

# Mechanical- technological Testing



## Mech-tech testing for industrial and consumer goods

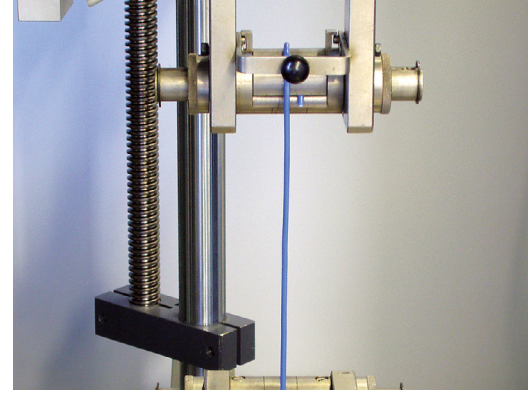
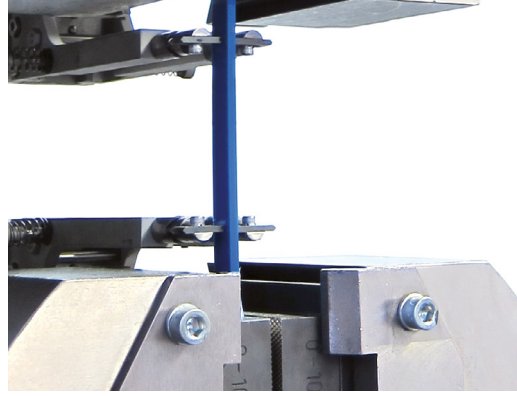
In mechanical-technological tests, materials and components are tested under reproducible and specified conditions in order to be able to predict the behavior of components from material parameters.

Important material characteristics are tensile strength, yield or elongation limit and the modulus of elasticity. Many areas of technology require the results of mechanical tests for the design and/or quality assurance of components.

### Our service portfolio includes

#### 1. Mechanical and technological testing

- ▶ **Tensile tests for metallic materials according to DIN EN ISO 6892-1**
  - Method A (test speed based on expansion speed control)
  - Method B (test speed, based on voltage speed)
  - Preparation of tensile samples according to DIN 50125
- ▶ **Tensile test for plastics according to DIN EN ISO 527-1/-2/-4**  
Determination of mechanical characteristics (e.g. tensile modulus, yield strength, tensile strength, elongation at break) at room temperature
- ▶ **Compression test according to DIN 50106 and DIN EN ISO 604**  
Assessment of the strength and deformation behavior of the investigated material
- ▶ **Bend test according to DIN EN ISO 7438**  
Determination of plastic deformability of metallic materials in the bend test
- ▶ **Impact resistance according to DIN EN ISO 179, DIN EN ISO 180 and DIN EN ISO 148**  
Determination of the ability of a material to absorb the impact energy
- ▶ **Bend test according to DIN EN ISO 178**  
Plastics - Determination of flexural properties
- ▶ **DIN EN ISO 898-1**  
Mechanical properties of fasteners made of carbon steel and alloy steel - Part 1: Bolts, screws and studs with specified property classes - Coarse thread and fine pitch thread
- ▶ **Compression set according to DIN EN ISO 815**  
Determination of permanent deformation in elastomers due to compressive action
- ▶ **Hardness testing and hardness profile testing on metallic materials and plastics**
  - Rockwell according to DIN EN ISO 6508-1
  - Brinell according to DIN EN ISO 6506-1
  - Vickers according to DIN EN ISO 6507-1
  - Vickers micro-hardness test according to DIN EN ISO 6507-1
  - CHD according to DIN EN ISO 2639
  - SHD according to DIN EN ISO 10328; DIN ISO 15787
  - Shore A and Shore D according to DIN EN ISO 868; DIN 53505
  - Ball indentation hardness according to DIN 53486
  - Micro-IRHD according to DIN ISO 48



## 2. Mechanical and technological tests on joints

- ▶ Determination of the tensile shear strength of overlapping bonds according to DIN EN 1465
- ▶ Shear tensile testing of one-point samples according to DIN EN ISO 12996
- ▶ Longitudinal tensile test on welded joints made of metallic materials according to DIN EN ISO 5178
- ▶ Cross tensile test on welded joints made from metallic materials according to DIN EN ISO 4136
- ▶ Cross tension testing of resistance spot and projection welds DIN EN ISO 14272
- ▶ Tensile shear testing of resistance spot, roller seam and projection welds according to DIN EN ISO 14273

## 3. Mechanical and technological tests on components

- ▶ Tensile tests
- ▶ Pressure tests
- ▶ Cyclic experiments
- ▶ Component tests according to customer specifications
- ▶ Manufacture of test equipment

You benefit from our competence and many years of material experience, our wide range of time- and cost-oriented services and concentrated expert knowledge from a single source.

## Other services you can profit from

As a central and international DEKRA laboratory service provider, our experts offer an interdisciplinary range of tests covering chemical safety and material quality. These include environmental and hazardous material analyses, pollutant and emission tests of consumer goods and technical products, tests of operating materials and components, material analyses of plastics and metals, material tests, environmental simulation tests and damage analyses. Our DIN EN ISO/IEC 17025 accredited laboratories of DEKRA Automobil GmbH in Germany are located in Bretten, Halle, Saarbrücken and Stuttgart. In addition, we offer a variety of further testing and certification options in our worldwide DEKRA laboratory network.

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