane Meshing	✓	✓
Pressure Vessel Design & Meshing	✓	✓
CONTACT MODELING		
Rigid Bonding	✓	✓
Butt Welds	✓	✓
Surface Contact with Friction	✓	✓
Surface Contact without Sliding	✓	✓
Sliding without Separation	✓	✓
Thermal Contact	✓	✓
LINEAR STRUCTURAL		
Static Stress	✓	✓
Fatigue	✓	✓
Natural Frequency (Modal)	✓	✓
Modal with Load Stiffening	✓	✓
Response Spectrum	✓	✓
Random Vibration	✓	✓
Frequency Response	✓	✓
Transient Stress	✓	✓
Critical Buckling Load	✓	✓
Dynamic Design Analysis Method		✓
NON-LINEAR STRUCTURAL		
Large Displacement	✓	✓
Non-Linear Material Models	✓	✓
Flexible and Rigid Body Motion	✓	✓
Non-Linear Buckling	✓	✓
Dynamic Analysis (MES)	✓	✓
HEAT TRANSFER		
Steady-State Heat Transfer	✓	✓
Transient Heat Transfer	✓	✓

	Autodesk Simulation Mechanical	Autodesk Simulation Multiphysics
INCOMPRESSIBLE FLUID FLOW		
Steady-State Fluid Flow		✓
Unsteady Fluid Flow		✓
Flow Through Porous Media		✓
Open Channel Flow		✓
Mass Transfer		✓
MULTIPHYSICS		
Thermal-Structural Coupling	✓	✓
Fluid-Thermal Coupling		✓
Fluid-Structural Coupling		✓
Electrostatics		✓
Joule-Heating Effect		✓
Autodesk Moldflow® Interoperability	✓	✓
POST PROCESSING		
Contour Display	✓	✓
Vector Display	✓	✓
Isoline & Isosurface Display	✓	✓
Custom Result Types	✓	✓
Stress Linearization	✓	✓
Slice Planes	✓	✓
Mirror Planes	✓	✓
3D Visualization for 2D & Beam Models	✓	✓
Particle & Streamline Tracking		✓
Graphing Over Time or Along Path	✓	✓
Customizable Presentations	✓	✓
Animations	✓	✓
Image and CSV File Export	✓	✓
Custom Reporting (PDF, HTML, Word)	✓	✓
GENERAL		
Parallel Windows Solvers	✓	✓
Parallel Linux Solvers	✓	✓
Distributed Computing (MUMPS)	✓	✓
Autodesk Vault PDM Interoperability	✓	✓