



The collapse of roofs, bridges or entire houses is usually caused by materials of inferior quality or a flawed calculation of their minimal endurance. Characteristics like strength, mutability, solderability or corrosive qualities are especially important in this regard. Take the mechanical characteristics of an airplane wing's load-bearing parts, for example. If those are stressed above the limit of their strength, a catastrophe is imminent, caused by mechanical failure.

This single example proves the importance of knowing the characteristics of your construction materials and being able to test their reliability over a long timespan.

The HTV Institute for Material Analysis's accredited testing laboratory for "measuring layer thickness of metals using x-ray fluorescence analysis" offers numerous other methods for the analysis of construction materials.

Optical microscopy

- Fracture surface analysis
- Evaluation for corrosion signs/surface defects

Optical microscopy on micro sections:

- Ascertaining structure condition/segregations
- Measuring porosity/cavities
- Measuring layer thickness (invasive) under DIN EN ISO 1463
- Uncovering hidden fractures/delaminations
- Ascertaining the geometry of welds or threads

Ion beam etching (HTV's MetaFinePrep® method) of micro sections can also prepare complex material combinations for analysis

Nanoindenter (measuring hardness)

Ascertaining material characteristics like hardness (Brinell, Vickers or Martens hardness) Young's modulus, creep under DIN EN ISO 14577

- Hardening depth/nitration depth
- Weld hardness measuring
- Hardness mapping

Ultrasound microscopy

- Uncovering internal defects such as cavities, pores, fractures, delaminations etc.; even in aluminum or plastics
- Ascertaining (non) metallic layer thickness

X-ray

- Uncovering internal defects like cavities, pores and fractures
- Non-invasive weld analysis (e.g. under DIN EN ISO 10675-1)

X-ray fluorescence analysis (XRF)

- Ascertaining the composition of metallic construction materials
- Non-invasive measuring of metallic layer thickness

DAkkS accredited under DIN EN ISO 3497



REM-EDX

- Ascertaining materials even in small volumes
- Cross section layer thickness measuring to at least 0,5 µm under DIN EN ISO 9220
- Fracture surface analysis

We are ready to advise you in the development of a fitting material analysis concept and we will support you with our analytics methods and our engineers' know-how during the quality control, defect analysis and design process of your products.



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