



NACE Standard RP0399-2004
Item No. 21089

Standard Recommended Practice

Plant-Applied External Coal Tar Enamel Pipe Coating Systems: Application, Performance, and Quality Control

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Reaffirmed 2004-03-31
Approved 1999-04-24
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ISBN 1-57590-077-7
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Foreword

This NACE standard recommended practice provides the most current technology and industry practices for the use of plant-applied coal tar enamel external pipe coating systems. This standard is intended for use by corrosion-control personnel, design engineers, project managers, purchasing personnel, and construction engineers and managers. It is applicable to underground steel pipelines in the oil and gas gathering, distribution, and transmission industries.

This standard was originally prepared in 1999 by NACE Task Group T-10D-2 on Coal Tar Enamel Coatings, a component of Unit Committee T-10D on Protective Coating Systems. It was reaffirmed in 2004 by Specific Technology Group (STG) 03 on Protective Coatings and Linings—Immersion/Buried. This standard is issued by NACE International under the auspices of STG 03.

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Section 1: General

1.1 This standard establishes minimum requirements to ensure proper application and performance of a plant-applied coal tar enamel system to the external surfaces of pipe. Included are methods for qualifying and controlling the quality of a coal tar enamel (CTE) system, guidelines for

its proper application, and inspection and repair techniques to ensure its long-term performance.

1.2 This standard is applicable to coating systems used to prevent corrosion in conjunction with cathodic protection.

Section 2: Definitions

Applicator: The organization responsible to the purchaser for the coating application.

Batch: Quantity of coating material produced in a single production run.

Coating Materials: Primer, coal tar enamel, and reinforcing wrap.

Coating System: The complete number and types of coats applied to a substrate in a predetermined order. (When used in a broader sense, surface preparation, pretreatments, dry film thickness, and manner of application are included.)

Cutback: The length of pipe left uncoated at each end for joining purposes (e.g., welding, push-on, etc.).

Holiday: A discontinuity in a protective coating that exposes unprotected surface to the environment.

Inspector: The authorized agent of the purchaser.

Purchaser: The owner company or the authorized agency that purchases the coated pipe.

Shelf Life: The maximum allowed storage time for a coating material prior to its use.

Supplier: The manufacturer and/or distributor of the coating material and its authorized technician.

Section 3: Coating Systems

3.1 The standard coal tar enamel coating system required for normal conditions contains the following components:

- (a) Primer
- (b) Coal tar enamel: 2.4 mm (94 mils) minimum
- (c) Fiberglass innerwrap
- (d) Coated fiberglass or other performance-comparable outerwrap
- (e) Kraft paper, water-emulsion latex paint, or whitewash

3.2 The double-coat-and-wrap coal tar enamel coating system required for submerged lines, extraordinarily severe

trench conditions, or other similarly difficult conditions contains the following components:

- (a) Primer
- (b) Coal tar enamel: 2.4 mm (94 mils) minimum
- (c) Fiberglass innerwrap
- (d) Coated fiberglass or other performance-comparable outerwrap
- (e) Coal tar enamel: 0.79 mm (31 mils) minimum
- (f) Coated fiberglass or other performance-comparable outerwrap
- (g) Kraft paper, water-emulsion latex paint, or whitewash

Section 4: Coating Material

4.1 Coating Material Supplier Information

4.1.1 Upon request, the coating material supplier shall furnish the following information for the purchaser and/or applicator in writing:

- (a) Directions for handling and storage of the coating material
- (b) Laboratory performance test results of the basic physical properties of the coating materials
- (c) Certification of the physical properties of each batch of material
- (d) Material safety data sheets (MSDS)