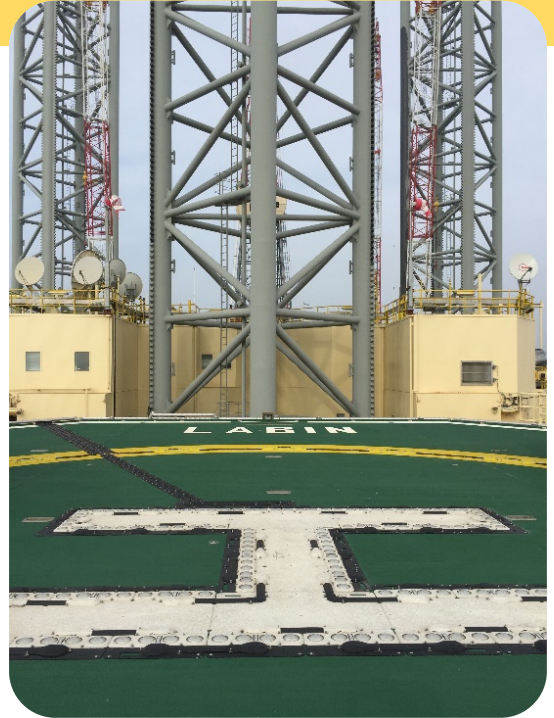


TESTING PURPOSE

Providing coating producers, coating specifiers and structure owners with information on coating impedance as an indicator of its barrier action and protective ability. The advantage of the test is that it can indicate changes in the coating long before any visible damage commences, therefore, detecting the early coating degradation signs. The benefits of testing may include: speeding up the coating formulation process, quickly prequalifying the coating application processes and coating solutions, specifying the coating systems based on quantitative parameters, increasing confidence in guarantee time and estimated durability, reducing costs by choosing the optimum coating solutions for a specific use.



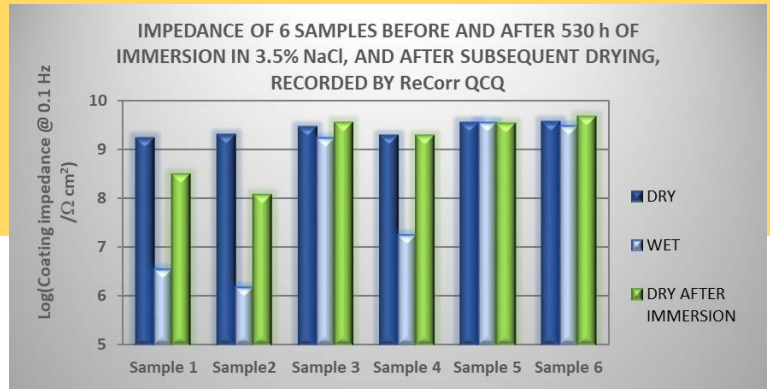
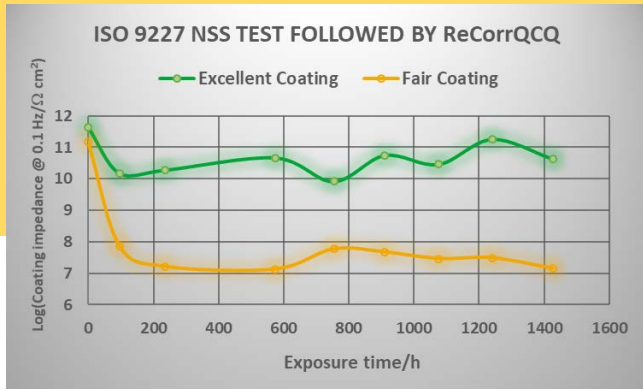
TYPES OF SAMPLES

Any type of coated metallic samples is appropriate for the coating impedance measurements. In custom configuration the sample should accommodate a single sensor electrode or a pair of sensor electrodes, typically 4 cm × 6 cm each, surrounded by at least 1 cm of the coated surface. Alternative electrode design is used for small or irregular geometry samples.



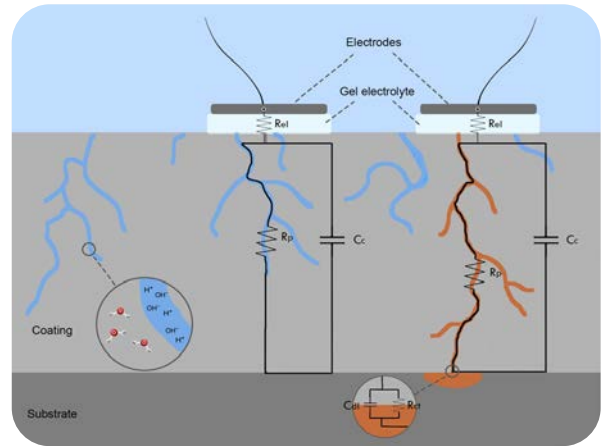
TYPES OF EXPOSURE

Any type of exposure, natural or accelerated, is appropriate for the coating impedance measurements. The measurement is either done *in situ* on samples exposed to the natural environment or on samples which are, with the purpose of measurement, shortly removed from the accelerated exposure area.



TEST RESULTS

- coating impedance @0.1 Hz as a function of exposure time (figure above left)
- coating impedance @0.1 Hz for various coating conditions e.g. dry state before exposure, the wet state during exposure and dry state after exposure (figure above right)
- statistical analysis of impedances acquired @0.1 Hz, measurement uncertainty and compliance with the specification
- impedance spectra as a function of exposure time
- detection of samples with corrosion under the coating and detection of the time to corrosion appearance
- coating capacitance, dielectric constant and water uptake calculations



TEST REPORT

The Paint System Test Report invokes ISO 16773 and typically contains details of the measurement and exposure regime, surface preparation and paint application techniques, paint system relevant data, numerical and graphical measurement results and paint system compliance with specification declaration.

The report may be supplemented by coating equivalent circuits and fitted circuit parameters, coating capacitance, dielectric constant and water uptake calculations, visual rating of paint defects, measurements of adhesion, porosity, hardness, gloss, cathodic disbondment, Fourier transform infrared spectroscopy, differential scanning calorimetry and other complementary methods.



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