

## ERE20- Embeddable Reference Electrode



*The ERE 20 attached to the reinforcement*

The ERE 20 is a true, long life Reference Electrode, which can be cast into the cover concrete to check the cathodic protection and to monitor the corrosion state of reinforcing steel or predict corrosion. Normally in newly cast concrete structures, but the electrode can also be installed in existing structures.

Based on proven battery technology, the ERE 20 is a true half-cell using a manganese dioxide electrode in steel housing with an alkaline, chloride-free gel. The steel housing is made of a corrosion resistant material. The pH of the gel corresponds to that of pore water in normal concrete, so errors due to diffusion of ions through the porous plug are eliminated. The potential of ERE 20 is virtually independent of changes in the chemical properties of the concrete. It can, therefore, be used in wet or dry concrete, whether exposed to chlorides or to carbonation.

The ERE 20 can easily be attached to a logger in order to monitor data. Remote monitoring by modem is also possible.

The reinforcing steel to be protected shall be polarised a minimum of 100 mV at anodic locations. When using the polarisation decay method, the decay is determined by interrupting the protective current and monitoring the reinforcement's potential measured relative to a stable reference electrode.

When the current is interrupted, an immediate volt-age shift is the result of eliminating the IR-drop and is not to be

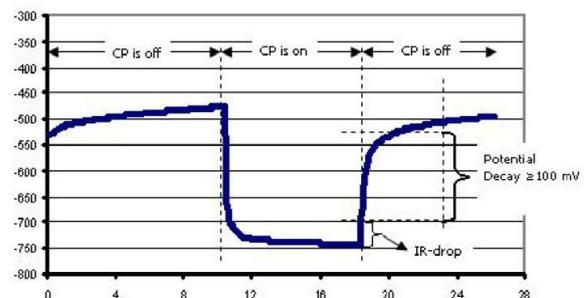
included in the polarisation measurements. According to EN 12696 the Polarisation Decay should be met within 24 hours.

### Advantages

- Control of cathodic protection.
- For potential measurements in wet and dry concrete.
- Can be exposed to chloride or carbonation.
- Does not induce corrosion in steel.
- Does not change potential of steel.
- Easy to install in new or old structures.

### Example

The ERE 20 is used to check the correct operation of the cathodic protection in structures. Figure 2 shows a typical curve found on checking a CP-system.



*Figure 2. Polarisation curve from CP-system*

### About PCTE

PCTE have over 30 years 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 Ultrasonic testing, Electrical potentials, Concrete Resistivity, Permeability, Absorption. We also have the Intelli-Rock Maturity Loggers, Handy Search, Conquest and Aladdin GPR, as well as Olson Instruments for Impact Echo, Sonic Echo and many more acoustic testing techniques.