NACE SP0105-2024
Revised January 29, 2024

Field-Applied Liquid Coatings for Weld Joints and External Repair and Rehabilitation of Buried Steel Pipelines

Field-Applied Liquid Coatings for Weld Joints and External Repair and Rehabilitation of Buried Steel Pipelines

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CAUTIONARY NOTICE: AMPP standards are subject to periodic review and may be revised or withdrawn at any time in accordance with AMPP technical committee procedures.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 AMPP Customer Support, 15835 Park Ten Place, Houston, Texas 77084-5145 (Tel: +1 281-228-6200, email: customersupport@ampp.org).

Document History:

2024-01-29: Revised by AMPP Standards Committee (SC) 03, External Coatings – Buried & Immersed.

2005-10-15: Approved as RP0105 by NACE Specific Technology Group (STG) 03 on Coatings and Linings, Protective: Immersion and Buried Service

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

Field-Applied Liquid Coatings for Weld Joints and External Repair and Rehabilitation of Buried Steel Pipelines

Foreword

This AMPP standard practice presents guidelines for establishing minimum requirements to ensure proper material selection, application, and inspection of pipeline liquid coatings used for the repair and rehabilitation of previously coated, buried steel pipelines and for coating the external surfaces of field joints on newly constructed, buried steel pipe. This standard addresses the required properties, application recommendations, and quality control testing for field-applied liquid coating using various chemistries on buried steel pipelines. Examples of currently used chemistries for field-applied liquid coatings include epoxies, polyurethanes, and vinyl esters. This standard is intended for use by corrosion control personnel, design engineers, project managers, suppliers, purchasers, and construction engineers and managers.

Coating selection for repair, rehabilitation, and field joints on buried steel pipelines is determined by specific criteria relating to the project to be executed. In some cases, the factors limiting the selection of coatings are similar to those considered during new pipeline coating activities, but when a pipeline is coated in the field, there are additional factors that must be considered.

Liquid coating repair, rehabilitation, or field joint coating (FJC) can be applied in, over, or beside a ditch, whether the pipeline is in service, out of service, or segmented. Application is dependent on many factors, including temperature.

Scope

The scope of this standard is to establish minimum requirements to ensure proper application, inspection, and performance of a field-applied liquid coating system for field repair, rehabilitation, or girth weld joints on buried, external steel substrates. Included are methods for qualifying and controlling the quality of a liquid coating system, guidelines for its proper application and inspection, and repair techniques to ensure its long-term performance. The coating in the standard can be applied to girth weld joints during the construction of buried pipelines and their appurtenances that are used for conveying liquids or gases. The coating system shall consist normally of one layer of liquid product, applied by brush or by a spray technique. Other application methods (spatula, injection, spreading, etc.) can be recommended by the product supplier, in accordance with the product requirements.

Rationale

This standard is being revised due to the length of time that has passed since the previous revision and to include chemistries currently available as field-applied liquid coatings in addition to epoxies.

Referenced Standards and Other Consensus Documents

Unless specifically dated, the latest edition, revision, or amendment of the documents listed in the table below shall apply.

AMPP/NACE/SSPC, www.ampp.org:	
NACE SP0287	Field Measurement of Surface Profile of Abrasive Blast Cleaned Steel Surface Using a Replica Tape
NACE SP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
NACE SP0394	Application, Performance, and Quality Control of Plant-Applied, Fusion-Bonded Epoxy External Pipe
NACE SP0490	Holiday Detection of Fusion-Bonded Epoxy External Pipeline Coatings of 250 to 760 µm (10 to 30 mils)
NACE TM0115	Cathodic Disbondment Test for Coated Steel Structures Under Cathodic Protection