

ERE20 Embeddable Reference Electrodes

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 concrete corrosion of steel or concrete corrosion protection. Normally in newly cast concrete structures, but the electrode can also be installed in existing structures.

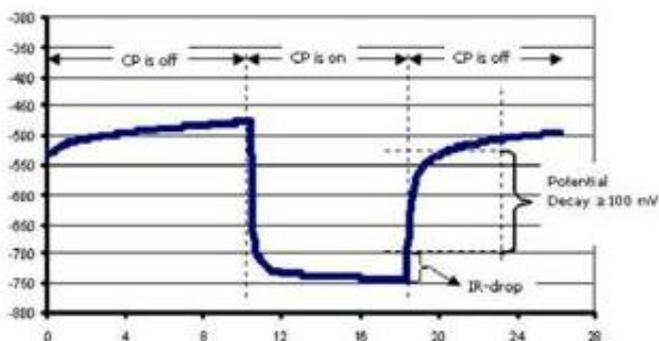
Based on proven battery technology, the ERE 20 is a true half-cell using a manganese dioxide electrode in steel housing with an alkaline, chloride-free gel. The steel housing is made of a corrosion resistant material. The pH of the gel corresponds to that of pore water in normal concrete, so errors due 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.

Installation and Use

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 voltage 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.

Example

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



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

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