

Model **650C CORROSOMETER®** Probe Corrosion Monitoring in Concrete

- *Detects when Chloride ingress is nearing the Rebar*
- *Measures and Records Metal Loss Directly*
- *Measures the Corrosion Rate with CP connected*
- *Records Cumulative Metal Loss without an Instrument*
- *By-passes the Unknowns of Electrochemical Methods*



Probe mounted just above Rebar

To prevent deterioration of the reinforced concrete infrastructure, many new structures are installed with Cathodic Protection. CORROSOMETER® probes evaluate the effectiveness of the Cathodic Protection system, as well as provide a test piece that can be electrically isolated to facilitate Cathodic Protection measurements such as de-polarization rates.

In some cases, the cathodic protection may not be installed, or switched on, until corrosion is likely to commence as a result of chloride penetration into the concrete.

When the initiation of the Cathodic Protection is delayed after the initial construction, it is critically important to know the timing for applying the Cathodic Protection. Subsequently, it is important to control the Cathodic Protection and ensure that the steel is being fully protected.

This is where the CORROSOMETER® probe is especially helpful. First of all the CORROSOMETER® probe measures physical metal loss on the probe before and after addition of the Cathodic Protection without the need to know the exact electrochemistry governing the corrosion.

Even when the electrochemical parameters are well known and measured accurately, the conversion of these measurements into actual metal loss is difficult

due to inaccurate assessment of measured areas, or variability in the conversion constants.

Even more important may be the fact that all electrochemical measurements only record the corrosiveness of the environment at the time of taking the reading. Hence without continuous monitoring the ongoing corrosion or metal loss cannot be accurately assessed.

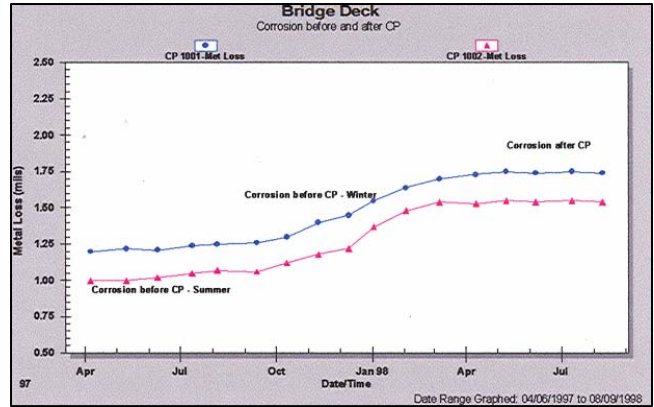
The CORROSOMETER® probe measures cumulative metal loss, so that any corrosion problems that have occurred between probe measurements will NOT be lost, but instead will have been “recorded” by the probe. By positioning probes in critical areas just above the Rebar, the increasing corrosion rate due to penetration of chlorides may be detected before reaching the Rebar, to allow timely initiation of the Cathodic Protection. Once the Cathodic Protection is operational the CORROSOMETER® probe is externally connected to the Rebar and hence the Cathodic Protection potential, to ensure that the applied protection potential is actually preventing corrosion. Some of the probes may be left disconnected from the Cathodic Protection at intervals to confirm the background corrosion rate without the Cathodic Protection.

To monitor these concrete probes, the simplest method is to use a portable CORROSOMETER® instrument such as the Checkmate.



Checkmate Portable Instrument

Readings are taken at intervals and the metal loss recorded. These values are plotted in a spreadsheet or in CORRDATA Plus software to show metal loss over time.

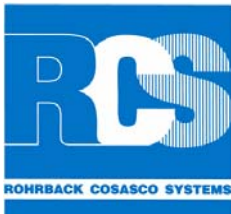


CORRDATA Plus Graph of Metal Loss v. Time

The slope of this graph at any time is corrosion rate. For more sophisticated systems, other electronic monitoring schemes are available such as data logging, or remote monitoring.

Probe Ordering Information:

Model 650C	Concrete Monitoring Probe					
	Code	Grounding Connection				
	0	No Grounding Lead				
	1	Grounding Lead at Connector End				
	2	Grounding Lead at Probe End				
	Code	Element Form				
	T10	10 mils Thickness – 5 mils Useful Probe Life				
	T20	20 mils Thickness – 10 mils Useful Probe Life				
	T50	50 mils Thickness – 25 mils Useful Probe Life				
	Code	Element Alloy				
	K03005	Carbon Steel				
	YYYYYY	Other Alloy (specify UNS Code)				
	Code	Connector Type				
	0	Cable Mount Connector				
	1	Junction Box Connector				
	Code	Cable Length				
	LL	Cable length in feet				
650C	1	T20	K03005	0	20	← Typical Order Number



Rohrbach Cosasco Systems, Inc.
 11841 East Smith Avenue
 Santa Fe Springs, CA 90670, USA
 Tel: (1) 562-949-0123 Fax: (1) 562-949-3065
 US Toll Free: 800-635-6898
 E-Mail: sales@cosasco.com
 Website: www.cosasco.com

