



Designation: D662 – 93 (Reapproved 2019)

Standard Test Method for Evaluating Degree of Erosion of Exterior Paints¹

This standard is issued under the fixed designation D662; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This test method covers the evaluation of the degree of erosion of exterior paints by comparison with photographic standards.

1.2 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D4214 Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films

2.2 *Other Standards:*

Pictorial Standards of Coating Defects Handbook³

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *erosion, n*—that phenomenon manifested in paint films by the wearing away of the finish to expose the substrate or undercoat.

3.1.1.1 *Discussion*—The degree of failure is dependent on the amount of substrate or undercoat visible. Erosion occurs as the result of chalking. (See Test Methods **D4214** for evaluation of chalking.)

¹ This test method is under the jurisdiction of ASTM Committee **D01** on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee **D01.25** on Evaluation of Weathering Effects.

Current edition approved Oct. 1, 2019. Published October 2019. Originally approved in 1942. Last previous edition approved in 2011 as D662 – 93 (2011). DOI: 10.1520/D0662-93R19.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Copies of the pictorial photographic reference standards are contained in the publication *Pictorial Standards of Coatings Defects* and may be obtained from the Federation of Societies for Coatings Technology, 492 Norristown Rd., Blue Bell, PA 19422. The silver halide-gelatin photographs are intended to be the only primary reference standards for this method. The reproductions of them in this test method are for the purpose of illustration only.

4. Significance and Use

4.1 Erosion failure of paint films can occur in use. This test method provides a mean of evaluating the degree of failure by comparing to pictorial standards.

5. Types of Erosion

5.1 Only one type of erosion is recognized, as defined in Section 3.

6. Use of Photographic Reference Standards

6.1 The photographic reference standards that are part of this test method and are provided in the *Pictorial Standards of Coating Defects Handbook* are representative of the degree of erosion of exterior paint films. **Fig. 1** is for illustration purposes only and should not be used for evaluation.

6.2 The use of the photographic reference standards³ illustrated in **Fig. 1** requires the following precautions:

6.2.1 Care must be taken not to confuse various types of failure that may be present on the same surface.

6.2.2 It must be realized that the degree of failure will vary over any given area. Therefore, an average portion of the film should be used for comparison. On larger surfaces it is recommended that ratings be made at several locations and the mean and range reported.

6.2.3 The photographic standards used represent various degrees of erosion of a white brushing type paint over a dark primer. This system was necessary to provide sufficient contrast for photographic purposes. The erosion of a film to its normal substrate is, however, readily visible to the naked eye so it may easily be compared to the standards and given a numerical rating.

6.2.4 In doubtful cases, erosion is sometimes more visible in a damp film than in a dry film. Also, with severe erosion, it is often easier to rate the degree of erosion in a damp film than in a dry film.

6.2.5 While erosion of a sprayed film is more regular in its wearing away, a numerical rating can be given to it by interpreting the amount of erosion in terms of these standards.

6.3 For convenience in recording the data obtained, the records should be kept on forms agreed upon between the purchaser and the seller.