

Critical Corrosion Temperature (CCorrT) A Novel Electrochemical Methodology to Qualify Coatings at High Temperature in Chloride Containing Environments

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ABSTRACT

This paper presents the results from a novel methodology, the Critical Corrosion Temperature (CCorrT), which consists of monitoring the electrochemical potential (at the Open Circuit Potential) and the electrochemical current of coated steels at High Temperature in simulated seawater. Preliminary tests revealed that a Critical Corrosion Temperature (CCorrT) and the time are need it to allow for the development of defects (and holidays) within several commercially available coatings. Preliminary tests revealed good correlation between the performance of commercially available coatings (Urethanes, Epoxies and Fusion Bonded Epoxies) compared to corrosion resistant alloys like Inconel 625.

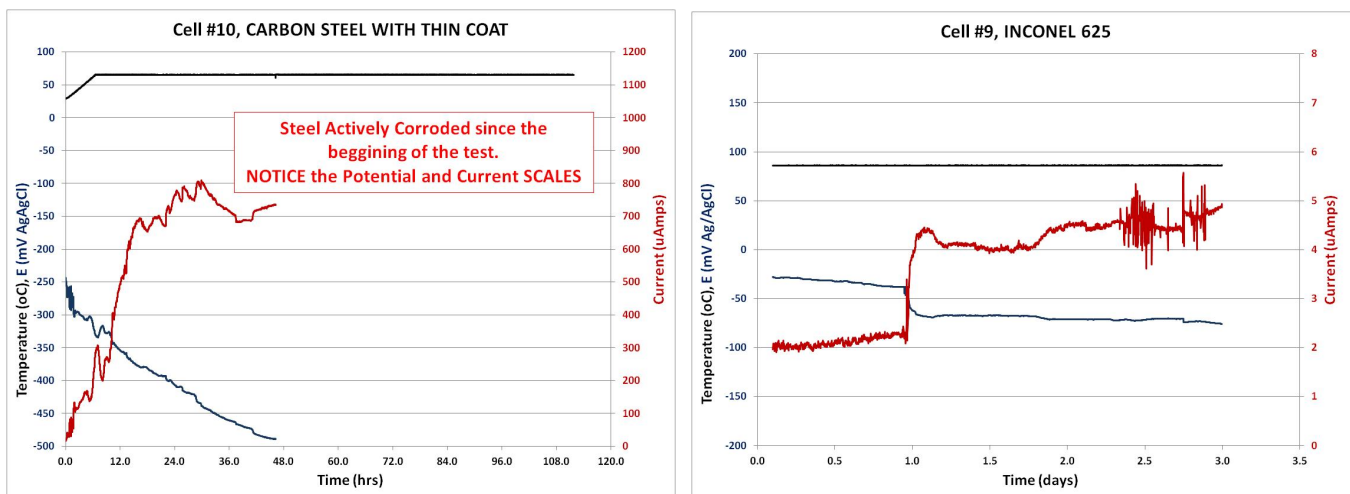


Figure 1, coated carbon steel after testing at 60°C and Inconel 625 after testing at 85°C