



Standard Practice for Inspecting the Coating System of a Ship¹

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1. Scope

1.1 This practice describes a standard procedure for inspecting the coating system of a ship's topside and superstructure, tanks and voids, decks and deck machinery, and underwater hull and boottop during drydocking. Included are a standard inspection form to be used for reporting the inspection data, a diagram that divides topside and superstructure individual inspection areas, and a series of diagrams that are used to report the extent of damage to the coating system.

1.2 This practice is intended for use only by an experienced marine coating inspector.

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

1.4 *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 660 Test Method for Evaluating Degree of Checking of Exterior Paints²

D 714 Method for Evaluating Degree of Blistering of Paints²

D 772 Test Method for Evaluating Degree of Flaking (Scaling) of Exterior Paints²

2.2 Steel Structures Painting Council:

SSPC-PA-2 Measurement of Dry Paint Thickness With Magnetic Gages³

3. Significance and Use

3.1 This practice establishes the procedure for the inspection of coating systems on board ships. It contains a series of diagrams to be used to report the extent of damage to coatings.

4. Reference Standards

4.1 *Extent of Failure*—The overall extent of failure diagrams (see Fig. 1) and the extent within affected area diagrams (see Fig. 2 and Fig. 3) are used to report the area covered by various fouling organisms, different types of corrosion, and paint failures. The overall extent of failure diagrams are used first to group all areas where a particular type of damage has occurred into one contiguous block. The extent within affected area diagrams are then used to identify the pattern of damage within that contiguous block. (For example, inspection for Section I.A.—General Corrosion (see Figs. 4-7)) and general corrosion appears distributed over the entire inspection area as shown by the black areas in Fig. 8.)

4.1.1 The first step is to draw an imaginary line that would enclose all of the general corrosion. This enclosure should be as small as possible. Select the diagram from the overall extent of failure diagrams that most closely approximates the enclosed area with respect to the entire inspection area. Using the general corrosion example, the enclosed area (shaded area) would closely match Fig. 9.

4.1.2 Enter a "6" (for Diagram 6 in Fig. 1) in the box next to I.A.1. overall extent of failures in Fig. 4.

4.1.3 The second step is to look at only the enclosed area and select the diagram from the extent within affected-area diagrams that most closely identifies the pattern of general corrosion in the enclosed area. In this example, Fig. 10 (Diagram N) would be a good choice.

4.1.4 Enter an "N" (for Diagram N in Fig. 3) in the box next to I.A.1.A. extent within the affected area.

NOTE 1—Selection of diagrams is based on visual comparisons, and therefore, different inspectors may select different diagrams. The diagrams are designed to minimize these differences and enhance reproducibility.

4.2 *Forms of Mechanical Damage*—This reference standard (Fig. 11) is a series of photographs used to identify the various forms of mechanical damage to a coating that can lead to corrosion.

4.3 *Types of Corrosion*—This reference standard (Fig. 12) is a series of photographs used to show examples of general coating damage. Included could be general corrosion, pitting corrosion, pin-point corrosion, galvanic corrosion/coating undercutting, cavitation corrosion, corrosion along welds, and rust staining.

¹ This practice is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.01 on Structures.

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

³ Available from Steel Structures Painting Council, 40 24th St., Pittsburgh, PA 15222-4656.