

## MECHANICAL TESTING

### TASK

In order to determine the suitability of plastics, e.g. for automotive applications, mechanical tests of various kinds are required. On the one hand, this involves purely mechanical data, which is obtained via deforming or destructive tests with tensile, bending or impact tests (sometimes also under cyclic loading). On the other hand, external influences on the mechanical behavior due to temperature, climate, humidity, chemicals or weathering must be taken into account.

### SOLUTION

The laboratories at Analytik Service Obernbuurg have everything they need to comprehensively determine mechanical parameters. Among other things, an impact testing machine and two universal testing machines are available for this purpose (Fig. 1). One of these is equipped with a temperature chamber that allows mechanical data to be measured in the temperature range between approx. -80°C and approx. 250°C.

#### Industries

Paint manufacturers  
Painters  
System suppliers  
Automotive suppliers

#### Analysis goals

Damage analysis

#### Materials

Painted components  
Paints

#### Analysis methods

Light microscopy  
Scanning electron  
microscopy  
(REM-EDX)

#### Similar questions

Paint craters



## **SOLUTION**

Specimens of a specific geometry are required for all mechanical tests. If not provided by the customer, Analytik Service Obernburg offers to manufacture them. The methods used are described in the following table.

In this way, it is always possible to obtain test specimens for a standard-compliant or reproducible test. If equipment adaptations or test fixtures are required for this, we will also take care of this quickly and professionally for you.

Consideration of external influencing factors

Before mechanical testing, the specimens can be pretreated in a wide variety of ways; here are a few examples:

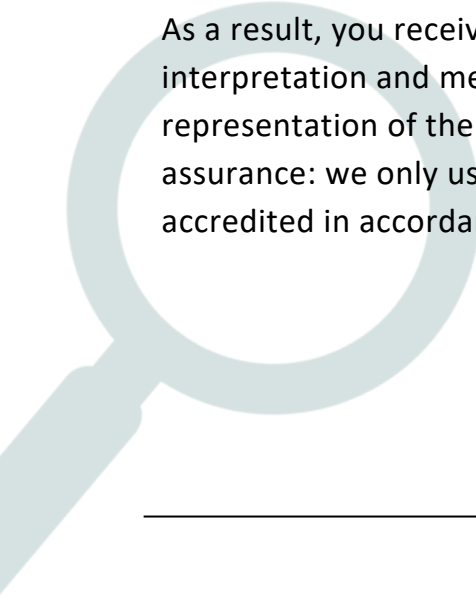
- Cycling in the alternating climate test
- Temperature, damp heat or humidity storage
- Media storage, also under pressure or temperature
- Exposure or weathering with Xenotest device

## **ADVANTAGE**

Analytik Service Obernburg offers a complete service for mechanical testing, relieving you of the coordination effort that would otherwise be required. Prior to the actual tests, the samples can be exposed to a wide range of environmental simulation factors.

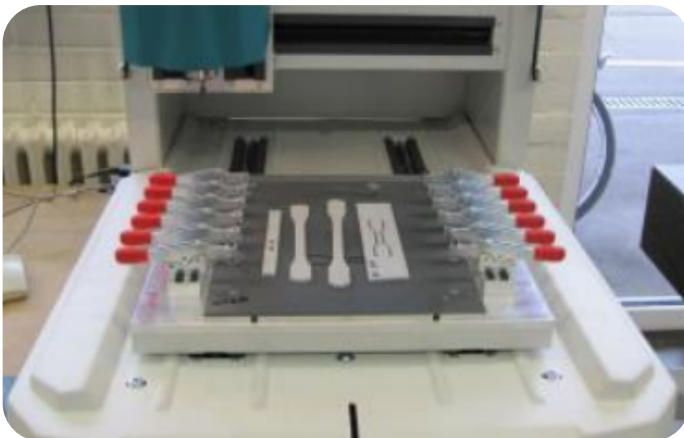
As a result, you receive informative test reports with image documentation, expert interpretation and measurement protocols for all key figures, including a graphical representation of the measurement curves. We attach great importance to quality assurance: we only use highly qualified personnel and almost all test methods are accredited in accordance with DIN EN ISO 17025.

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**Fig. 1: Impact testing machine and universal testing machine with temperature control unit**



**Fig. 2: Computer-controlled sample milling machine.**

Nr.	Fall	Präparationsmethode	Bemerkungen
1a	Fertigteil zur Probennahme geeignet.	Stanzen.	Bevorzugte Methode.
1b	Fertigteil zur Probennahme geeignet.	Fräsen mit Probenfräsmaschine (Abb. 2).	Stanzen ungeeignet wegen Härte, Dicke oder Geometrie.
2	Fertigteil zur Probennahme nicht geeignet.	Herstellung von Prüfplatten, dann Vorgehen nach Nr. 1a oder 1b.	Herstellung der Prüfplatten aus Granulat mittels Extrusion.