Selection and Application of a Coating System to Interior Surfaces of New and Used Rail Tank Cars in Molten Sulfur Service

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Document History

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2007: Revised by NACE Specific Technology Group (STG) 43, Land Transportation

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Foreword

This AMPP standard practice addresses the need for quality application of coatings to the interior surfaces of steel rail tank cars transporting molten sulfur. It covers surface preparation; selection and application of coating materials; inspection of the completed coating system; and testing using adequate, readily available instruments. This standard provides guidelines to the builder, owner, shipper, and all those involved in the production and use of rail tank cars intended for the transport of molten sulfur.

In addition to adhering to the conditions set forth in this standard, rail tank cars must comply with U.S. Department of Transportation[1] (DOT) specifications or Association of American Railroads[2] (AAR) standards. Specification M-1002 required all rail tank cars in molten sulfur service to be inspected and protected by 2003. This standard is not meant to provide a full treatise on corrosion of steel in molten sulfur service because that is an extensive subject in its own right.

The maximum legal service life of a tank car is 50 years. Rail tank cars usually do not meet this expectation without special measures and regular maintenance. The service life of a tank car transporting molten sulfur could be reduced without a protective coating. Industry consensus points to interior coatings as one protective measure for tank cars transporting molten sulfur.

Scope

This AMPP standard is intended for use by North America-based rail car manufacturers, owners, operators, and repairers who are seeking guidance concerning all facets of interior coating application processes and procedures relative to molten sulfur tank cars.

Rationale

This standard was reviewed by SC 17 and deemed to have continuing relevance for the rail industry, hence it is being revised.

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 SP0178	Design, Fabrication, and Surface Finish Practices for Tanks and Vessels to Be Lined for Immersion Service
SSPC-SP 1	Solvent Cleaning
NACE No. 1/SSPC-SP 5	White Metal Blast Cleaning
SSPC-PA 17	Procedure for Determining Conformance to Steel Profile/Surface Roughness/Peak Count Requirements
SSPC-Guide 15	Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates
NACE Standard TM0174	Laboratory Methods for the Evaluation of Protective Coatings and Lining Materials on Metallic Substrates in Immersion Service
SSPC-Guide 12	Guide for Illumination of Industrial Painting Projects
SSPC-PA 2	Procedure for Determining Conformance to Dry Coating Thickness Requirements
NACE SP0188	Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates

[1] U.S. Department of Transportation (DOT), 1200 New Jersey Ave. SE, Washington, DC 20590, www.dot.gov.
[2] Association of American Railroads (AAR), 425 3rd Street SW, Washington, DC 20024, www.aar.org.

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