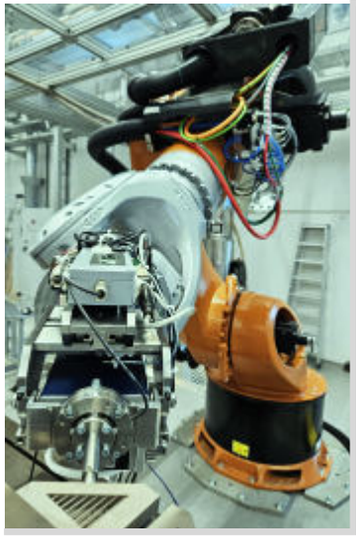
2025 → We go INLINE for Production

In this project, Fraunhofer IPA and Imprintec integrated the i3D technology into a 6-axis industrial robots. Successful tests were conducted on both individual and serially manufactured components.



This collaboration allowed the partners to effectively apply their expertise in manufacturing technology, measurement technology, and the integration of new robot tools and measurement systems.

Fraunhofer

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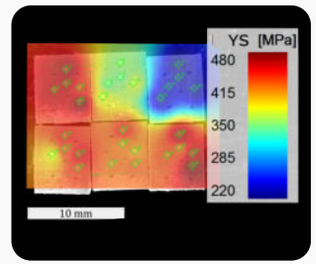
i3D® Technology - YS and UTS within Minutes

i3D® enables fast, cost-effective determination of mechanical properties and hardening behavior. Additionally, the indentation method allows for testing of components, thin and small parts, strength gradients, and high-throughput applications. This delivers a substantial contribution to the development and optimization of components and processes. The technology is especially impactful in industries such as aerospace, automotive, civil engineering, oil and gas, construction, medical devices, mechanical engineering and energy.

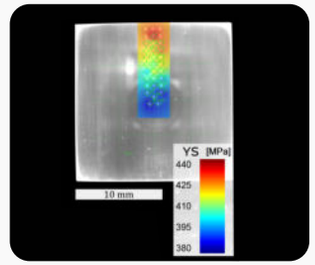
Insight into Applications:

Reduction of #Tensile Tests

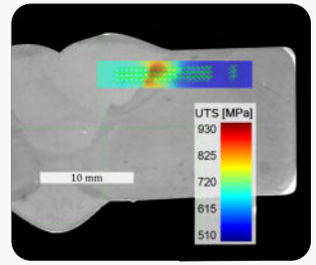
Multisample Screening



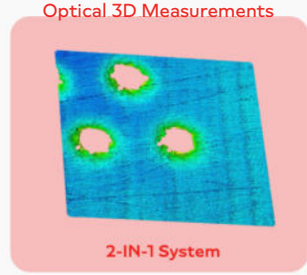
Gradients



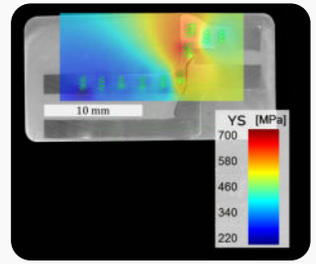
Welds



ADD ON!
Optical 3D Measurements

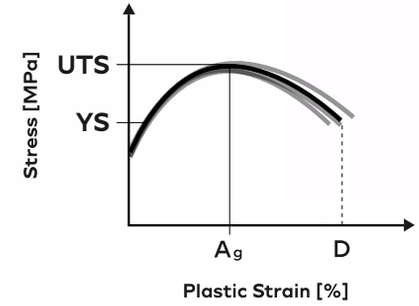


Cold Hardening



i3D®

Stress-Strain Curve from Indentation



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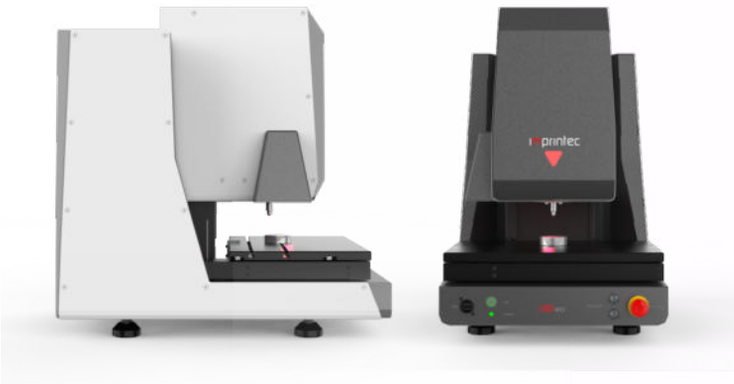
i3D® Testing Device

i3D® is a powerful solution for material testing. It allows the characterization of mechanical properties directly from indentation. This technology simplifies everyday processes and enables mechanical testing, which is not feasible with conventional methods. High-performance determination of yield strength (YS), tensile strength (UTS) and ductility.



Dimensions (L*W*H):	555 * 381 * 531 mm
Weight:	65 kg
Test loads:	2.5; 5; 10; 30 kg
Control:	electronically controlled force
System:	integrated computer (Windows)
Overview function:	motor. xy stage & overview camera
Additional hardware:	interferometer
XY stage travel range:	200 * 88 mm
Camera field of view:	50 * 50 mm
Measurement time:	45 - 72s optional up to approx. 15s

Selected customers:

AIRBUS · TESLA · ZF · Continental · arianespace · Fraunhofer

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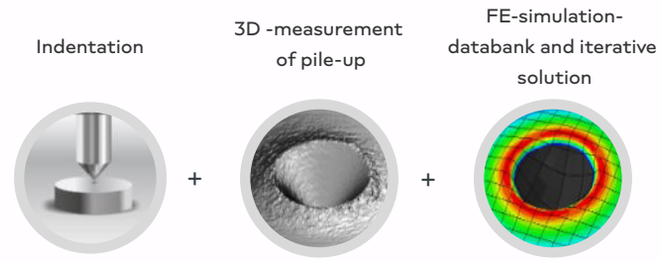
i3D® Testing Technology - Method

Imprintec is pleased to introduce its testing technology, which represents a significant advance in the field of material testing. Designed to determine stress-strain curves quick, accurate from simple indentation.

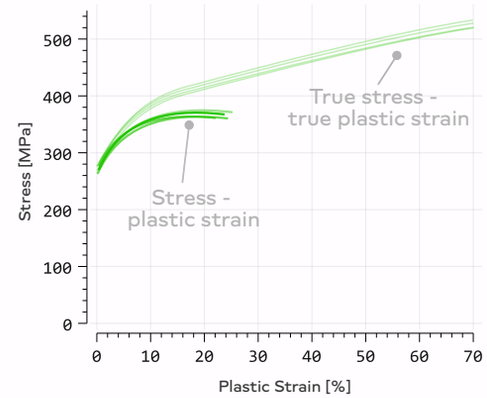


- 60 Seconds for one stress-strain curce
- Big data-enabler
- 0,5 € up to 3 € per single stress-strain curve
- Versatile and locally

Results

- Yield strength (YS)
- Tensile strength (UTS)
- Ductility

1st standard → DIN SPEC 4864 (ASTM and ISO in progress)



imprintec
MATERIAL TESTING SOLUTIONS

i3D®

www.imprintec.de

Imprintec GmbH
Konrad-Zuse Str. 18
44801 Bochum
sales@imprintec.de
+49 (0234) 970 414 04