

**Catching the IR-free potential: an overview of the remaining IR components in Off measurements, and importance of the design for PRE with integrated coupon.**

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**ABSTRACT:**

As known, ISO 15589-1 protection criteria refers to IR-Free potentials values to be met by applying CP to limit corrosion rate and at the same time to avoid overprotection: in this respect, according to the type of currents influencing the metallic structure, EN 13509 proposes different measurement techniques for measuring IR Free potential.

Off potential measurements are usually performed, both on pipeline and by means of coupon, to try catching the best approximation for the IR-free potential value: for this reason, a fully understanding of all the components that contribute to the obtained potential measure is of very great importance for making better assessment.

In this paper, an overview of the IR components remaining in Off measurements is shown, in order to give a better understanding of the results obtained while performing a method or another.

Particularly, when performing instant-off measurements on coupon, both the effects of measurement timing and the importance of the design of the permanent reference electrode with coupon used will be shown by means of real field data.