



Industrie Service

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Stress analysis and Lifetime Assessment

A Product Information Sheet by the Plant Engineering Business Unit

Stress analysis and fatigue

An appropriate design concerning stress distribution and lifetime of any component is a major issue for all companies working in the field of aircraft design, automotive or railway transport systems, ship-building or any other mechanical engineering sector. The request for a weight-saving design, which still fulfills all requirements of quality and safety, led to an increased importance of computational stress analysis and higher demands for fatigue and lifetime prediction. At TÜV SÜD, we rely on modern and internationally recognised simulation tools and on a highly qualified and experienced staff. We are also able to offer testing equipment and various experimental setups.

Our Services

As an independent consultancy service provider, TÜV SÜD offers to perform or to review any stress analyses, concerning:

- Computational stress analysis
- Experimental stress analysis
- Determination of effective loads
- Component testing
- Research on technology and materials

- Determination of failure root causes
- Optimisation of component design
- Component diagnostics
- Development of suitable in-service inspection programs
- Third party evaluation

Your benefits

The systematic involvement of all our experts within the TÜV SÜD Group and the cross-linked know-how of our expert teams, guarantees excellent and cost-efficient results, even in the case of challenging technical applications.

- ▶ Identification of highly-stressed local areas
- ▶ Determination of fatigue level and accumulated usage factor
- ▶ Quantification and proof of incorporated safety margins
- ▶ Lifetime assessment / lifetime extension of highly stressed components
- ▶ Cost reduction for design, manufacturing- and re-design
- ▶ Third-party independency

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