



Standard Recommended Practice

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

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Foreword

This NACE standard recommended practice provides the most current technology and industry practices for the use of field-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 prepared by NACE Task Group 250 on Coal-Tar Enamel Coatings for External Repair, Rehabilitations, and Weld Joints on Pipelines. This Task Group is administered by Specific Technology Group (STG) 03 on Protective Coatings and Linings—Immersion/Buried, and is sponsored by STG 04 on Protective Coatings and Linings—Surface Preparation, and STG 35 on Pipelines, Tanks, and Well Casings. This standard is issued by NACE International under the auspices of STG 03.

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Section 1: General

1.1 This standard presents guidelines for establishing minimum requirements to ensure proper application and performance of a field-applied coal tar enamel (CTE) system to the external surfaces of pipe. Included are methods for qualifying and controlling the quality of a 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 CTE coating systems used to prevent corrosion in conjunction with cathodic protection.

1.3 This standard complements the discussion of plant-applied CTE pipe coating systems in NACE Standard RP0399.¹

Section 2: Definitions

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

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

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.) For the purpose of this standard, the coating system includes primer, coal tar enamel, and reinforcing wraps after coating application to the substrate.

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

Inspector: An authorized agent of the purchaser.

Purchaser: The owner company or the authorized agency that has the authority over the pipe to which the coating is to be applied.

Repair Area: Area of original coating systems damaged that is being repaired by the coating materials.

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

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

Weld Area: The length of pipe left uncoated after being welded together during field installation of the pipeline.

Section 3: Coating Systems

3.1 The standard CTE coating system contains the following components:

- (a) primer;
- (b) coal tar enamel: 2.4-mm (94-mil) minimum thickness;
- (c) glass fiber innerwrap;
- (d) coated glass fiber or other performance-comparable outerwrap; and
- (e) if required, kraft paper, or water-emulsion latex paint, or whitewash.

3.2 The double-coat-and-wrap CTE 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-mil) minimum thickness;
- (c) glass fiber innerwrap;
- (d) coated fiberglass or other performance-comparable outerwrap
- (e) coal tar enamel: 0.80-mm (31-mil) minimum thickness;
- (f) coated glass fiber or other performance-comparable outerwrap; and
- (g) if required, kraft paper, or water-emulsion latex paint, or whitewash.