

Guide for Improving the Statistical Quality of Dry Coating Thickness Data on Ferrous and Non-ferrous Metal Substrates Using Continuous Read/Scanning Technology

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Foreword

This guide discusses the rationale and method for improving the statistical quality of coating dry film thickness (DFT) data on ferrous and non-ferrous metal substrates by collecting a larger, more representative data set on various geometries of coated metal surfaces. The data points are collected using traditional Type 2 (electronic) coating thickness gages programmed with continuous read/scanning capability and specialty probes or probe covers, if required by the instrument manufacturer. The guide provides supplementary information to the procedure for obtaining measurements contained in Appendix 10 of the 2022 revision of SSPC-PA 2, "Procedure for Determining Conformance to Dry Coating Thickness Requirements."

Scope

The guide presents a summary of past research that provides evidence of improved statistical quality of coating thickness data, reviews existing standards referencing continuous read/scanning technology, describes instrumentation requirements, explores various probe traversing patterns based on the geometry of the structure/item being inspected, presents the advantages and limitations of employing continuous read/scanning methodology, proposes best practices for data management, and provides suggested language to assist the specifier in invoking requirements for obtaining a greater population of coating thickness measurements on a project.

Rationale

This guide is intended to inform specifiers about the use of continuous-read or scanning technologies for quickly obtaining large numbers of coating thickness readings. These technologies may be specified for use on projects that would benefit from analysis of large batches of coating thickness readings.

Referenced Standards and Other Consensus Documents

The latest edition, revision, or amendment of the referenced documents in effect shall govern unless otherwise dated.

AMPP/NACE/SSPC, www.ampp.org:

NACE/ASTM G193 Standard Terminology and Acronyms Relating to Corrosion

SSPC-PA 2 Procedure for Determining Conformance to Dry Coating Thickness Requirements

ASTM International, www.astm.org:

ASTM D7091 Standard Practice for Nondestructive Measurement of Dry Film Thickness of Non-magnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals

IEEE SA, www.ieee.org:

IEEE/ASTM E11 American National Standard for Metric Practice