

Express vs. Simulation vs. Femap	Solid Edge Simulation Express	Solid Edge Simulation	Femap
<b>Geometry Types</b>			
Import geometry (Inventor, Pro/E, SW, SE)	✓	✓	✓
Import geometry from CATIA	✓	✓	✓
Parasolid, ACIS, IGES, STEP AP203	✓	✓	✓
Part analysis	✓	✓	✓
Assembly analysis		✓	✓
Thin parts, sheetmetal parts, shells	✓	✓	✓
Beams, Trusses		planned	✓
<b>Analysis Types</b>			
Stress & displacement	✓	✓	✓
Modes	✓	✓	✓
Buckling		✓	✓
Thermal stress		✓	✓
Linear contact with friction		✓	✓
Heat transfer - steady state		planned	✓
Heat transfer - transient			✓
Temperature dependent materials		planned	✓
Optimization		planned	✓
Frequency response (modal and direct)			✓
Transient response (modal and direct)			✓
Complex eigenvalues (modal and direct)			✓
Random response			✓
Response spectrum			✓
DDAM			✓
Composites			✓
Nonlinear statics			✓
Nonlinear dynamics			✓
Geometric nonlinearity (large displacement)			✓
Material nonlinearity			✓
Nonlinear contact			✓
Fluid flow			✓
<b>Usability</b>			
Multiple studies, "what if scenarios"		✓	✓
Parameters & design tables	✓	✓	✓
Customizable material library	✓	✓	✓
Customization (API)		planned	✓
Macro record, edit and playback			✓
<b>Environments (loads and constraints)</b>			
Uniform pressure & force on faces	✓	✓	✓
Directional pressure & force		✓	✓
Non-uniform pressure and force		✓	✓
Force on edges	✓	✓	✓
Force on vertices		✓	✓
Body loads: gravity & centrifugal		✓	✓
Special loads: torque, bearing		✓	✓
Loads nodes and elements		✓	✓
Temperature, convection, radiation, heat power		planned	✓
Equation based loading			✓
Function based loading			✓
Constraints on faces	✓	✓	✓
Constraints on edges	✓	✓	✓
Constraints on vertices		✓	✓
Constraints on nodes			✓
Multipoint constraints			✓
Directional and prescribed constraints		✓	✓
<b>Assembly Connectors</b>			
Springs, elastic foundation			✓
Pin, bolts, rigid			✓
Glued connection		✓	✓
Thermal contact resistance			✓
<b>Finite Element Model Creation</b>			
Solid tet mesher	✓	✓	✓
Solid hex mesher		✓	✓
Surface mesher	✓	✓	✓
Surface fre, mapped, parametric, projection meshing			✓
1D element mesher			✓
Mesh size control (overall)	✓	✓	✓
Mesh control (sizing) on geometry		✓	✓
Feature suppression and removal		✓	✓
Geometric mesh controls (between, region, connect...)		✓	✓
Mesh transition between boundaries			✓
Mesh transform (translate, rotate, mirror)			✓
Extrude, revolve, sweep			✓
Edit nodes and elements			✓
Planar element editing (element splitting)			✓
Remesh			✓
Coincident node merging			✓
<b>Visualization</b>			
Entity transparency display		✓	✓
Element quality display		planned	✓
Stress plot, deformation, displacement plot	✓	✓	✓
Factor of safety calculation and plot	✓	✓	✓
Principal stress, directional stress, strain plots		✓	✓
Result probing, listings		✓	✓
Dynamic section, iso plots		planned	✓
Scaled plots, superimposed plots, customizations		✓	✓
Resonant frequencies, mode shape plots	✓	✓	✓
Temperature, heat flux plots		planned	✓
Multi-set transient animations			✓
Multi-set frequency animations			✓
Streamlines			✓
Cutting planes		planned	✓
Iso-surface plots		planned	✓
Free body diagrams			✓
Beam shear and bending moment diagrams			✓
<b>Engineering Collaboration</b>			
HTML report	✓	✓	
Word and Excel reports		planned	SA Toolkit
Publish images of analysis results	✓	✓	✓
Animation and save as AVI	✓	✓	✓
Detailed HTML report customization		v2	✓
Save as bitmap, JPEG, VRML, XGL		✓	✓
JT format for model and results data		v2	✓
Export to other FEA systems		Femap only	✓
Teamcenter support		planned	