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

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

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Parallel Linux Solvers

Distributed Computing (MUMPS)

Autodesk Vault PDM Interoperability