Effects of nano pigment on the corrosion resistance of Zinc-rich primer

Zinc-rich primers technology has been used for years, finding application in marine industry, civil infrastructure and military vehicles. Zinc-rich layer is used as a single coat or as a component of the paint system. Sacrificial pigments such as zinc pigments require zinc in large quantities in order to enable flow of electric current. The electrical properties of zinc oxide (ZnO) are interesting and complex. ZnO nanoparticles act as an inhibitor to chloride-induced corrosion, seal pores in primer and improves the barrier properties. In the present study, ZnO nanoparticles was added in various weight fractions in zinc-rich primer and the effect of ZnO nanoparticles on corrosion protection properties was evaluated when immersed in NaCl 5.3 wt.% by electrochemical impedance spectroscopy measurements and using salt spray test for 200 hr of exposure.

Keywords: Zinc-rich primer- EIS- Salt spray- Nanoparticle

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