

dig-i-schmidt



① Type N/NR/L/LR/LB
DIGI-SCHMIDT

CONCRETE TEST HAMMER

proceq

DIGI-SCHMIDT Digital Concrete Test Hammer

- Non-destructive measurement of the concrete/mortar compressive strength;
- The control of the uniform concrete quality (in-situ concrete and prefabricated structures);
- Detecting weak spots; and,
- Electronic display unit makes it ideally suited for systematic high volume measuring.

The compressive strength (f_c) is established by measuring the hardness (rebound value R) of the concrete surface and with the conversion curves.

Measuring range:

Concrete compressive strength of 10 to 70 N/mm².

Standards:

ISO/DIS 8045

EN 12504-2

ENV 206

BS 1881 part 202

DIN 1048 part 2

ASTM C 805

NFP 18-417

B 15-225,

JGJ/T 23-2001

JJG 817-1993

Type PM



Type PM for quality control of mortar in masonry.

TYPE PT/P/PM

These pendulum-type hammers are well suited for testing low-strength construction materials. Individual types differ by the size and shape of the hammer. Tests may be performed on vertical and horizontal surfaces.

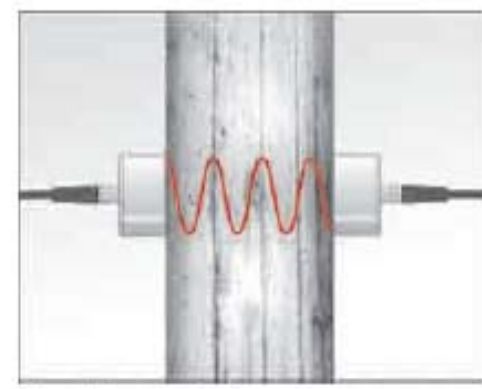


② Type PT/P/PM

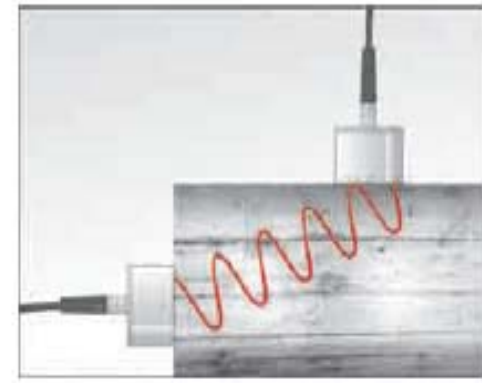
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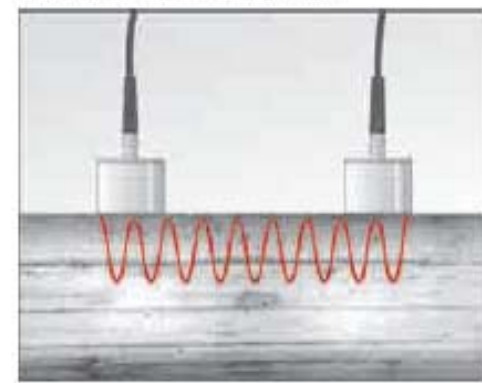
ULTRASONIC INSTRUMENT



Direct transmission



Semi-direct transmission



Indirect or surface transmission

proceq

TICO Ultrasonic Instrument

Recording the properties inside the concrete structure:

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

Standards:

pr EN 12504-4: 2004

(Former BS 1881 part 203:1986)

ASTM C597-83



profometer[®] 5⁺



Test block

REBAR DETECTION SYSTEM

Standards:

BS 1881 part 204: (1988)

proceq

PROFOMETER 5+ Rebar Detection System (Model SCANLOG)

Standard Instrument (Model S)

Features:

- Detection of rebar and other metal building elements and their orientation;
- Rapid location of rebar with insufficient cover thickness;
- Correction, for the influence of close parallel bars, on diameter and cover measurement;
- Correction, for the influence of adjacent bars, in congested 2-layer arrangements;
- Compact, user-friendly indicating device with display backlight option;
- Optical and acoustic locating aids;
- Can be operated in metric or imperial units;
- Storage of individual cover values and statistical analysis;
- Direct printing capability;
- Simple data transfer function to PC via the [ProVista](#) Analysis Software, included with the instrument; and,
- Spacious hard-top equipment case.

Deluxe Instrument (Model SCANLOG)

Additional functions for more extensive site evaluations:

- "CyberScan" function for visual display of rebar location; and,
- "Measuring with Grid" function for grey-scale display of concrete cover values.

Former British Standard	New European Standard	Comments
BS 1881: Testing Concrete - Part 131: Methods for testing cement in a reference concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 201: Guide to the use of non-destructive methods of test for hardened concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 202: Recommendations for surface hardness testing by rebound hammer	BS EN 12504-2: Testing concrete in structures - Part 2: Non-destructive testing - Determination of rebound number	A national annex is being prepared to provide guidance on this test
BS 1881: Testing Concrete - Part 203: Recommendations for measurement of velocity of ultrasonic pulses in concrete	pr EN 12504-4: Testing concrete in structures - Part 4: Determination of ultrasonic pulse velocity	This Part of EN 12504 has been sent for formal vote
BS 1881: Testing Concrete - Part 204: Recommendations on the use of electromagnetic covermeters	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 205: Recommendations for radiography in concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 206: Recommendations for determination of strain in concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 207: Recommendations for the assessment of concrete strength by near-to-surface tests	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 208: Recommendations for the initial surface absorption of concrete	No European equivalents	Current Standard
BS 1881: Testing Concrete - Part 209: Recommendations for the measurement of dynamic modulus of elasticity of concrete	No European equivalents	Current Standard

Testing concrete – Non Destructive/1

BS 1881-Part 201 (1986):

Guide to the use of non-destructive methods of test for hardened concrete

Gives guidance on the tests that are available for non-destructive testing of hardened concrete which forms a laboratory specimen or part of a structure, structural component or other type of engineering construction.

Some tests cause varying degrees of localized damage or defacement and may therefore be considered partially destructive; these methods are all defined as non-destructive. All the tests can be performed on the concrete as cast and do not require the removal of samples for subsequent analysis or testing.

Testing concrete – Non Destructive/2

BS 1881-Part 202 (1986):

Recommendations for surface hardness testing by rebound hammer

Gives recommendations on the use of rebound hammers for testing the hardness of concrete. It describes the areas of application of rebound hammers, their accuracy, the calibration procedure, the procedure for obtaining a correlation between hardness and strength, the conditions of the concrete and its testing which influence results, the method of testing concrete in situ and the reporting of results.

BS EN 12504-2: Testing concrete in structures - Part 2: Non-destructive testing - Determination of rebound number

Testing concrete – Non Destructive/3

BS 1881-Part 203 (1986):

Recommendations for measurement of velocity of ultrasonic pulses in concrete

Gives recommendations on the non-destructive testing of concrete in the form of plain, reinforced and prestressed test specimens, precast components and structures by the measurement of ultrasonic pulse velocity.

*pr EN 12504-4: Testing concrete in structures -
Part 4: Determination of ultrasonic pulse velocity*

Testing concrete – Non Destructive/4

BS 1881 Part 204 (1988):

Recommendations on the use of electromagnetic covermeters

Gives recommendations on and describes the principles of operation of electromagnetic devices that may be used for estimating the position, depth and size of reinforcement buried in concrete. It also describes their methods of use and applications, the accuracy to be expected and the factors which may influence the results.

Testing concrete – Non Destructive/5

BS 1881-Part 206 (1986):

Recommendations for determination of strain in concrete/1

Gives recommendations on methods and devices which can be used to determine strain in concrete. Some devices measure a property directly related to strain in the gauge (e.g. electrical resistance gauges) whereas others actually measure displacement, which can be used to determine strain using a known base length (e.g. displacement transducers).

Testing concrete – Non Destructive/4

BS 1881-Part 206 (1986):

Recommendations for determination of strain in concrete/2

References to strain gauges in this Part include both types of device.

The use of the following devices is described:

- a) mechanical (including mechanical/optical);
- b) electrical resistance (metal and alloy elements);
- c) vibrating wire (acoustic);
- d) electrical displacement transducers.

Testing concrete – Non Destructive/5

BS 1881-Part 207 (1992):

Recommendations for the assessment of concrete strength by near-to-surface tests

Gives recommendations on tests that are designed to assess the strength of concrete by causing localized failure in a small zone, typically up to 75 mm from the surface, according to the method. The recommendations cover the following test methods:

- a) internal fracture;
- b) pull-out;
- c) pull-off;
- d) penetration resistance;
- e) break-off.

**Wisconsin Highway Research Program
Project NO. 0092-00-15**

Non-Destructive Testing of Wisconsin Highway Bridges

Final Report

by

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Submitted to
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