



Unprecedented Reliability, With Verifiable Quality!

Leveraging the knowledge and insight gained through working with many of the world's leading aerospace experts, ESRD developed StressCheck® to enable standardization in support of best practices and take their strength analysis to the next level in reliability.

StressCheck is a revolutionary structural and strength analysis product that provides industry leading quality and reliability by focusing on the timeliness of information and productivity in engineering decision-making processes.

ESRD's founders are pioneers in the development of state of the art FEA methods and have built the most advanced features into **StressCheck**. **StressCheck**'s hierarchic framework of models is designed to support Verification and Validation (V&V) processes, which are now a National Standard¹. Furthermore, **StressCheck**'s unique infrastructure supports corporate requirements for standardization, providing a repository for corporate design knowledge.

StressCheck provides many advanced capabilities that make it the most useful tool for detailed stress analysis and design. Significant cost savings and enhanced readiness will result from using **StressCheck**.

"StressCheck's quality control features have given us the tool we need to perform detailed ... bonded joint analysis with confidence that the results are accurate."

"... StressCheck has greatly improved our ability to accurately predict the fatigue life of joints with interference fit fasteners and cold worked holes"

The Boeing Company

"This software tool ... includes an FEM-based handbook format which allows non-experts to utilize models prepared by specialists."

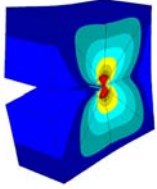
Lockheed Martin

¹ ASME V&V 10-2006: Guide for Verification and Validation in Computational Solid Mechanics. The American Society of Mechanical Engineers, ISBN No. 0-7918-3042-X (2006)



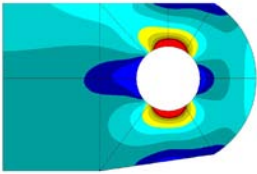
The robust element formulation in *StressCheck*® allows very large element aspect ratios, for example 200:1 or larger, yielding excellent results – with quality and convergence you can verify. Elements take on the shape of the associated geometry to accurately represent the actual part. Specialized tools allow importing boundary conditions from a global analysis. Robust and flexible post-processing allows the analyst to assess the quality of the solution and the convergence of the results.

Besides the capabilities listed below, *StressCheck* also offers powerful Linear, Nonlinear, Heat Transfer, Modal & Buckling Analysis, Margin Check, and Multi-Body Contact analysis, in addition to various CAD and FEA interfaces.



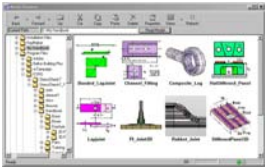
FRACTURE MECHANICS

The unique features in Fracture Mechanics clearly set StressCheck apart from other FEA products. You have powerful automatic meshing of embedded cracks combined with superconvergent point-n-click extraction methods to calculate stress intensity factors – all with automatic convergence reporting. Crack Path Analysis provides an automated procedure for predicting the propagation path of a crack.



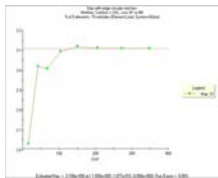
COLD WORK

Cold working analysis capabilities were developed in response to demand by the aerospace industry to replace existing time consuming and error prone techniques based on traditional methods that are unable to account for the variety of situations that appear in real structural components. With StressCheck you can accurately predict residual stresses due to cold working of complex parts.



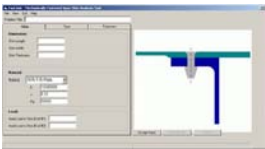
HANDBOOK

The StressCheck Handbook provides standard solutions for routine design and analysis tasks in a user-friendly environment – with confirmation of reliability. You can create a library of parametric models to serve as a repository for standardization and corporate design knowledge. You are no longer constrained by unknown assumptions in closed form solutions typical of classical handbooks that do not accurately describe real world problems.



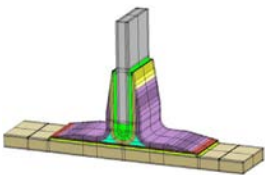
POST PROCESSING

StressCheck has long been known for its superior post-processing. A significant advantage is that all results are computed “on the fly” anywhere in the model - you do not have to anticipate where the critical areas will be. With StressCheck, you have at your disposal a wide variety of extraction methods that give you virtually every engineering result - and all come with an automatic assessment of accuracy.



TOOLKIT FEA

Understanding the importance of integration with other software tools, StressCheck supports an API-based COM industry standard interface technology. You can integrate StressCheck with other applications to create customized tools to automate repetitive analysis, saving valuable time while standardizing corporate knowledge.



STRESSCHECK COMPOSITES

StressCheck delivers state of the art FEA technology for the analysis of laminated composite materials and adhesively bonded joints. Material properties can be homogenized similar to conventional FEA products. StressCheck can also model individual plies as elements, providing extremely detailed analysis. The large aspect ratio higher-order elements allow you to analyze adhesive layers, which are typically much thinner than the adjacent structure. With StressCheck, reliable and accurate composite analysis is reality.

www.esrd.com



314-744-5021