

## **Standard Practice**

# **Application, Performance, and Quality Control of Plant-Applied Single-Layer Fusion-Bonded Epoxy External Pipe Coating**

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## Foreword

This NACE International standard practice presents guidelines for establishing requirements to ensure proper application and performance of plant-applied single -layer fusion-bonded epoxy (FBE) coatings to the external surfaces of carbon steel pipe.

It is intended for use by corrosion control personnel concerned with mitigation of corrosion on buried and submerged piping used for transportation and storage of oil, gas, water, and similar products.

This NACE standard was originally prepared in 1994 by NACE Task Group (TG) T-10D-10, a component of Unit Committee T-10D, "Protective Coating Systems." It was revised in 2002 and 2013 by NACE TG 031 (formerly TG T-10D-10), "Pipeline Coating Plant-Applied Single Layer Fusion-Bonded Epoxy: Review of NACE Standard RP0394," administered by Specific Technology Group (STG) 03, "Protective Coatings and Linings—Immersion/Buried." It is sponsored by STG 05, "Cathodic/Anodic Protection"; and STG 35, "Pipelines, Tanks, and Well Casings." This standard is published by NACE under the auspices of STG 03.

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.

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# Application, Performance, and Quality Control of Plant-Applied Single-Layer Fusion-Bonded Epoxy External Pipe Coating

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## Section 1: General

1.1 This standard presents guidelines for establishing the minimum requirements to ensure proper application and performance of plant-applied single-layer fusion-bonded epoxy (FBE) coatings to the external surfaces of pipe.

1.2 The function of such coatings is to prevent corrosion when used in conjunction with cathodic protection.

1.3 This standard describes methods for qualifying and controlling the quality of FBE pipe coatings, provides guidelines for proper application, and identifies inspection and repair techniques to obtain the best applied FBE coating system.

1.4 Appendixes A through N describe the methods for testing various properties of coatings and all are mandatory for compliance with this standard.

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## Section 2: Definitions

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

**Batch:** The quantity of coating material produced during a continuous production run of not more than 8 hours.

**Coating:** (1) A liquid, liquefiable, or mastic composition that, after application to a surface, is converted into a solid protective, decorative, or functional adherent film; (2) (in a more general sense) a thin layer of solid material on a surface that provides improved protective, decorative, or functional properties.

**Coating Material:** Epoxy powder.

**Outback:** The length of pipe left uncoated at each end for joining purposes (e.g., welding).

**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.

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

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## Section 3: Coating Materials

### 3.1 Supplier Information

The suppliers must provide the following:

- (a) Directions for handling and storage of the coating materials;
- (b) Material safety data sheets (MSDS);
- (c) Certification of the determined physical properties of batch (batch certificate) in accordance with Table 1 (see Paragraph 3.3);
- (d) Product quality certificate in accordance with Table 2 (see Paragraph 3.4); and
- (e) Technical data sheet (TDS) with basic physical properties including operating temperature limits of the product.

### 3.2 Labels

All boxes of epoxy powder supplied shall be labeled with the following information:

- (a) Epoxy powder manufacturer's name;