

## CorroMap

As the direct successor to the Galvapulse the CorroMap provides easy to use half-cell potential and galvanostatic pulse corrosion rate measurement with many user-friendly features.

The CorroMap is a rapid, non-destructive technique for the evaluation of reinforcement half-cell potentials and corrosion rates. It maps the contour plots of half cell potential and resistance in colour on the screen and for transfer to PC.

The CorroMap is a lightweight system with rechargeable batteries for optimum portability and is designed to be operated by one man. It offers reliable evaluation of reinforcement corrosion also in wet, carbonated or inhibitor treated concrete so that the Half-cell potential and electrical resistance to the cover layer are given.

The system will also take galvanostatic pulse measurements which are an indication of the rate of corrosion of the reinforcing steel.

### Kit

The equipment comes with a Lightweight electrode and a hand held computer pre-installed with easy to operate software. A durable steel ring for applying the current field to the reinforcement allows for measurements possible on uneven and curved surfaces with a replaceable sponge.

The system also includes a variety of connections and cables to make obtaining reinforcement contact as simple as possible.

### Advantages

- Estimation of the corrosion rate in the reinforcement can be made in less than 10 seconds.
- Reliable evaluation of reinforcement corrosion also in wet, carbonated or inhibitor treated concrete.
- Half-cell potential and electrical resistance of the cover layer are given.
- Lightweight electrode / hand held computer and easy to operate software.
- Durable Guard Ring system for focusing the current field to the reinforcement.
- Measurements possible on uneven and curved surfaces.



## Applications

The CorroMap is typically used in connection with:

- Swimming pools
- Bridges
- Balconies
- Parking houses
- Concrete structures in a marine environment

## Features

- New handheld Psion work about PC with Windows CE 5.0 and colour Touch Screen.
- Protected against dust, rain and snow (IP65).
- Up to 2400 automated measurements, one-man operated with "auto trigger" and "auto increment" options.
- Can measure related values of electrochemical potential and resistance.
- System can be purchased with or without corrosion rate measurement

## Advantages

- On site graphic display – in colour.
- Each colour represents a measurement interval for potential and resistance.
- Zoom function of detail area with display of measurement values.
- Measurement results in Excel-format are easily transferred to PC for further processing and presentation.

# CorroMap

## Measuring the Corrosion Rate

The CorroMap uses a galvanostatic pulse principle to establish the corrosion current and therefore the corrosion rate of reinforcing steel.

The Corromap works by inducing a short duration anodic current pulse into the reinforcement galvanostatically from a counter electrode placed on the concrete surface together with a reference electrode.

By utilizing the ohmic resistance (electrical resistance), the DC polarisation resistance over time, and the applied current, the corrosion current can be estimated with the Stern Geary equation.

## Threshold Values

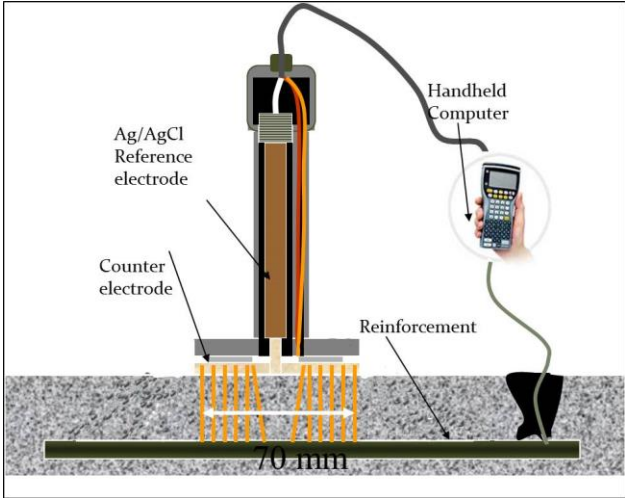
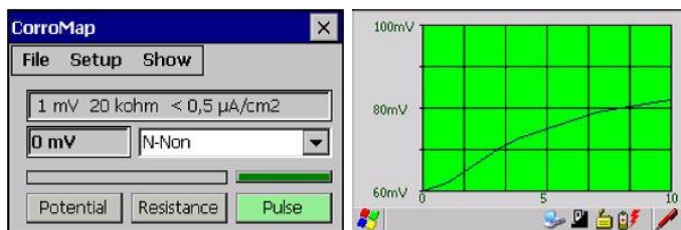
For easy and quick evaluation FORCE Technology uses the following threshold values to categorise the risk of the corrosion rate:

Measurement	Corrosion rate
< 0.5 $\mu\text{A}/\text{cm}^2$	Negligible
0.5 - 5 $\mu\text{A}/\text{cm}^2$	Slow
5 - 15 $\mu\text{A}/\text{cm}^2$	Moderate
> 15 $\mu\text{A}/\text{cm}^2$	High

## Software

The included software for the PISON workabout Pro3 is used to set up mapping parameters and record resistance, half-potential and corrosion rate data.

This system allows a grid of any size to be established, a data collection procedure defined and data quality parameters set below which information will not be recorded. Data is exportable to excel format.



## 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, Inclometers, Extensometers, Tiltmeters, Load Cells and Dataloggers