

## SOLIDWORKS Simulation Product Matrix

The table below details the feature differences between SOLIDWORKS Simulation products.

	SOLIDWORKS Simulation Premium	SOLIDWORKS Simulation Professional	SOLIDWORKS Simulation Standard
<b>Ease of Use/Intuitiveness</b>			
Fully Embedded in SOLIDWORKS 3D CAD	✓	✓	✓
Learn Fast: Toolbar Menus, Context Sensitive Right-Mouse Menus, Built-In Tutorials, Searchable Help Documentation	✓	✓	✓
Help Documentation	✓	✓	✓
Get Help Fast: Local and Worldwide Support Services	✓	✓	✓
Knowledge Base	✓	✓	✓
<b>Concurrent Engineering</b>			
Fully Embedded in SOLIDWORKS 3D CAD	✓	✓	✓
Full Associativity with 3D Design Changes	✓	✓	✓
Support SOLIDWORKS Configurations	✓	✓	✓
SOLIDWORKS Material Properties Support	✓	✓	✓
Batch Run	✓	✓	✓
<b>Finite Element Analysis</b>			
Solid, Shell and Beam modeling	✓	✓	✓
h and p adaptive element type	✓	✓	✓
Mesh control capabilities	✓	✓	✓
Failure Mesh Diagnostic	✓	✓	✓
Simplify model tool for meshing	✓	✓	✓

	SOLIDWORKS Simulation Premium	SOLIDWORKS Simulation Professional	SOLIDWORKS Simulation Standard
Customizable Material Library	✓	✓	✓

### Contacts and Connectors

Bonded contact condition	✓	✓	✓
Node-to-node, surface-to-surface contact condition	✓	✓	✓
Shrink Fit condition	✓	✓	✓
Virtual Wall condition	✓	✓	✓
Connectors: bolt, spring, pin, elastic support and bearing	✓	✓	✓
Connectors Safety Check	✓	✓	✓
Self-contact condition	✓	✓	✓

### Post Processing

Contour, Iso-Surface, Surface, Section Result Plot	✓	✓	✓
Probe tool	✓	✓	✓
Design Insight	✓	✓	✓
Compare test data	✓	✓	✓
List values on selected entities	✓	✓	✓
Animation of Results	✓	✓	✓

### Communication

Customizable simulation report	✓	✓	✓
eDrawings of Simulation results	✓	✓	✓

### Linear Static Simulation for Assembly

Analyze the structural behavior or parts and assemblies under loading	✓	✓	✓
Fixtures to prescribe zero or non-zero displacements	✓	✓	✓

	SOLIDWORKS Simulation Premium	SOLIDWORKS Simulation Professional	SOLIDWORKS Simulation Standard
Structural loads	✓	✓	✓
Temperature loading	✓	✓	✓
Import Flow/Thermal Effects	✓	✓	✓
Calculation of stress, strain, displacement and FOS	✓	✓	✓
Calculation of reaction forces and moments	✓	✓	✓
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<b>Time Based Mechanism Motion Simulation</b>	✓	✓	✓
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<b>Design Comparison Studies</b>			
What-if scenarios based on defined variables (dimensions, mass properties, simulation data)	✓	✓	✓
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<b>Trend Tracker</b>			
Detect trends in results from different iterations of a static study	✓	✓	✓
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<b>Fatigue Simulation</b>			
Analyse the life expectancy of structure under repeated loading	✓	✓	✓
Theory of Cumulative Damage	✓	✓	✓
Outputs: life, damage and factor of safety plots	✓	✓	✓
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<b>Design Optimization (based on Simulation data)</b>	✓	✓	
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	SOLIDWORKS Simulation Premium	SOLIDWORKS Simulation Professional	SOLIDWORKS Simulation Standard
<b>Advanced Contacts &amp; Connectors</b>			
Thermal contact resistance condition	✓	✓	
Insulated condition	✓	✓	
Edge and spot weld connector	✓	✓	
<b>Event-Based Motion Simulation</b>			
	✓	✓	
<b>Frequency Simulation</b>			
Analyze the natural frequencies and mode shape of parts and assemblies	✓	✓	
Import Flow/Thermal Effects	✓	✓	
Load Stiffening	✓	✓	
<b>Buckling or Collapse Simulation</b>			
Analyze slender structure for critical buckling factors and the associated buckling mode shapes	✓	✓	
Import Flow/Thermal Effects	✓	✓	
<b>Structural Thermal Simulation</b>			
	✓	✓	
<b>Drop Test Simulation</b>			
Analyse the effect of the impact of a part or an assembly on a target surface	✓	✓	

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Inputs: drop height, gravity, velocity at impact	✓	✓	
Outputs: stress, displacement, and strains	✓	✓	

### Pressure Vessel Design Simulation

Analyze the structural behaviour or parts and assemblies under loading	✓	✓	
Linear combination and square root of the sum of the squares (SRSS)	✓	✓	

### Submodeling Simulation

Analyze the structural resistance of a sub model from a main assembly	✓	✓	
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### 2D Simplification

Plane Stress	✓	✓	
Plane Strain	✓	✓	
Axisymmetric	✓	✓	

### Load Case Manager

Evaluate the effects of various load combinations on your model	✓	✓	
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### Non Linear Simulation

Transient (time dependent) loads	✓		
Large component deformation	✓		
Nonlinear materials	✓		
Self-contact for nonlinear analysis	✓		

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	SOLIDWORKS Simulation Premium	SOLIDWORKS Simulation Professional	SOLIDWORKS Simulation Standard
Real-time visual updates while solving	✓		
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<b>Dynamic Simulation</b>			
Modal Time History Analysis	✓		
Harmonic Analysis	✓		
Random Vibration Analysis	✓		
Response Spectrum Analysis	✓		
Estimate component life based on dynamic loading	✓		
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<b>Composites Components Simulation</b>	✓		