



Designation: D 5065 – 01

## Standard Guide for Assessing the Condition of Aged Coatings on Steel Surfaces<sup>1</sup>

This standard is issued under the fixed designation D 5065; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This guide describes general procedures for conducting a detailed assessment of the condition of aged coatings on steel structures and the extent of rust breakthrough of the coated surface. Additional assessment may be required to support coating failure analyses or other job specific needs.

1.2 This guide does not address the problem of determining the structural condition of a steel substrate. It provides procedures to determine the percent of the surface rusted, but not the severity, condition, or cause of such rusting.

NOTE 1—A more comprehensive condition assessment procedure, Practice F 1133, based upon two sets of visual standards, one for level and one for extent of deterioration, has been developed for determining the condition of coatings on ship hulls.

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:* <http://www.astm.org/catalog/standards/sist/7805119>
- D 610 Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces<sup>2</sup>
  - D 660 Test Method for Evaluating Degree of Checking of Exterior Paints<sup>3</sup>
  - D 714 Test Method for Evaluating Degree of Blistering of Paints<sup>3</sup>
  - D 1186 Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base<sup>3</sup>
  - D 3359 Test Methods for Measuring Adhesion by Tape Test<sup>3</sup>

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee D01 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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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.02.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 06.01.

- D 4214 Test Methods for Evaluating Degree of Chalking of Exterior Paint Films<sup>3</sup>
- D 4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers<sup>2</sup>
- D 5702 Practice for Field Sampling of Coating Films for Analysis of Heavy Metals<sup>2</sup>
- D 6206 Practice for Sampling of Coating Films<sup>2</sup>
- F 1133 Practice for Inspecting the Coating System of a Ship's Underwater Hull and Boottop During Drydocking<sup>4</sup>
- 2.2 *Steel Structures Painting Council Standard:*<sup>5</sup>
  - SSPC-PA-2 Measurement of Dry Paint Thickness with Magnetic Gages

### 3. Summary of Practice

3.1 This practice for assessing the condition of coatings consists of identifying general types of components of a structure and assessing each separately for commonly occurring modes of coating deterioration and rust breakthrough of the coating using visual standards and simple evaluation tools. A form for recording the results of the assessment procedure (Fig. 1) is provided.

### 4. Significance and Use

4.1 Assessment of the condition of aged coated surfaces strengthens decisions on when coating maintenance is required, aids in the selection of effective coating maintenance procedures, and provides a means to characterize performance of coating systems.

### 5. Procedure

5.1 Survey the structure to (1) determine the general types of unique components (for example, for fuel tanks the components may be shell, roof, ladders, and piping) and the service exposure environment for each, (2) visually identify areas having a typical level of coating deterioration and rust breakthrough for each component and (3) identify areas having a much greater visual level of deterioration than typical and

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 01.07.

<sup>5</sup> Available from SSPC: The Society for Protective Coatings, 40 24th St., Sixth Floor, Pittsburgh, PA 15222-4643, (www.sspc.org)