AMPP TM21449-2021
Approved September 2, 2021

Continuous Measurements for Determination of Aerospace Coating Protective Properties

Continuous Measurements for Determination of Aerospace Coating Protective Properties

This AMPP standard represents a consensus of those individual members who have reviewed this document, its scope, and provisions. Its acceptance does not in any respect preclude anyone, whether he or she has adopted the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not in conformance with this standard. Nothing contained in this AMPP standard is to be construed as granting any right, by implication or otherwise, to manufacture, sell, or use in connection with any method, apparatus, or product covered by Letters Patent, or as indemnifying or protecting anyone against liability for infringement of Letters Patent. This standard represents minimum requirements and should in no way be interpreted as a restriction on the use of better procedures or materials. Neither is this standard intended to apply in all cases relating to the subject. Unpredictable circumstances may negate the usefulness of this standard in specific instances. AMPP assumes no responsibility for the interpretation or use of this standard by other parties and accepts responsibility for only those official AMPP interpretations issued by AMPP in accordance with its governing procedures and policies which preclude the issuance of interpretations by individual volunteers.

Users of this AMPP standard are responsible for reviewing appropriate health, safety, environmental, and regulatory documents and for determining their applicability in relation to this standard prior to its use. This AMPP standard may not necessarily address all potential health and safety problems or environmental hazards associated with the use of materials, equipment, and/or operations detailed or referred to within this standard. Users of this AMPP standard are also responsible for establishing appropriate health, safety, and environmental protection practices, in consultation with appropriate regulatory authorities, if necessary, to achieve compliance with any existing applicable regulatory requirements prior to the use of this standard.

CAUTIONARY NOTICE: AMPP standards are subject to periodic review and may be revised or withdrawn at any time in accordance with AMPP technical committee procedures. AMPP requires that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of initial publication and subsequently from the date of each reaffirmation or revision. The user is cautioned to obtain the latest edition. Purchasers of AMPP standards may receive current information on all standards and other AMPP/NACE/SSPC publications by contacting the AMPP Customer Support Department, 15835 Park Ten Place, Houston, Texas 77084-5145 (Tel: +1 281-228-6200, email: customersupport@ampp.org).

Document History
2021-09-02: Developed by AMPP Standards Committee (SC) 07, Defense & Aerospace.

AMPP values your input. To provide feedback on this standard, please contact: standards@ampp.org

Continuous Measurements for Determination of Aerospace Coating Protective Properties

Figures

Scope

This standard describes three Test Methods for conducting a coating evaluation for comparative performance testing, coating specification, and coating quality acceptance testing. The standard is organized to provide a general description of the Test Method (Sections 1 – 6) with three mandatory appendices that are arranged by coating protective properties and failure progression.

Appendix A (Mandatory), Barrier Properties of a Coating
Appendix B (Mandatory), Protective Corrosion Properties of a Coating at a Defect
Appendix C (Mandatory), Protective Properties of a Coating for Environmental Cracking Resistance

The Test Method describes the equipment required to conduct each type of performance test including the atmospheric corrosion test chamber, environmental monitoring, and coating performance property measurements. Materials, sensors, and test samples are detailed and guidance for materials preparation and coating application is given. The electrochemical measurements and sensors are applicable to liquid, polymer coatings applied by spray, brush, or dip processes. Atmospheric corrosion test cycles for protective property measurements are described. The method includes reporting requirements for documenting environment, materials, and sample conditions. Data collection for test records and data analysis to establish coating performance metrics are defined. The values stated in International System of Units (SI) are to be regarded as standard, although some U.S. customary units are used in this standard.

Rationale

This Test Method addresses the need for coating performance measurements that are relevant to the protection of aerospace structures.

In AMPP standards, the terms *shall* and *must* are used to state requirements and are considered mandatory. The term *should* is used to state something that is recommended, but is not considered mandatory. The term *may* is used to state something considered optional.