PAPWORTHS CONSTRUCTION TESTING EQUIPMENT

Perth
West Perth
0408 034 668

Melbourne
Niddrie
0428 315 502

Brisbane
Toowong
0419 477 715

Sydney
Belrose
0418 381 709

www.pcte.com.au

NDE 360- The Multi-functional NDE Platform

The NDE 360 is the smallest and most flexible nondestructive evaluation platform for quality assurance and condition assessment in the world.

Acoustic testing techniques can be used for the investigation of concrete, rock and soil elements above or below ground, and offer engineers or technicians powerful tools with which to assess parameters such as: the thickness of a slab or sub-base, length of a pile, location of a void, slab support or even detailed geophysical layer analysis.

Many techniques have been developed in the last 20 years (i.e. Impact Echo, Impulse Response etc) but the technology was either prohibitively priced or far too cumbersome to use practically. The **NDE 360** testing platform addresses these issues by separating the test paraphernalia from processing, now one system can support up to 9 testing methods in a robust, ruggedised, battery powered system giving the mobility and simplicity an engineer in the field needs. Tests can be taken and analysed on site with minimal fuss or data taken back for detailed analysis at the office using robust software while the **NDE 360** package keeps working on a different site supporting a different test.

Testing Packages

The NDE 360 system is purchased with one or more testing packages. You can upgrade your **NDE 360** at anytime with the purchase of a new add-on. Please see the overleaf for full description of the test packages and their applications.

Features

- Multiplex up to 4 Channels
- Handheld/Ruggedised Use
- Color Touch Screen
- Backlit Screen
- 8+ Hours Battery Life
- 1 Gigabyte Removable Compact Flash
- Test, Accept, Reject Key Buttons
- Windows-Based WINTFS Analysis Software

Specifications

- 16 Bit A-D Converters for 4 Channels
- Up to 2 Microseconds, Simultaneous Sampling Rate on Two Channels
- Maximum Nyquist Frequency 250 KHz
- Gain Steps x1, x10, x100, x1000, Selectable per Channel

About PCTE

PCTE have over 30years experience in the measurement and testing of concrete. With experience in research, consulting and construction they are able to assist you in reviewing the issues and developing solutions. PCTE can provide more than just the equipment. They can provide leading technical support for your business.

Other Equipment

The Olson Instrument range also includes the CTG, Freedom Data PC and DAS as well as the resonance tester.

The full Proceq range of equipment is available for insitu non destructive concrete measurement, including Schmidt Hammers, Covermeters, Half Potentials, Resistivity, Ultrasonics and Permeability.

We also supply Intelli-Rock maturity, temp and humidity logging systems, corrosion rate monitoring equipment, Ground Penetrating Radar.

PCTE
PAPWORTHS CONSTRUCTION TESTING EQUIPMENT

Perth
West Perth
0408 034 668

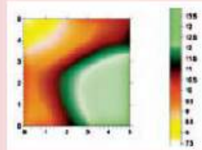
Melbourne
Niddrie
0428 315 502

Brisbane
Toowong
0419 477 715

Sydney
Belrose
0418 381 709

www.pcte.com.au

Pavement, Structural & Tunnel Systems

	Impact Echo	Impact Echo Scanning	Tomographic Velocity Imaging	Ultrasonic Pulse Velocity	Surface Wave Testing (SASW-S)	Slab Impulse Response (SIR)
						
Application	Determine the thickness of a concrete element and/or locate/diagnose cracking, voids, honeycombing, delaminations etc	Locate delaminations and shallow voids over a large area such as slabs, bridge decks, beams, pipes, etc.	Images of voids, honeycomb, cracks, uncured or weak concrete in beams, columns, and piers using UPV/SPV measurements.	UPV is used to determine the strength and quality of concrete and also locating defects such as voids, honeycombing and cracking	SASW-S is used for determination of abutment depths of bridges, pavement system profiles (inc surface layer, base and sub-grade materials), condition assessments of concrete liners (tunnels)	SIR is used for finding delamination or voids in concrete slabs or voids below slabs on grade.
Method	IE Test head taps the concrete creating a p-wave, reflections of which are picked up by the transducer and analysed.	IE Test head taps the concrete creating a p-wave, reflections of which are picked up by the transducer and analysed.	Velocities collected using the NDE 360 are fed into the tomography software allowing for 2-D and 3-D displays of the internal make-up of concrete elements.	A transmitting and receiving transducer time an ultrasonic pulse through concrete, the velocity is calculated.	Surface waves are created by a hammer strike and collected by two accelerometer receivers which are side by side. Signal is analysed in the frequency domain.	The slab surface is struck with a calibrated hammer and the response collected by an adjacent receiver.
Access	Access to only one side of the concrete element is required.	Access to only one side of the concrete element is required.	Access to 2 or more sides of the element are required to produce 2D/3D images.	Submerged concrete elements. Most effective if two surfaces are accessible	Requires access to one side. The accessible surface should be at least 1.5 x the depth in question	Only one side of the concrete element is required.

Geophysical Seismic Surface Wave Systems

	Surface Wave Testing (SASW-G)
	
Application	The SASW test method is applied primarily to assess material stiffness and condition, and layer thickness of soil and rock features
Method	Surface waves are created by a hammer strike and collected by two accelerometer receivers that are side by side
Access	Requires access the surface. The surface should be at least 1.5 x the depth in question.

Foundations Depth & Integrity Systems

	Sonic Echo/ Impulse Response (SE/IR)	Parallel Seismic (PS)	Ultra-seismic (US)
			
Application	SE/IR tests are performed to evaluate the integrity and determine the length of deep foundations.	PS is used to determine the lengths of deep foundations where the top is inaccessible, or they are long and slender. Also PS method provides data about the soil below the foundation.	US investigations can evaluate the integrity and find the length of foundations such as drilled shafts and driven or auger-cast piles. Shallow wall-shaped substructures such as an abutment or a wall pier of a bridge are also suitable.
Method	The foundation top is struck by a hammer and the response of the foundation is monitored by a receiver.	The structure is struck by a hammer and the response of the foundation is monitored by a hydrophone or geophone receiver lowered down a borehole.	The foundation top is struck by a hammer (both vertically and horizontally) and the response of the foundation is monitored by a three component receiver. The receivers are moved with intervals of 150-300mm.
Access	Either the top or 500mm of the side of the top are required for piles. Only the top if an abutment	A part of a concrete element attached to the foundation must be exposed. A 50-100mm hole is bored to 3-5m below the foundation.	At least 1.5-1.8m of the side of the structural element required to be exposed for mounting instrumentation.