

Pundit PL-200

The Pundit PL-200 continue the illustrious Pundit tradition that began in the 1970s. The first to use a new generation touchscreen display unit. The control unit is also fully compatible with the Ultrasonic Pulse Echo transducer, with more details at the dedicated page.

The pulse velocity in a material depends on its density and its elastic properties. These in turn are related to the quality and the strength of the material. The world known Pundit range offers users a reliable and accurate method for determining the sonic properties of materials.

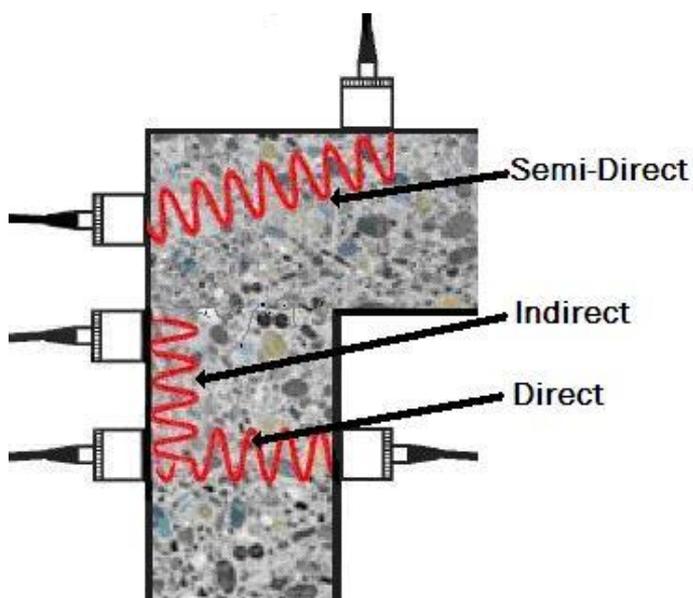
Test Method

Ultrasonic testing in its most basic mode is called time of flight. This refers to timing the arrival of an ultrasonic pulse from one transducer to another through a solid medium.

The ultrasonic pulse in standard operation is a p-wave (or compression wave). The ultrasonic pulse velocity (UPV) is calculated by dividing the distance between the transducer by the time of arrival.

Transmission Modes

The Pundit PL-200 offers three methods of transmission. These can be seen in the image below. The method of transmission is determined by access to the concrete elements surfaces and the characteristic being tested



Applications

- The homogeneity of a material
- The presence of voids, cracks or other internal imperfections or defects
- Changes in the concrete which may occur with time (i.e. due to the cement hydration) or damage from fire, frost or chemical attack
- The strength or modulus of a material
- The quality of the concrete in relation to specified standard requirements

Features

- Housing specially designed to be used on-site in harsh environments
- Screen with highest resolution and sharpest image available in the market allowing best possible analysis of the measured waveforms
- Settings directly accessible on measuring screen
- On board storage and review of waveforms
- Automatic and manual triggering and user adjustable trigger threshold
- Modular concept: Expandable with all Proceq Pulse Velocity and Pulse Echo transducers, upcoming Pundit ultrasonic products will be directly compatible.

Materials

- Concrete
- Ceramics and Refractories
- Timber
- and many others

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PL Link Analysis Software

The Windows based PL Link allows data review and retrospective adjustment of measurement setting. It is also used to load strength conversion curves into the system.

Comprehensive Measurement Modes

NEW - Area Scan

Area scans combine distance, pulse velocity and transmission time measurement mode of the Pundit PL. Scan results can now be displayed as a coloured contour map. The visualisation supports full review of individual measurements.

Line Scans

Assesses the concrete uniformity and detects cracks as well as other defects. The measured pulse velocities are displayed as a line which will change with thickness or where defects or cracks are located.

Pulse Velocity / Transmission Time / Distance

Calculates the pulse velocity of the material under test with zoom and scroll for precise A-Scan inspection. Supports an update rate of up to 25Hz.

Compressive Strength

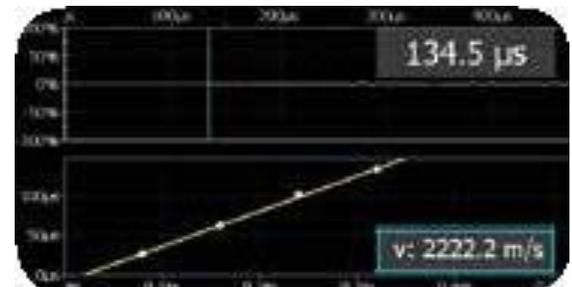
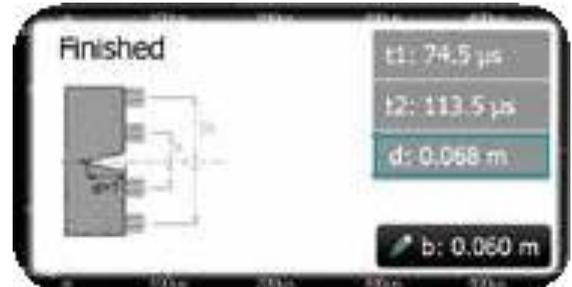
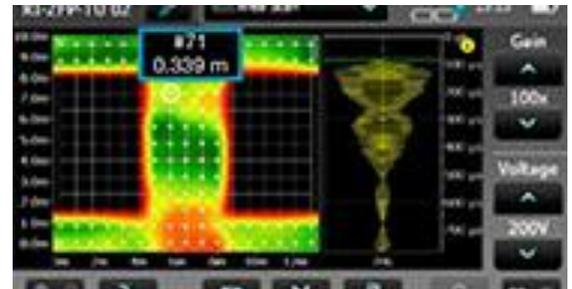
Determines compressive concrete strength via Ultrasonic Pulse Velocity correlation, or by using SONREB which combined Schmidt hammer tests with UPV testing.

Crack Depth

Determines the depth of perpendicular cracks according to BS 1881. This measures surface velocity and compares changes with distance from the crack.

Surface Velocity

Improved surface velocity measuring. Determines surface velocity according to BS 1881.



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Standards and Norms

EN12504-4 (Europe), ASTM C 597-02 (North America), BS 1881 Part 203 (UK), ISO1920-7:2004 (International), IS13311 (India), CECS21 (China).

Form Supplied

Comes standard with:

- Pundit Touchscreen
- 2 Transducers 54 kHz
- 2 BNC cables 1.5m, BNC Adapter Cable
- Couplant
- Calibration Rod
- Battery Charger, USB cable
- DVD w. Software, Documentation, Carrying Strap, Case

Transducer Frequencies

Comes standard with 54 kHz p-wave transducers, although a range of frequencies are available from 24 kHz to 500 kHz. There are also exponential transducers available for dry coupling and wood applications and a range of 250 kHz shear wave transducers available



Technical Specifications

Range	0.1-7930 μ s
Resolution	0.1 μ s (< 793 μ s), 1 μ s (>793 μ s)
Display	7" Colour, 800 x 480
Pulse Voltage	100 – 450 Vpp
Bandwidth	20 – 500 kHz
Receiver Gain	1X – 10,000X (0-80dB) 11 steps
Memory	8 GB Flash memory, storage of up to 100,000 A-Scans
Battery	Lithium Polymer, 3.6 V. 14.0 Ah
Battery Lifetime	>8h (in standard mode)
Operating Temperature	0° > 30° (Charging, operating) 0° > 40° (Charging, Off) -10° > 40° (Not Charging)
Humidity	< 95% RH, non-condensing
IP Classification	IP 54

About PCTE

PCTE have over 30 years' experience in the measurement and testing of construction materials. PCTE can provide more than just the equipment, they can provide expert training. PCTE have a service centre in Sydney in which they can provide calibration, repairs and warranty repairs.

Other Equipment

PCTE supply three main ranges: NDT, Lab and Geotech Instrumentation.

NDT includes: Rebound Hammers, Covermeters, Ultrasonics, GPR, Corrosion Testing, Coating Testing and Foundation Testing

Lab includes equipment for: Concrete, Cement, Aggregate, Soil, Asphalt and Metal

Geotech Instrumentation includes: Strain Gauges, Piezometers, Inclinometers, Extensometers, Tiltmeters, Load Cells and Dataloggers