

Purpose

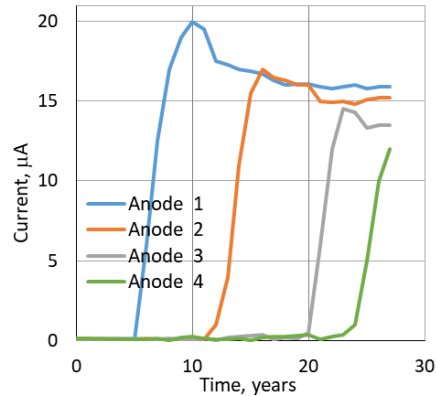
CorroWatch is a 4-probe monitoring system for early warning of the onset reinforcement corrosion. It can be used to estimate the time before corrosion of reinforcement begins so that corrective measures may be taken early enough to minimize repair costs. Applications:

- Monitoring of reinforcement in critical areas for corrosion such as construction joints, splash zones in marine structures, bridge decks, bottoms of bridge columns exposed to ingress of chlorides, etc.
- Monitoring of the ingress of the depassivation front, due to chloride penetration or carbonation.

Principle

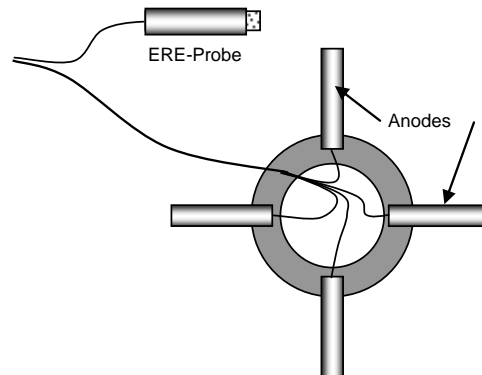
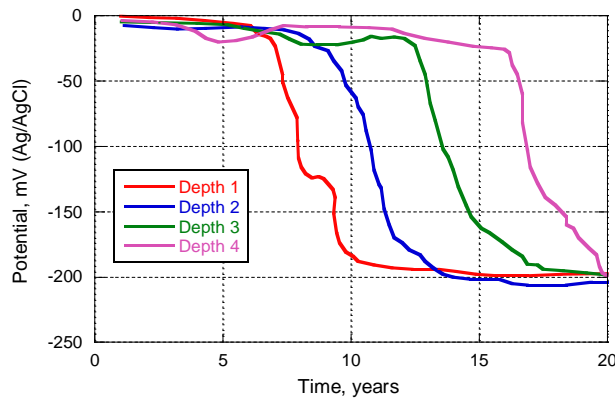
The **CorroWatch** is a multi-probe device consisting of four black steel bars acting as anodes and a noble metal as the cathode. It is attached to the rebars with plastic strips and the anodic bars are positioned at different elevations and when concrete is cast, **CorroWatch** allows determination of corrosion activity as a function of cover distance. The height of the anodes may be adjusted according to the thickness of the concrete cover.

In order to predict when corrosion activity has reached the anodes, the current between the individual anodes and the cathode is measured, either with a handheld Zero Ohm Ammeter or a datalogger. When corrosion starts, the measured current increases significantly.



CorroWatch measurements after long exposure in sea water

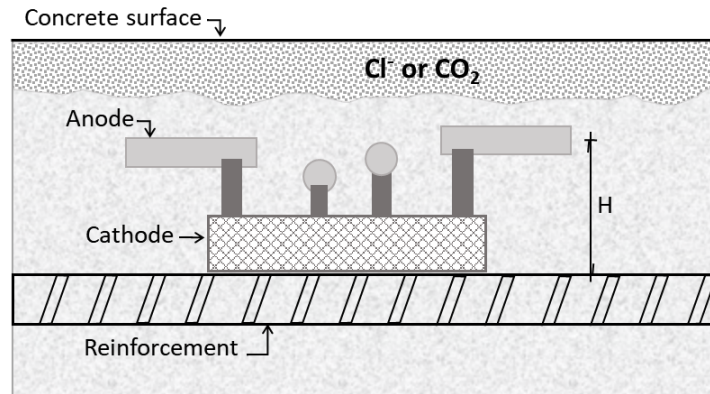
In addition, the **ERE-Probe** (see technical data sheet) may be cast into the concrete along with the **CorroWatch** for monitoring the electrical potentials of its four black steel anodes. By monitoring the potential drop of the four anodes as a function of time, the gradual penetration of the depassivation front can be tracked and the service life can be estimated reliably, based on the actual depth of the reinforcement.



CorroWatch and ERE-Probe potential measurements from a marine structure showing the advancement of the depassivation front

CorroWatch Specifications

- Anodes: 4 black steel bars
 - Length = 60 mm
 - Diameter = 12 mm
- Anode default heights, H: 33, 38, 43 and 48 mm
- Cathode's chamber:
 - External diameter = 85 mm
 - Thickness = 20 mm
- Overall weight = 500 g



Ordering Numbers:

Item	Order #
CorroWatch with 3 meter cables	CW-3
CorroWatch with 5 meter cables	CW-5
CorroWatch with 10 meter cables	CW-10