NACE SP0487-2019
Item No. 21037
Revised 2019-05-08
Reaffirmed 2007-03-15
Revised 2000-01-14
Reaffirmed August 1993
Approved October 1987

Considerations in the Selection and Evaluation of Rust Preventives and Vapor Corrosion Inhibitors for Interim (Temporary) Corrosion Protection

ABSTRACT

Provides guidance and best practices to users of interim, or temporary, coatings for corrosion protection of metals, including performance criteria, selection, surface preparation and application, evaluation of coatings, and other usage requirements. Quality control criteria are listed to enable the manufacturer and user to select appropriate test procedures to maintain prescribed standards. The standard is intended to assist the new buyer or user as well as the experienced user of interim coatings in the proper selection and evaluation of these coatings.

KEYWORDS

Corrosion control, temporary corrosion coating (TCC), interim corrosion coating (ICC), vapor corrosion inhibitor (VCI), rust preventive (RP), volatile organic compound (VOC), TG 261.

ISBN 1-57590-097-1

Foreword

Competitive manufacturing operations with metal components, assemblies and finished goods are driven to continuously reduce costs and appearance defects from corrosion. The most pervasive corrosion issues are experienced as “rust” of ferrous metal surfaces, but corrosion is also seen, either as a problem or beneficially, as “tarnish,” “patina,” or “white rust” on various non-ferrous metals. Corrosion is pervasive in production of automotive parts and assemblies during metalworking operations, in-process holding, land and ocean shipments of intermediate parts and sub-assemblies, and storage and use of final products and equipment. Corrosion costs also include loss of actual and perceived quality from degraded appearance and performance. Accelerating factors are surface contaminants from various metalworking and washing fluids (whether fresh or recirculated and reused), from handprints, and from atmospheric temperature and humidity, in addition to contaminants such as sea air chlorides or industrial and vehicle acidic pollutants.

The drive to continuously reduce the costs of corrosion must consider various process controls, ranging from elimination of surface contaminants by choice and maintenance of in-process fluids, cleaning and drying processes, control of storage and shipment conditions, and effective use of corrosion inhibitors for interim (temporary) corrosion protection. The interim nature of these coatings refers both to the typical periods of their use and to their effectiveness, which ranges from hours to months, rarely more than a year. “Temporary” refers to the coatings being intended to be removed before a subsequent production process or use, such as before surfaces are painted or plated.

This NACE standard was originally prepared in 1987 by NACE Task Group (TG) T-6H-42, a component of Unit Committee T-6H on Coating Materials for Atmospheric Service. It was reaffirmed in 1993 by Unit Committee T-6H, technically revised in 2000 by TG T-6H-42, and reaffirmed in 2007 by Specific Technology Group (STG) 02 on Coatings and Linings, Protective: Atmospheric. It was revised in 2019 by TG 261 on Vapor Corrosion Inhibitors and Rust Preventives for Interim (Temporary) Corrosion Protection, which is administered by STG 61 on Inhibition—Corrosion and Scaling and sponsored by STG 02. It is issued by NACE International under the auspices of STG 61.

In NACE standards, the terms ***shall, must, should,*** and ***may*** are used in accordance with the definitions of these terms in the NACE Publications Style Manual. The terms ***shall*** and ***must*** are used to state a requirement, and are considered mandatory. The term ***should*** is used to state something good and is recommended, but is not considered mandatory. The term ***may*** is used to state something considered optional.

Considerations in the Selection and Evaluation of Rust Preventives and Vapor Corrosion Inhibitors for Interim (Temporary) Corrosion Protection