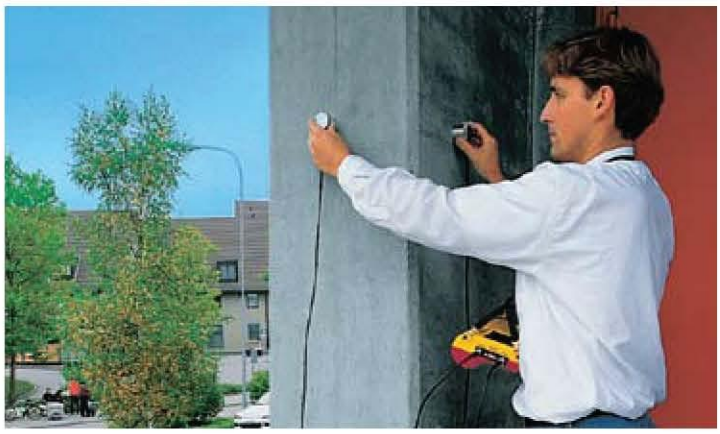
tico

ULTRASONIC INSTRUMENT

The pulse velocity in a material depends on its density and its elastic properties, which in turn are related to the quality and the compressive strength of the material.
It is therefore possible to obtain information about the properties of components by sonic investigations:

- Uniformity of the concrete
- Cavities, cracks, defects due to fire and frost
- Modulus of elasticity (general indication only)
- Concrete strength

Combination TICO-SCHMIDT method for determination of the concrete strength f_c



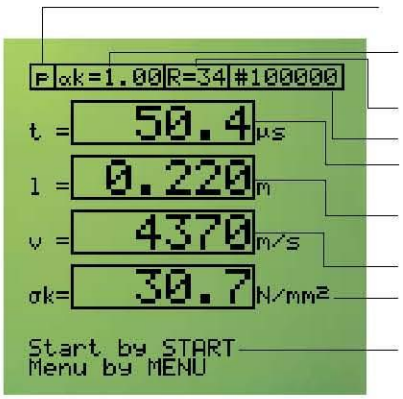
Test report CUR 69 of the TNO (Netherlands) describes a method by which the concrete strength can be calculated using a combination of the rebound value of a SCHMIDT hammer type N and the pulse velocity. This mathematical relationship was derived from the test results of more than 700 test specimens. When the rebound value R and the cement type are set, TICO calculates the strength.
Remark: Measurements should not be performed close to reinforcement bars, hence locate the rebars first with our Profometer 5.

Measurement of the rebound value R with the DIGI-SCHMIDT 2000 concrete tester.

Standards: EN 12504-4: 2004 (former BS 1881 part 203:1986), ASTM C597-83

proceq

Display of all information on a large clear Display



Cement type: P for Portland cement
B for blast furnace cement

Correction factor for moisture, rebar vicinity or other influences

Rebound value inserted

Measurement number

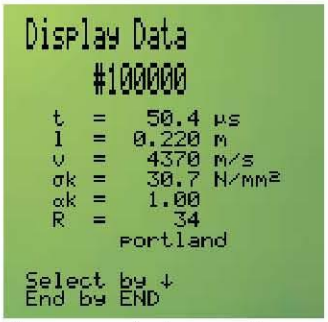
Transmission time of the sound waves between the transducers in µs

Distance between the transducers, unit pre-selectable: m, ft

Pulse velocity v= l/t

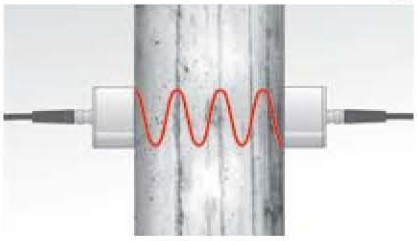
Concrete strength TICO-SCHMIDT, unit preselectable N/mm², MPa, kg/cm², psi

Instructions for operation

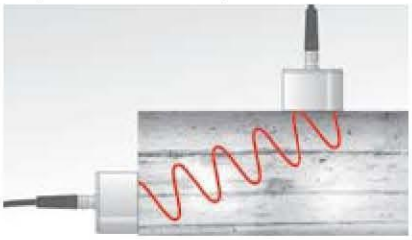


The measured values can be called up from the memory by means of the cursor keys ↑↓ and can be shown on the display.

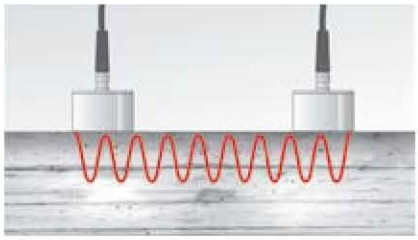
Methods for measuring the transmission time with transducers acting as transmitter and receiver, for calculating the pulse velocity



Direct transmission



Semi-direct transmission



Indirect or surface transmission

Technical Information

Display Unit with non-volatile memory for 250 measured values

DISPLAY: 128x128 graphic LCD

INTERFACE: RS232 or with adapter* to USB

INTEGRATED SOFTWARE: for transmission of the measured values to PC

MEASURING RANGE: ~15 to 6550µs

RESOLUTION: 0.1µs

VOLTAGE PULSE: 1KV

PULSE RATE: 3/s

IMPEDANCE AT INPUT: 1MΩ

TEMPERATURE RANGE: -10° to +60°C for instrument

RECOMMENDED RANGE FOR MEASUREMENTS: 0°C to 50°C only

BATTERY: 6 LR6, 1.5V (30 hours operation)

Ordering Information

UNIT

325 40 006	Ultrasonic Instrument TICO
Includes	Display unit, 2 54kHz transducers, cable, calibration rod, coupling paste, carrying strap, operating instructions and carrying case 325x295x105mm, total weight 4.7kg

ACCESSORIES

325 40 026	Transducer 24kHz	325 40 021	Cable BNC 1.5m
325 40 027	Transducer 37kHz	325 40 023	Cable BNC 15m
325 40 100	Transducer 54kHz	330 00 456	Transfer Cable
325 40 090	Transducer 82kHz	325 40 040	Coupling paste 150ml
325 40 029	Transducer 150kHz	*390 00 540	Adapter RS232/USB

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