

RESIPOD- Resistivity Meter



Surface resistivity measurement provides extremely useful information about the state of a concrete structure. Not only has it been proven to be directly linked to the likelihood of corrosion and the corrosion rate, recent studies have shown that there is a direct correlation between resistivity and chloride diffusion rate.

APPLICATIONS

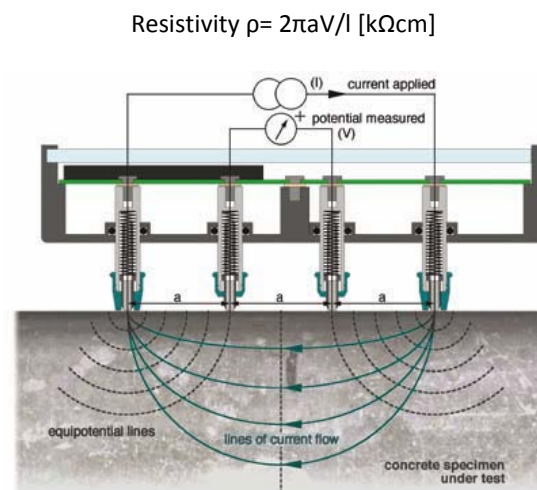
The versatility of the method can be seen in these example applications:

- Estimation of the likelihood of corrosion
- Indication of corrosion rate
- Correlation to chloride permeability
- On site assessment of curing efficiency
- Determination of zonal requirements for cathodic protection systems
- Identification of wet and dry areas in a concrete structure
- Indication of variations in the water/cement ratios within a concrete structure
- Identification of areas within a structure most susceptible to chloride penetration
- Correlation to water permeability of rock

ResiPod is a fully integrated 4-point Wenner probe, designed to measure the electrical resistivity of concrete in a completely non-destructive test. It is the most accurate instrument available, extremely fast and stable and packaged in a robust, waterproof housing designed to operate in a demanding site environment.

PRINCIPLE OF OPERATION

Operating on the principle of the Wenner probe, the ResiPod is designed to measure the electrical resistivity of concrete or rock. A current is applied to the two outer probes, and the potential difference is measured between the two inner probes. The current is carried by ions in the pore liquid. The calculated resistivity depends on the spacing of the probes.



RESIPOD MODELS AND PROBE SPACING

Wider probe spacings provide a more consistent reading when measuring on an inhomogeneous material like concrete. However, if the spacing is too wide, there is more danger of the measurement being affected by the reinforcement steel. The industry standard 50 mm probe spacing has long been seen as a good compromise.



The 38mm model is designed specifically to comply with the AASHTO standard (under development) for "Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration".



Melbourne Office
Niddrie
(03) 9938 3830
r.barnes@pcte.com.au

Perth Office
Nowergup
(08) 9407 5363

Website
www.pcte.com.au

Sydney Office
Brookvale
(02) 9939 7177

The Surface Resistivity (SR) test is a much quicker and easier test for estimating concrete permeability. It is a proven and mature test method which can replace the more laborious rapid chloride permeability test.

The contact extension cable kit can also be used to attain variable spacing for the contacts. Spacing from 20-85mm can be achieved using the kit, which is bought as an optional accessory.

FEATURES

Despite being extremely simple to use, ResiPod provides a variety of features that are unique in a concrete surface resistivity instrument.

- Fully integrated surface resistivity instrument
- Wide measuring range (0 to ca. 1000 kΩcm)
- Fast and accurate delivery of measuring results
- Highest resolution available for a surface resistivity instrument
- Meets the AASHTO standard (38mm spacing) (standard under development)
- Current flow indication and poor contact indication
- Hold, save and delete function, with onboard memory
- USB connection and dedicated PC software
- Designed to float (waterproof according to IPX7)
- Allows variable probe spacing to be set
- Allows replacement of standard tips with accessories

DISPLAY

The display of the ResiPod shows all necessary information while acquiring data on site.

1. Measured resistivity
2. Battery status
3. Range indication
4. Current indication 20%, 40%, 60%, 80%, 100%
5. Indication of scaled reading



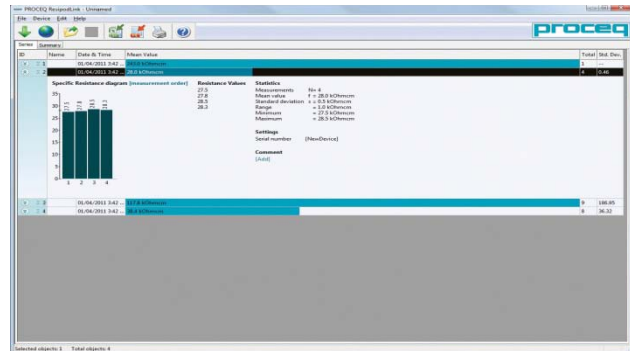
INDICATION OF POOR CONNECTION

A good connection between the instrument and the concrete surface is the most important factor for obtaining a reliable measurement. ResiPod automatically detects a poor connection and alerts the user.

RESIPODLINK SOFTWARE

The collected measurement values can then be analysed comfortably with the ResiPod Link PC tool.

System requirements: Windows XP, Windows Vista, Windows 7, USB-Connector. An internet connection is necessary for soft- and firmware (using PqUpgrade) updates if available.



Range	0 – 1000 kΩcm (depending on probe spacing)
Resolution (nominal current 200μA)	±0.2 kΩcm or ±1% (whichever is greater)
Resolution (nominal current 50μA)	±0.3 kΩcm or ±2% (whichever is greater)
Resolution (nominal current <50μA)	±2 kΩcm or ±5% (whichever is greater)
Frequency	40 Hz
Memory Non volatile,	500 measured values
Power Supply	>50 hours autonomy
Charger connection	USB type B, (5V, 100mA)
Dimensions	197 x 53 x 69.7 mm
Weight	318 g
Operating temperature	0° to 50°C
Storage temperature	-10° to 70°C

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 full Proceq range of equipment is available for insitu non destructive concrete measurement, including Schmidt Hammers, Covermeters, Half Potentials, Resistivity, Ultrasonics and Permeability. The Olson Instrument range also includes the CTG, Freedom Data PC and DAS as well as the resonance tester. We also supply Intelli-Rock maturity, temp and humidity logging systems, corrosion rate monitoring equipment, GPR.

Papworths Construction Testing Equipment- Australia's leading Concrete NDT Equipment Supplier