Real time corrosion monitoring in atmosphere using automated battery driven corrosion loggers

A logger enabling continuous measurement of corrosion rate of selected metals in indoor and outdoor atmospheres has been developed. Principle of the measurement method is based on the increasing electrical resistance of a measuring element made of the material concerned as its cross-sectional area diminishes due to corrosion. Zinc, iron, copper and nickel sensors at several thicknesses are available. Sensitivity of the corrosion measurement varies from 1 to 10 nm depending on the type and thickness of the sensor. Changes in the air corrosivity can be thus detected within hours or even tens of minutes. The logger lifetime in medium corrosive environments is designed to be 2 years with full autonomy. Data on the sensor corrosion rate are available any time through GPRS connection or by a non-contact inductive reading without the need of retracting the logger from the exposure site.

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