NewSonic

SonoDur2 – The better Way of Hardness Testing

Standardized, robust, simple, fast and precise, made in Germany

Fast and precise hardness tester the new SonoDur2 on GGG50 cast iron and remote control via PC

UCI-Method (Ultrasonic Contact Impedance):
The indentation produced by the Vickers diamond is displayed instantaneously. The loading is done via motor or by hand against a spring. Hardness is calculated when the defined test load is reached. This corresponds to the indentation surface after unloading, despite the test was under load. UCI-Hardness testing is standardized according to ASTM A 1038, DIN 50159-1/-2 and described in VDI/VDE guidelines 2616 Part 1 and MC1 (DGzfP).

Convincing Arguments for the Use of SonoDur2 in Modern Hardness Testing

The Instrument-Concept:	**The Probe Technology:**
Comprehensive intuitive operation scheme with color touch screen and large graphic display.	Wide test force range: 1N – 100N for motor- and handheld probes, long rod with 10N, 50N
All important information at a glance	Best repeatability of measurement, longtime stabile
Virtually unlimited storage space for settings, results, statistics (4GByte through 32GByte)	Almost steady low scattering of results across the whole range even at high hardness
New: Conversions from Hardness to Hardness and Hardness to Tensile Strength can be done for all materials listed in EN ISO 18265:2014 und ASTM E140-12b$^{\varepsilon 1}$ (2013) and DIN50150 (2000, Table 1, Steel).	Free adjustable to nearly all technical materials. Concept of CAL-Number for automatic compensation of Young's modulus
Very extensive set-up and documentation capabilities in clear text	Digital signal evaluation and transfer of measured value to the indicating device via USB-Interface
Automatic importing of set-up parameters from stored measurement series	Direct adaptation of probes to full test systems with SPS connection (SonoDur-R, „Rack")
Data transfer to PC (USB, Bluetooth, WLAN)	Service friendly, modular construction

NewSonic

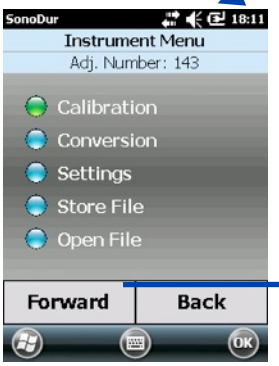
SonoDur2 – small-sized, handy at full control

Probe identification and test condition
with calibration, material-conversion table, dwell time, name of user, upper and lower tolerance gates

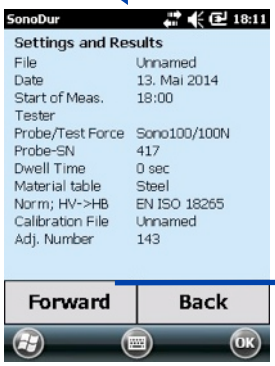
Test results
with actual measurement value (green = o.k., red = out of tolerance), average and number of tests done

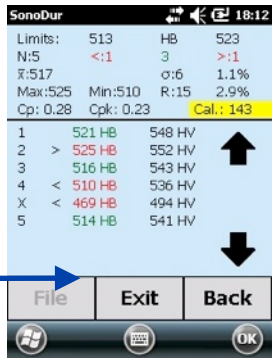
Probe Symbol:
Indication of probe position and penetration time after reaching the test force with count down. Manual initiation of measurement cycle by touching the probe symbol

Instrument control:
Menu = device menu
Exit = Change over to "measure-ment" or "end of test" resp.
Info = Indication of settings and results



Easy menu structure, actual conversions into other hardness scales according to norm and depending on probe used





INFO-Key: All settings and results at a glance where individual false measurements can be corrected at any time

SonoDur2 – optimal protected: IP54 and MIL 810G (vibration-jiggle test).
100% availability due to change battery

Made for the daily use – even with handy gloves: Touch-Screen with protecting foil, optional mounting holes and anti-slip rubber pads for slanted surfaces

Scope of supply: SonoDur2, probe, case, certificates, USB-charging cable, power unit.
Accessories (optional):
Hardness reference blocks, probe adaptors, precision test stand, evaluation software, spare accumulator, external charger

Services:

- Training, customer care on site
- Repair work for certain producers (UCI)
- Plant hire

Figure shows additional equipment

NewSonic

SonoDur2 – Vickers-Hardness Testing Made Easy

Worldwide unique in the field of portable Hardness Testing:

- Hardness to Hardness and Hardness to tensile strength for all material tables in EN ISO 18265:2014, ASTM E140-12b$^{\varepsilon 1}$ (2013) and DIN50150 (2000, Table 1, Steel).
- Immediately ready for testing on selecting a material table due to pre-adjustment corresponding to the specific Young's modulus.
- SonoDur2 is the most versatile hardness tester compared to all others because of testing from soft Aluminum (20HB) to hardmetals (ca. 1600HV) with one probe.
- 1N to 8.6N motor probes for motor driven and manual testing, 10N to 100N handhelds

Portable, fast and easy to handle – your testlab on-site

Some instrument features:
Can be used everywhere, because it is light weight (~280 gr), handsome and robust with IP54 protection
100% availability due to fast exchangeable LiPol Battery-Pack with optional charger station
All information at a glance, bright TFT-colour-display (readable even in sunlight)
Field-updates of firmware and operating system allows you to keep pace with current developments
Intuitive Instrument navigation through the menu and settings via Touch-Screen und illuminated Keypad
„Unlimited" storage capacity for Data (32 GByte max.), transfer via USB, Bluetooth, WLAN

NewSonic GmbH, Unter den Linden 15, D-72762 Reutlingen, info@newsonic.de, +49-71 21- 680 855-0, www.newsonic.de

Measuring Specification	
Measuring principle	UCI Method, corresponds to DIN 50159, ASTM A1038
Test indenter	Vickers diamond 136°
Test loads Newton scale (1kgf = 9.81 N)	Motor probes: 1N (0.1 kgf), 3N (0.3kgf) and 8.6 N (0.9 kgf) Handheld Probes: 10N (1 kgf), 49N (5kgf), 98N (10kgf) (Other test loads on request)
Hardness scales and range accord. to standard conversion tables (here table A1 or T2 resp.) Note: Conversions are acc. to ASTM E140-12b$^{\varepsilon 1}$ (2013), EN ISO 18265-2014, and DIN 50150-2000 (solely table 1, low-alloyed steel). Conversions into tensile strength for 98N (10kgf) test load only.	Vickers HV 10 – ca. 2000 Brinell HB 76 – 618 Knoop HK 87 – 920 (ASTM only) Rockwell HRB 41 – 105 Rockwell HRF 82,6 – 115,1 Rockwell HRC 20,3 – 68 Rockwell HRA 60,7 – 85,6 Rockwell HRD 40,3 - 76,9 (EN ISO 18265 only) HR45N 19,9 – 75,4 Tensile Strength MPa (N/mm^2) 255 – 2180 (EN ISO 18265 only)
Measurement uncertainty	< 3% of the average out of 5 measurements relative to the plate value
Relative repeatability	< 3% (range relative to the average out of 5 measurements on reference block 300HV using motor probe 8.6N)
Mechanical and Environmental (Instrument and probe)	
Operating time	>8h use (depending on instrument performance, temperature and instrument -settings), up to 6h continuous use, fast exchangeable battery pack
Operating Temperature	Probe: 0°C to ~ +50 °C Instrument: -10° ~ +50°C/ charging +10° C ~+ 40°C
Storage Temperature	-20°C ~ +60°C
Humidity	Max. 90%, non-condensing
Dimensions Motor probe Handheld probe L-Handheld probe	Instrument ca. 132mmx78mmx22mm Ø38mm, L=190mm (free length oscillation rod ca. 32,5mm) Ø25mm, L=176mm (free length oscillation rod ca. 12,5mm) Ø25mm, L=207mm (free length oscillation rod ca. 43mm)
Weight	Instrument ca. 280gr. Motor probe ca. 370gr. Handheld probe ca. 280gr.
Instrument	
Processor and Memory	TI Cortex A8 / 256 MB SDRAM / 512 MB Flash / micro SD Card up to 32GB
Operating system	Windows Embedded Handheld (WM 6.5)
Keypad (Hardkeys)	21-keys with illumination and alphanumeric software keypad
Power/ Batteries	Main battery: 3,7V / 2600mAh, LiPo Battery pack Charging time: <2h up to 80% capacity (instrument switched off) AC mains/charger: 90VAC - 264VAC 50/60Hz to 5VDC
Display	3.5" transflective TFT (320x240) with 4W-resistive Touch-Screen, can be used in sunlight, brightness with LED-backlight (440 Cd/m2 max.) adjustable
Interfaces	USB1.1 (Host and Device), Micro-SD-Card, WLAN, Bluetooth Version 2.1 +EDR,CLASS2
Dust/Water-splash proof	IP54 (accord. to IEC60529)
Drop test	1.2m
tumble test	150 (1.65 ft./0.5m) tumble (equivalent to 300 subsequent drop tests) at room temperature; meets and exceeds applicable IEC jiggle specifications
Vibration test	MIL-STD 810G Method 514.5, Fig. 514.5C-1; 1 h per Axis
Operating language	German, English, French, Polish, Czech more on request