

Standard Practice

Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars

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Foreword

This NACE standard practice provides owners, architects, engineers, and contractors with specific information and guidelines for obtaining and installing properly cleaned and coated steel reinforcing bars. This standard includes requirements for the epoxy coatings and instructions for ordering, cleaning, coating, inspecting, handling, transporting, and installing the reinforcing bars.

This standard was originally prepared in 1995 by Task Group (TG) T-3K-4 with input from members of NACE Group Committee T-6, "Protective Coatings and Linings"; and revised in 1999 by Work Group (WG) T-11-3a (formerly TG T-3K-4), "Organic Coatings for Steel Reinforcing Rod in Concrete," a component of TG T-11-3, "Coatings for Concrete and Reinforcing Steel." It was revised in 2013 by TG 052 (formerly WG T-11-3a), "Fusion-Bonded Epoxy Coating of Steel Reinforcing Bars." TG 052 is administered by Specific Technology Group (STG) 01, "Reinforced Concrete," and is sponsored by STG 46, "Building Systems", which merged in 2013 with STG 11, "Water and Water Treatment Systems." This standard is published by NACE under the auspices of STG 01.

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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Contents

1. General.....	1
2. Definitions.....	1
3. Ordering Information	1
4. Materials.....	2
5. Coating Application	3
6. Surface Preparation	3
7. Fusion-Bonded Epoxy Powder Application	4
8. Coated Bar Requirements.....	4
9. Number of Tests.....	6
10. Retests	6
11. Permissible Coating Damage and Repair of Damaged Coating.....	6
12. Handling and Identification	6
13. Inspection	7
14. Rejection.....	7
15. Certification.....	7
16. Coating Repairs Required as a Result of Fabrication of Coated Steel Reinforcing Bars.....	7
17. Coating Repairs Required as a Result of Handling, Transporting, and Installing Coated Steel Reinforcing Bars	8
18. Job Site Practices.....	8
References.....	9
Appendix A: Requirements for Fusion-Bonded Epoxy Powder Coatings and Patching Materials	11
TABLES	
Table 1: Flexibility Test Requirements.....	5

Section 1: General

1.1 This standard defines the requirements for fusion-bonded epoxy (FBE) powder coatings applied by electrostatic spray or other suitable method to deformed and plain steel reinforcing bars that are suitable for fabrication after coating. This standard includes requirements and guidelines for ordering, cleaning, coating, inspecting, handling, transporting, and installing the reinforcing bars.

1.2 Requirements for FBE coatings and patching materials are given in Appendix A (mandatory).

1.3 The coating applicator is identified throughout this standard as the manufacturer.

Section 2: Definitions

The definitions of many of the corrosion-related terms used in this standard can be found in NACE/ASTM⁽¹⁾ G193.¹ Other terms not included therein that have been used in this standard are defined as follows:

2.1 **Chemical Surface Treatment:** A preparation of the blast-cleaned steel surface before coating application that is designed to pretreat the metal, promote coating adhesion, improve corrosion resistance, and increase blister resistance.

2.2 **Damage:** A discontinuity in a protective coating that is visible to normal or corrected vision that exposes the steel surface to the environment.

2.3 **Fusion-Bonded Epoxy Coating (FBE):** A protective coating containing pigments, thermosetting epoxy resins, cross linking agents, and other additives that is applied in the form of a dry powder onto a clean, heated metallic substrate maintained at a sufficient temperature to cause the dry powder to fuse into a continuous barrier coating.

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

2.5 **Patching Material:** A two-part epoxy coating formulated to be compatible with and used to repair damaged or uncoated areas of the FBE coating.

2.6 **Purchaser:** An individual or company that is responsible for providing the product order requirements.

2.7 **Wetting Agent:** An additive that lowers the surface tension of water, thereby allowing the water to penetrate more effectively into small discontinuities in the coating and facilitate more accurate detection of holidays.

Section 3: Ordering Information

3.1 The purchaser shall specify:

3.1.1 Reinforcing bar specification and grade (see Paragraph 4.1);

3.1.2 Quantity of bars;

3.1.3 Size and length of bars;

3.1.4 Requirements for certification (see Sections 5 and 15);

3.1.5 Requirements for patching material (see Paragraph 4.3);

⁽¹⁾ ASTM International (ASTM), 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.