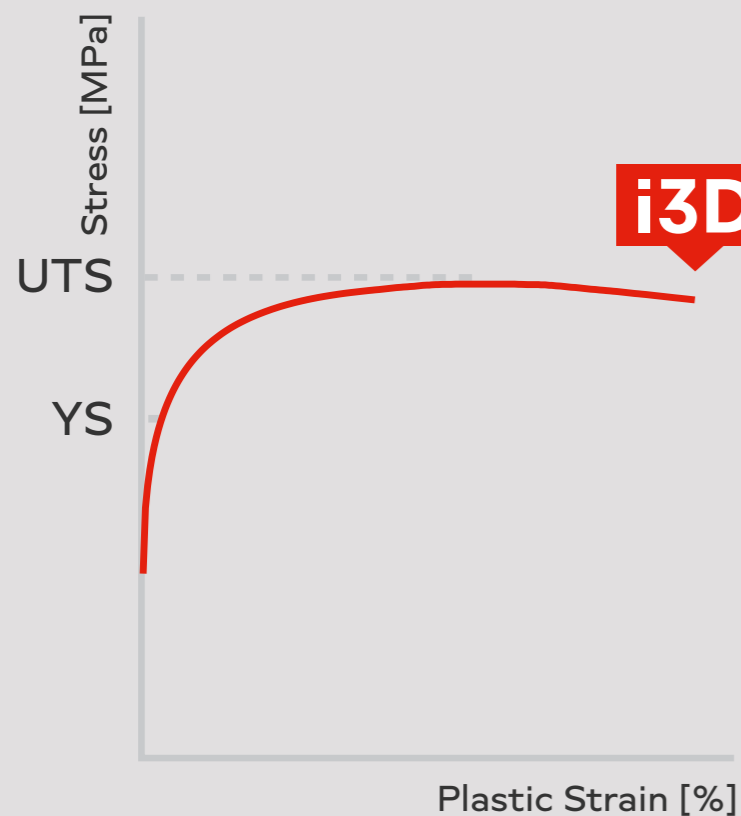


Imprint Testing

Indentation Plastometry



MATERIAL
TESTING
SOLUTIONS

Abstract

Imprint Testing | Indentation Plastometry | "Eindruckverfahren"

The Imprint Test according to DIN SPEC 4864 offers extended possibilities in the field of materials testing. Many metals (steel, aluminum, nickel, titanium and copper) can be tested locally and more extensively for mechanical properties comparable to the tensile test with less effort. | Abstract

DIN SPEC 4864 was the very first standard of its kind developed in collaboration with the Federal Institute for Materials Testing, the Materials Testing Office NRW, the "Physikalisch Technische Bundesanstalt" and industry partners (published by Beuth Verlag in Germany in November 2019). | Standard

The Imprint Test is based on indentations and high-precision 3D measurements, using a white light interferometer, and finite element simulations to determine a plastic stress strain curve out of the indentation (pile-up profile). The indent, characterized by plastic deformation above the surface known as pile-up, reflects the unique mechanical properties of the tested material. Real measured data according to the geometry of the plastic deformation is brought into precise agreement with simulated data, and material properties such as yield strength and tensile strength from indentation are available. | Procedure

The test procedure was initially invented at the RUB (Ruhr-Universität Bochum) and developed by the team of Imprintec GmbH. Measurements can now be fully automated and completed in less than a minute, whether in laboratories, inline, or using mobile devices. | Development

It enables the fast and cost-effective determination of mechanical properties. Furthermore, the indentation enables testing of components, thin/small parts, strength gradients and high-throughput testing. This makes a significant contribution to the development and optimization of components and processes. It is particularly impactful in sectors such as aerospace, automotive, civil engineering, oil & gas, construction, medical devices, mechanical engineering, and the energy sector. | Application

Contact:
Peter Zok
zok@imprintec.de

Tel. +49 234970 414 04
vertrieb@imprintec.de
www.imprintec.de