



/ Ansys Durability Solution - Capability Chart

/ Durability Capability Chart	Ansys Mechanical	Ansys LS-Dyna	Ansys Motion	Ansys Sherlock	Ansys nCode DesignLife PRO	Ansys nCode DesignLife PREMIUM	Ansys nCode DesignLife ENTERPRISE
Material Models							
Standard	●	●	●	●	●	●	●
Mean Multi-Curve	● (3)	●	●		●	●	●
R-Ratio Multi-Curve	● (3)				●	●	●
Temperature Multi-Curve	● (3)				●	●	●
Haigh Multi-Curve (1)						●	●
Bastenaire (1)						●	●
Gray Iron (2)						●	●
Custom using Python Scripting						●	●

1 = Available with only Stress Life
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Load data handling							
Linear Superposition	●	●	●	●	●	●	●
Full Transient	●	●	●		●	●	●
Constant Amplitude	●	●	●	●	●	●	●
Duty Cycle	▲	▲		●	●	●	●
Aero Spectrum Input		▲				●	●
Random Vibration (PSD)	●	●		●		●	●
Swept Sine Loading	●	●	●	●		●	●
Hybrid Load Provider (Superposition of time series, Transient, Constant amplitude loads)						●	●
Filter loading inputs for efficient processing			●			●	●
Functions for import, Display, Manipulation of loading inputs		▲				●	●
Duty Cycle Options Different channels for different events, Mix different types of event within duty cycle, Nesting of duty cycles, Loading Sequence				▲	▲	●	●
Duty Cycle processing options Calculate event damage independently, logically concatenate schedule, Fast approach including consideration of residuals				▲	●	●	●

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Multi Axial Assessment							
Biaxial		▲	▲		●	●	●
Multiaxial		▲	▲	●		●	●
Auto-Correction					●	●	●

Mean Stress Corrections							
FKM Guideline (1)					●	●	●
Goodman & Goodman Tension Only (1)	●	●	●		●	●	●
Gerber & Gerber Tension Only (1)	●	●	●		●	●	●
Soderberg (1)	●	●	●				
Walker (1)						●	●
ASME Elliptical (1)	●		●				
Morrow (2)	●	●	●		●	●	●
Smith Watson Topper (2)	●	●	●		●	●	●
Interpolate multiple curves	● (4)	● (4)			● (4)	●	●

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Notch Correction (Stress Gradient Corrections)

FKM Guidelines (1)						●	●
User Defined (1)	▲					●	●
Critical Distance (1)						●	●

Multiaxial damage models

Wang Brown (2)						●	●
Wang Brown with Mean (2)						●	●

Plasticity corrections

Neuber (2)	●		●		●	●	●
Hoffman-Seeger (2)					●	●	●
Seeger-Heuler (2)						●	●
Utilize Elasto-Plastic Stress/Strain without Plasticity Corrections		●	●	●		●	●

Stress Combination Methods or Critical Plane Analysis

Stress-strain tracking for accurate cycle positioning (2)		●	●		●	●	●
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Back Calculation to Target Life

Back Calculation to Target Life				▲	●	●	●
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● Full Support

▲ Limited Capability

■ Requires more than 1 product

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Safety Factor Solver	▲	▲				●	●
Dang Van Solver						●	●
Spot Weld Fatigue							●
Seam Weld Fatigue							●
Vibration Fatigue	●	●		●			●
Multi-Load Vibration Fatigue		●		●			●
Thermo Mechanical Fatigue	▲	●		●	▲		●
Adhesive Bond Fatigue							●
Parallel Processing	Only SMP 4-Cores	● (MPI)			2-Cores (Requires Parallel License for more) SMP & Distributed	2-Cores (Requires Parallel License for more) SMP & Distributed	2-Cores (Requires Parallel License for more) SMP & Distributed
Fatigue failure or coupled mechanical-fatigue analysis	▲	●		▲			
Animation for Fatigue damage development/Smart	▲	●					
Initial fatigue damage ratio or damage summation/Crack Growth	▲	▲				▲	▲
Combing damage ratio from material model	▲	●					
Virtual Strain Gauge and Virtual Sensor/ Strain Gauge Positioning						●	●
nCode Interface						●	●
Windows/Linux	●	●	Windows	●	Windows	●	●

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