

Selection of optimal corrosion tests in view of degradation mechanisms of organic coatings

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It is accepted that field exposure of painted specimens with realistic features in climate corresponding to application conditions is the only method to provide fully relevant information about long-term performance of metal structures protected with organic coatings. However, it is impractical and often also too costly to expose painted panels or products at outdoor exposure sites for many years or even decades before obtaining any reasonable ranking. Therefore, significant efforts are invested into development of accelerated tests providing good correlation to field data. Although a lot has been achieved in this sense, there is still no fit-to-all accelerated corrosion test for painted metal structures available. Arguably, it is even not realistic to expect such a test can be developed. In the talk, another approach will be presented. Available test methods will be reviewed in respect to degradation mechanisms they induce and selection of an optimal battery of tests discussed. Examples of relevant tests and correlation of their results to field data will be given in connection to principal degradation mechanisms of painted metal structures.

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