



Standard Practice for Conducting a Patch Test to Assess Coating Compatibility¹

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1. Scope

1.1 This practice covers the procedures for testing coating compatibility when maintenance of an in-place coating system is being contemplated. It does not cover procedures for assessing the integrity of the existing coating to determine if it can be repainted, nor does it establish the compatibility of the maintenance coating system with the substrate or corrosion products. The practice is intended for use in the field.

NOTE 1—Pass-Fail Criteria (for example, adhesion requirements) are not established by this practice. These should be established by the user or specifier with input from the supplier.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- D 1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base²
- D 1400 Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base²
- D 3359 Test Methods for Measuring Adhesion by Tape Test²
- D 4138 Test Method for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means³
- D 4414 Practice for Measurement of Wet Film Thickness by Notch Gages²
- D 4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers³

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to the Federation of Societies for Coatings Technology (FSCT) *Paint/Coatings Dictionary*.⁴

4. Summary of Test Method

4.1 The materials under test are applied to the previously painted surface after proper surface preparation. After the appropriate time has elapsed, the test patch is examined for visual defects and adhesion is determined.

5. Significance and Use

5.1 In performing maintenance of a coating system, the new coating being applied must be compatible with the existing coating. While general guides exist which indicate compatibility of different generic types of coatings, differences in manufacturer's formulation and the condition of the in-place coating will affect compatibility.

6. Procedure

6.1 Select test locations for evaluation that properly characterize differences in configuration of the structure and exposure; that is, vertical versus horizontal surfaces and sheltered versus unsheltered exposure. A minimum of three test locations with one test patch in each is recommended.

6.2 The size of each test patch will be determined by the size and configuration of the test locations. Each test patch shall be as large as possible, with a minimum size of 10 ft² (0.93 m²) recommended.

6.3 Clean the surface of the test areas using the methods specified for the maintenance painting procedure (Note 2). Alternative methods of preparation may also be evaluated in separate, adjacent tests.

NOTE 2—This test method assesses compatibility with the existing coating only and does not apply to areas where the substrate is exposed by the methods of preparation.

6.4 Measure the existing coating thickness in accordance with Test Methods D 1186, D 1400, or D 4138, as appropriate for the substrate.

6.5 Measure the ambient conditions and surface temperature and assure the conditions are within the limits specified by the coatings manufacturer for the product being tested.

¹ This practice is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.46 on Industrial Protective Coatings.

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² *Annual Book of ASTM Standards*, Vol 06.01.

³ *Annual Book of ASTM Standards*, Vol 06.02.

⁴ *Paint/Coatings Dictionary*, Federation of Societies for Coatings Technology, Philadelphia, PA, 1978.