PAPWORTHS CONSTRUCTION TESTING EQUIPMENT

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www.pcte.com.au

# Concrete Thickness Gauge (CTG)

**100 CTG Tests 1hrs at $175/hr**

**100 Core Tests 3 days & $5000**

**Time = $$$**
*CTG will save you time and money*

## Introduction

You can now verify the thickness of concrete flatwork in one easy step. You no longer need to drill, core, or excavate to determine concrete slab thickness. Simply use the gauge instead.

The CTG is a nondestructive, battery-powered handheld system for measuring the flaws and thickness of concrete slabs, pavements, walls and other plate-like structures from one side. This system features a handheld gauge that records thickness information, a handheld test head for generating and receiving sound waves and a telescoping pole for use on flatwork or overhead.

The CTG requires no special knowledge or training. It reliably measures the thickness of any type of concrete using the Impact Echo principle. Use it right out of the case with built-in default concrete parameters, or for greater accuracy simply calibrate the CTG instrument by testing at a point of known concrete thickness as a calibration reference for the speed of sound in concrete and start testing.

**Patented Super Thin Anvil**

## Specifications

| | |
|---|---|
| **Thickness Range** | 6 to 60cm, and up to 1.8m in thick mode |
| **Accuracy** | Typically + 2% at high resolution when calibrated on a known thickness location |
| **Power** | ▪ Internal rechargeable NiMH battery pack (over 16 hrs. of operation per charge)<br>▪ External Battery Charger<br>▪ AC power unit, overnight charging<br>Can use AA size alkaline batteries or run on AC power unit |
| **Learning Curve** | Can learn to use in 10 minutes |
| **Lightweight** | 2.0 kg, including the test head and handheld unit with batteries |
| **Warranty** | 1- year limited warranty |

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## Equipment Components

The CTG is made up of two main components. The main body that contains the controls and the display, as well as the test head which contains a solenoid impactor and transducer receiver.

Test Head

Main Body

Also included with the kit is a rugged carry case, battery recharging cable, data transfer software and a telescopic pole extension.

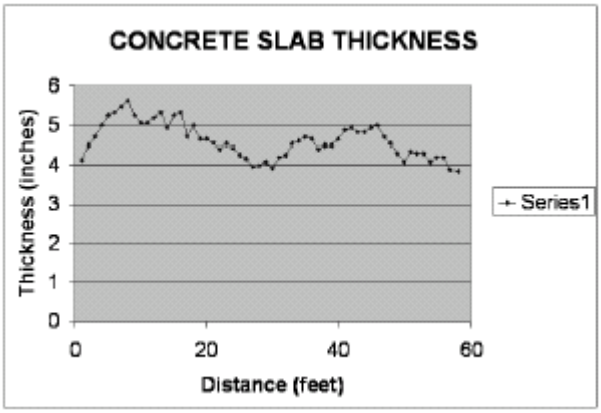
## Calibration Process

IE relies on an estimation of the p-wave velocity through the concrete to determine the concrete thickness. This process is automated in two forms in the CTG. The first is simply a guess of the velocity using the concretes compressive strength. This will give relatively accurate thickness results. For highly accurate results (ie ±2%) the p-wave velocity can be measured on similar concrete of a known thickness.

## Data Transfer

The CTG has the ability to record 300 readings in the field before the memory is full. The equipment comes with transfer software, which enables you results to be output in any spreadsheet. Using an RS232 interface port all of the results are summarized into one table with an extremely easy to follow download procedure.

The information can be easily used to create concrete slab profiles:

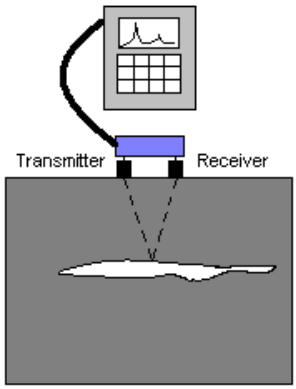



## Diagnose defects in your concrete

As well as being extremeley useful for determining the thickness of concrete the CTG can also be used to locate defects in concrete. The same waves that bounce of the back side of the concrete will also bounce off any air interface inside the concrete.

By using the CTG advanced model the entire frequency spectra for each individual reading is readily downloaded to PC for investigation in the CTG software.

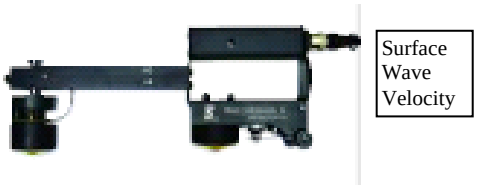
Find delaminations, cracks and voids inside the concrete by taking reading in a grid over the concrete.




## Variant Models

**Super Thin**

The CTG also comes in the Super Thin model. This makes use of a striker beneath the solenoid impactor allows higher frequencies to be attained and thinner elements to be measured. With the Super Thin model the range of measurement is extended to 38mm-1.8m. The unit can still operate as the CTG base model by retracting the additional striker.




**Surface Wave Velocity**

In some circumstances an estimate of the p-wave velocity may not be possible because no concrete is available for a calibration. A surface wave velocity can be measured using two transducers a known distance apart. The CTG SW comes with a second transducer attachment for these calibrations.

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A model combining both of these features is also available. The CTG SW ST will operate in super thin mode and also measure surface wave velocity for accurate thickness measurements in most circumstances. It should be notes that neither of these models have the capability to record the spectral data and hence can not be used for diagnosis purposes past measuring concrete thickness.

## Benefits and Features

| Benefits | Features |
|---|---|
| Enable an accurate check that the element supplied meets the design thickness specified. | Only requires access to one face. Works on:<br>-Slabs on grade<br>-Suspended slabs<br>-Walls<br>-Shafts |
| Perfect for use on most applications | Measuring range 60mm up to 1800mm |
| Easy to read inside and out. | LED display, backlit |
| Contractor can check slab thickness before leaving the site | Accurate on hardened concrete of any age |
| Measurements can be taken by unqualified staff | Displays thickness in mm |
| Experienced person can check for flaws | Alternative display of spectral echo |
| Able to be used on existing coated structures | Works through paints or tiles |
| Quick testing of surface without preparation | Coupling agent between test head and concrete not required |
| Use on construction site with one operative | Ruggedised design and light weight |
| Permanent record for QA plus further analysis possible with software | Download to PC |
| Quickly increase accuracy | Easily calibrated with a known thickness |

## Easy to Read Display

The CTG has an easy to read backlit screen, which returns not only the thickness of the concrete but also, indicates the quality of the reading collected. This means that thickness results can be assessed immediately onsite with out any need for a PC


## 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.