



Industrie Service

Add value.
Inspire trust.

Failure analysis

Cause of defect investigation and prevention through targeted materials testing techniques.

Failure analysis investigates the causes of a component breakdown and shows the differences between a component's actual and requested profile. Targeted materials testing techniques allow conclusions to be drawn about excessive stresses acting on a component and explain why a part broke, corroded or became worn.

TÜV SÜD services

Microscopy and analytical techniques are key elements of failure analysis. TÜV SÜD testing laboratories offer the following analysis and testing services:

- Fractur surface investigations using optical and scanning electron microscopy (SEM)
- Metallographic investigations of micro-sections to determine failure mechanisms in the material structure
- Analysis of surface deposits, corrosion products and coatings using SEM
- Analysis of the chemical composition of surfaces using energy disperse X-ray analysis EDX
- Investigation of physical and mechanical properties, using tensile tests, notched bar impact tests and technological bending tests
- Quantitative chemical analysis of metals using a vacuum emission spectrometer (VES)
- On-site metallographic investigations for the non-destructive testing of the condition of systems and components

Your benefits

Failure analysis is aimed at identifying the particular failure mechanism and recommending actions for preventing these failures in the future. Combining materials testing techniques with related TÜV SÜD services (calculation, design, process and infrastructure engineering, water chemistry), we can offer:

- ▶ Statements on the cause of the failure that occurred
- ▶ Statements on rehabilitation and repair
- ▶ Statements for preventing failure in the future
- ▶ One-stop multidisciplinary problem solutions

Testing laboratory accredited by DAkkS (the German national accreditation body) according to EN ISO/IEC 17025 and Type A Inspection Body accredited according to EN ISO IEC 17020. The accreditations only apply to the scopes listed in the Annex to Certificates D-PL-14153-02-01 or D-IS-14153-02-07.