

Purpose

CorroEye is used to monitor the corrosion rate of steel reinforcement in critical areas of a reinforced concrete element or structure by means of a post-installed sensor.

Principle

The reinforcement in question is located and the cover depth and the bar size are measured with a covermeter, e.g., with the **CoverMaster** shown on page 33.

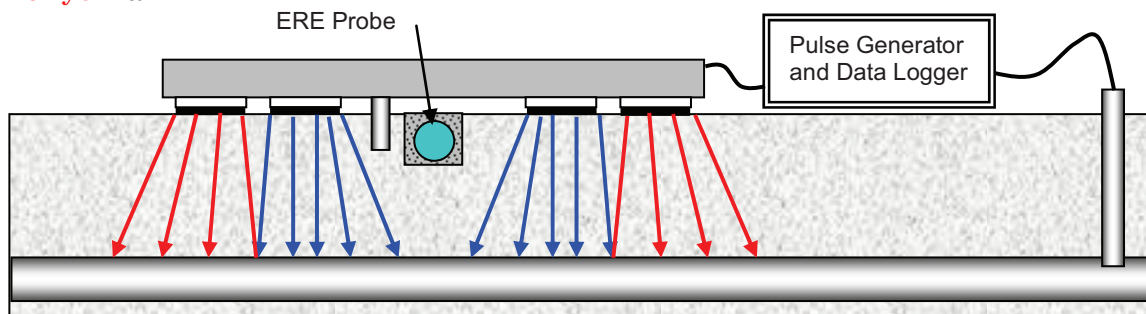
The **CorroEye** sensor is mounted on the surface above the reinforcement. A slot is cut into the surface; an **ERE-Probe** (page 55) is placed in the slot parallel to the surface and covered with mortar. An 8 mm hole is drilled to a depth of 25 mm and a mounting anchor is inserted into the hole and expanded. A firm connection to the reinforcement is made with an adaptor installed in another drilled hole. Electrical connections are made to the pulse generator and the data logger, which has input options for up to eight **CorroEye** sensors.

The 90 mm long **CorroEye** sensor has four 15 mm diameter contact points. The two outer points act as guard electrodes and the two inner points act as counter electrodes, as illustrated below.

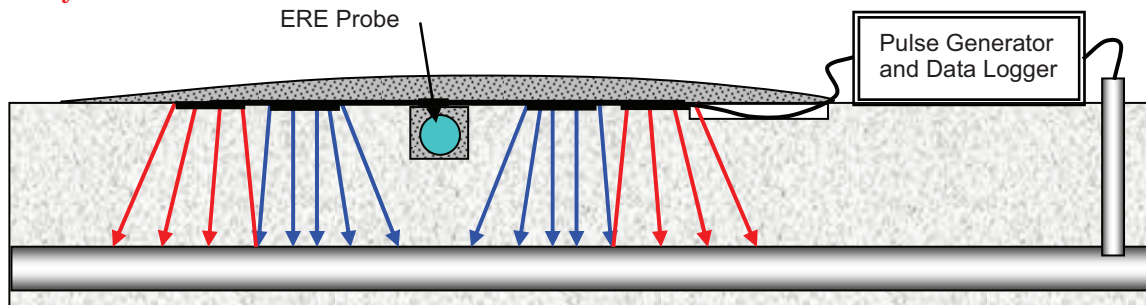
The sensor measures, at pre-set time intervals, the corrosion rate by the same galvanostatic pulse principle as used for the **GalvaPulse** instrument (page 61). The readings are stored in a watertight data logger, which is also attached to the surface at a convenient location. The recorded data are downloaded on-site to a portable computer whenever required. Alternatively, the data logger has an option for connection to a mobile phone for remote monitoring. Each phone line can handle up to 200 data loggers by the RS 485 communication port.

Two types of sensors are available. The **CorroEye** Mark I is used on a vertical surface or on a horizontal surface where the sensor will not interfere with traffic or access. The **CorroEye** Mark II is used in all other cases and is covered with a thin layer of protective mortar.

CorroEye Mark I



CorroEye Mark II



Accuracy and variation

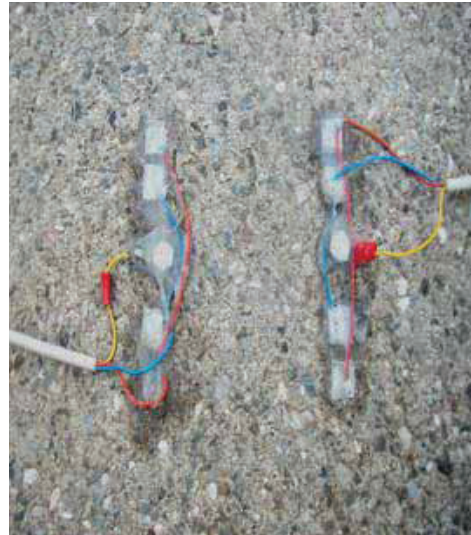
The accuracy of the **CorroEye** is better than stated in the table on page 62 for actively corroding areas because the position of the reinforcement is known before the sensor is attached and the polarized area of the reinforcement is also better defined. The variation from sensor to sensor for measurements on reinforcement with the same corrosion rate is within $\pm 10\%$.

CorroEye

Testing Examples



The **CorroEye** Mark I sensor installed on a vertical surface close to a construction joint in a parking garage (**ERE-Probe** is not shown mounted)



Two **CorroEye** Mark II sensors on a bridge deck before application of a protective mortar overlay (**ERE-Probe** is not shown mounted)



The **CorroEye** pulse generator and data logger unit

CorroEye Ordering Numbers

Item	Order #
CorroEye , Mark I sensor with 20 meter cable	CE-MkI-20-100
CorroEye , Mark II sensor with 20 meter cable	CE-MkII-20-110
CorroEye Pulse generator and data logger, box	CE-PGDL-120
CorroEye PC card for downloading test results to a PC	CE-PC card-130
Anchors, 8 mm, 20 pcs	CE-140
Set of anchoring tools	CE-150
ERE-Probe , with 3 m cable	ERE-Probe-3

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