



Sonco bv
Corrosion & Coating Solutions

EIS Inspections

Measuring coating performance

EIS: Electrochemical Impedance Spectroscopy

Already in 1948 Bacon Smith and Rugg started to evaluate organic coatings with electrochemical measurement techniques for the US navy. Despite their good and reliable results such measurements were hardly applied until the development of EIS in the 70's. In the scientific world EIS has been in use since the early 80's to evaluate coating systems. It is fully accepted as a technique where short term testing can provide reliable information of long-term coating performance.

Recent developments in the semi-conductor industry have strongly reduced the size of the equipment needed, thus making the technique very useful for inspections.

For inspection EIS results can help save enormous costs like avoiding blasting if not necessary or optimising the maintenance activities.



Coating selection

A combination of EIS test results with additional tests like mechanical tests and chemical resistance information makes it possible to formulate a guideline for coating selection based upon reliable data. Apart from this a new ISO standard is recently formulated: ISO 16773. In this standard EIS is outlined to be further used as a standard tool to test coatings.

Inspection

Since EIS provides information about protective properties of intact coatings, it now becomes possible to measure properties that normally can not be detected. In this way protective coating properties can be measured. Due to this, EIS can also be used for inspection of intact coating systems. In this way reliable information can be obtained for crucial decisions like:

- When maintenance has to be planned and executed.
- Whether complete blasting is necessary or if cheaper alternatives can be used.

Coating Development

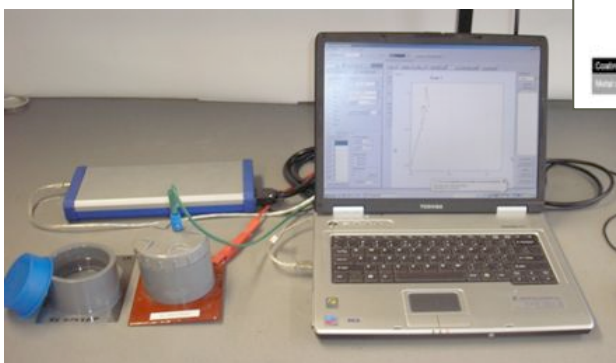
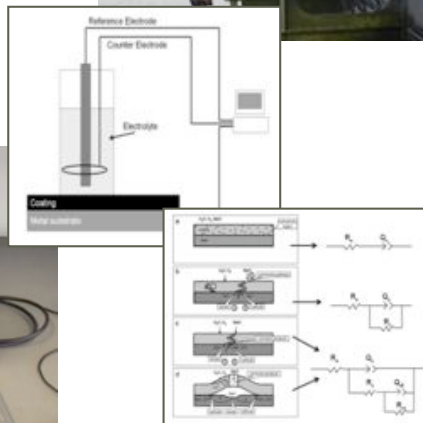
Together with several coating manufacturers, Sonco is using EIS to develop new and optimizing coating formulations.

Apart from this, this cooperation makes it possible to evaluate and measure the effectiveness of new ingredients and technologies used for corrosion protection.

Fast and easy

For coating selection EIS can provide reliable data of new coating systems even within a period of a few weeks of testing!

For inspection of already degraded coatings EIS can provide reliable data even within a few hours.



EIS

- provides reliable data for predicting long-term coating behaviour.
- quantifies the protective behaviour of coatings.
- reliably evaluates the corrosion protective properties of coatings.
- can even identify the protective mechanisms of coatings.
- measure coating performance, instead of testing it.

