

SONODUR 3

Portable, high-quality and suitable for industrial use - the user-friendly SONODUR 3 sets standards in the field of mobile materials testing



Standards in the field of mobile material testing. The mobile SONODUR 3 is robust, suitable for industrial use and specially designed and built for rough everyday use. It has a high functionality level similar to that of modern smartphones. The powerful energy concept has up to eight hours of battery life in continuous operation.

The software of the SONODUR 3 is based on the future-proof Android platform with almost any expansion possibilities. The device is thus ideally equipped for daily use as a "workhorse" in hardening and industrial plants with outdoor operations as well as for tasks that are increasingly being discussed today in connection with comprehensive communication in production lines, keyword IOT.

The SONODUR 3 masters the evaluations of the hardness testing methods UCI (Ultrasonic Contact Impedance) and the rebound hardness testing according to Leeb.

In the area of UCI hardness testing, the instrument works with cable-connected probes of the SONO-H/M/S series. These are available in different versions and test loads. Hand-held probes are available in the standard test loads 10 N, 30 N, 49 N and 98 N. Motor probes are available in 1 N, 3 N and 8.6 N versions. For tripod probes, there are test forces of 10 N, 49 N, 98 N.

The sensors for rebound hardness testing according to Leeb are connected wirelessly, via Bluetooth with the SONODUR 3. The SONO L rebound sensors are available in the D-C/D/G version. Wired Leeb probes are also available and eliminate the need for separate charging.

The mobile high-tech all-rounder is used for quality control in incoming goods and during production, as well as for rapid hardness testing of metallic materials after heat treatment or surface processing. The system is also excellently suited for hardness testing at positions that are difficult to access and for mobile weld seam testing in confined spaces. The layer hardness measurement with several measuring points and its easy adjustment functions on almost all fine-grained, homogeneous materials round off the SONODUR 3's range of applications.

YOUR ADVANTAGES AT A GLANCE

Industrial-grade, rugged design: Permanently available

Multitouch software design based on Android: Easy and intuitive handling of the software. All information at a glance by means of graphical display of measured values and tolerance thresholds

Data transmission via WLAN, Bluetooth, USB: Well prepared for future tasks

Large, flat and armored color display incl. protective foils: Long service life, easy to clean

Maximum flexibility: SONODUR 3 has the largest range of UCI test probes on the market

Unique combination option with Leeb sensors via Bluetooth: 2 in 1 concept

Standardized test method: UCI method - Our expertise for your safety

NORMS

ASTM A1038: Defines the UCI hardness testing method, in which material hardness is determined by measuring the frequency shift of a vibrating probe with a Vickers indenter.

ASTM A956: Defines the Leeb hardness testing method, in which material hardness is determined from the rebound behavior of an impact body.

ASTM E140: Defines conversion relationships between different hardness scales, including Brinell, Vickers, Rockwell and Leeb hardness.

DIN 50159: Specifies a hardness testing method for metallic materials using the UCI (Ultrasonic Contact Impedance) technique.

DIN EN ISO 16859: Defines the Leeb hardness testing method for metallic materials, in which dynamic hardness is determined from the impact and rebound behavior of an impact body.

DIN EN ISO 18265: Defines the principles for converting hardness values between different hardness scales and estimating tensile strength.

TECHNICAL INFORMATION

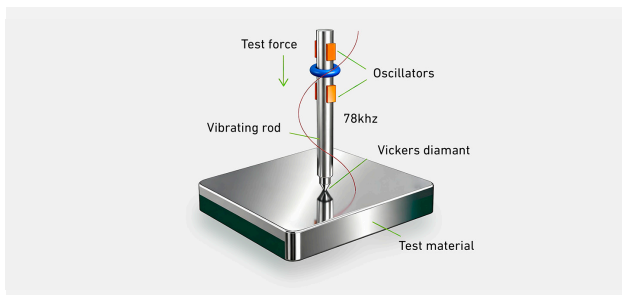
OPERATING SYSTEM:	Android 7.0
OPERATING TIME:	>10 h in measurement mode (depending on system settings and operating conditions)
PROTECTION GRADE:	IP65
QUALIFICATION:	suitable for industrial use according to MIL-STD-810G method
TEST METHOD:	UCI method, according to DIN 50159 1,2-2021, ASTM A1038 2019
REVALUTATIONS:	according to the latest ASTM E140-12b (2019) and EN ISO 18265:2019
DIMENSIONS DISPLAY UNIT:	approx. 164 × 86 × 23 mm
WEIGHT INDICATING INSTRUMENT:	approx. 320 g (incl. battery pack)
SCOPE OF DELIVERY:	— SONODUR 3 Display Unit — Carrying case — Power supply — USB cable — Connection cable — Operating instructions — Screen protector

HARDNESS MEASUREMENT

Hardness testing is a key element of quality assurance and material characterization. It describes the mechanical resistance a material offers to the penetration of another body. Modern non-destructive hardness testing methods, such as Ultrasonic Contact Impedance (UCI) and the Leeb rebound method, convert mechanical deformation and elastic response into quantifiable hardness values — based on ultrasonic and dynamic impact principles.

APPLICATION EXAMPLES

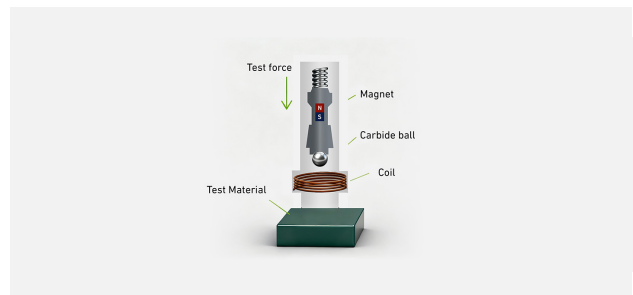
UCI Hardness Testing (Ultrasonic Contact Impedance)



The UCI method determines the Vickers hardness by measuring the frequency shift of a longitudinally vibrating rod with a Vickers diamond tip. When the diamond penetrates the material, the vibration frequency changes proportionally to the contact area and thus to the hardness.

Because the indentation depth is minimal, the process is considered quasi non-destructive and ideal for fine-grained, surface-hardened, or finished components. UCI testing allows direct, on-site hardness verification without specimen preparation and provides results in seconds. The method delivers reliable and repeatable measurements even on complex geometries and in confined spaces.

Leeb Hardness Testing (Rebound Method)



In the Leeb rebound method, an impact body with a tungsten carbide ball strikes the test surface at a defined energy. The hardness is determined from the ratio of rebound to impact velocity, which reflects the material's elastic deformation behavior.

This dynamic, highly robust method is particularly suited for coarse-grained or massive components, cast parts, and forgings. It provides fast, reproducible results directly on-site and is ideal for production control or inspection of large structures where conventional indentation tests are impractical.

ACCESSORIES



SONODUR 3 - DUPLEX CHARGING STATION

Charging station with two charging slots for single or dual charging of SONODUR 3 devices



SONO STUDIO

Statistics and logging software for SONODUR products



HARDNESS REFERENCE BLOCKS

Hardness reference blocks for UCI- and Leeb measuring technology



ADAPTER PLATE FOR TRIPODS

Smart, safe and fast - the adapter plate for the SONODUR 3 in combination with a tripod



SONO H

Handheld UCI Measuring Probes for Flexible Hardness Testing



SONO L

Bluetooth Leeb rebound sensors for fast and reliable hardness testing



SONO M

Motorized UCI Measuring Probes for Maximum Repeatability



SONO S

Guided UCI Measuring Probes for Reliable Everyday Hardness Testing



WIRED LEEB PROBES

Always ready, no charging required



SONO MS 1 (M)

Operator-independent, highly accurate and flexible precision tripod



SONO MS 2 (M)

The all-rounder among tripods - adjustable, highly accurate and highly flexible



SONO PS 1

Measurement tasks with small installation space and when precisely checking the probe calibration



SONO PS 2

Operator-independent precision stand for semi-automatic hardness testing



RECALIBRATION OF MOBILE PRODUCTS

Recalibration guarantees the accuracy and quality of your test and measurement values

foerstergroup.com



The FOERSTER Group is represented by subsidiaries and representatives in over 60 countries worldwide. You can find a complete overview on our website.

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