



# Standard Test Method for Evaluating Degree of Erosion of Exterior Paints<sup>1</sup>

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*This standard has been approved for use by agencies of the 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.

## 2. Referenced Documents

### 2.1 ASTM Standards:

D 4214 Method for Evaluating Degree of Chalking of Exterior Paint Film<sup>2</sup>

### 2.2 Other Standards:

*Pictorial Standards of Coating Defects Handbook*<sup>3</sup>

## 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. The degree of failure is dependent on the amount of substrate or undercoat visible. Erosion occurs as the result of chalking. (See Method D 4214 for evaluation of chalking.)

## 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.

<sup>1</sup> 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 Pictorial Standards of Coating Defects.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 06.01.

<sup>3</sup> 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.

## 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 standards<sup>3</sup> 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.

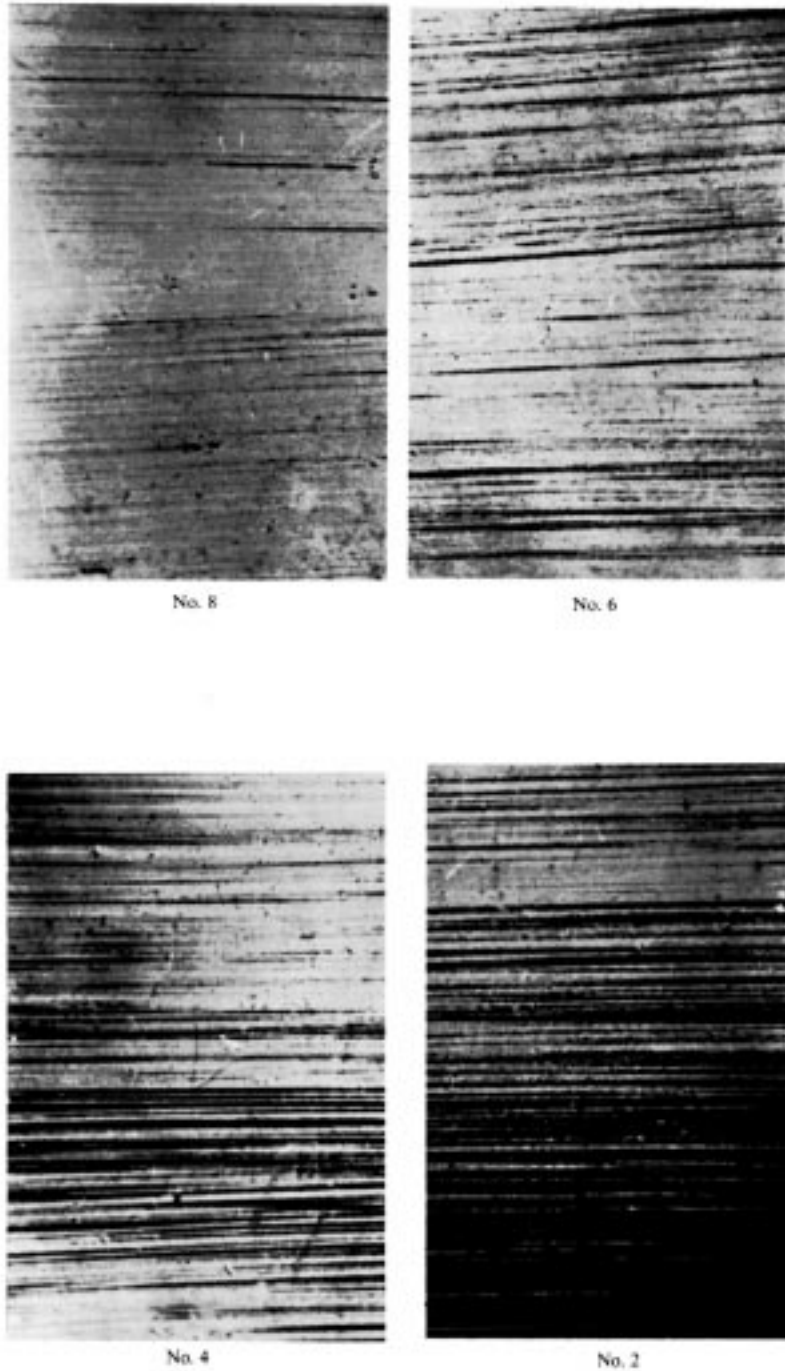
6.3 For convenience in recording the data obtained, the records should be kept on forms agreed upon between the purchaser and the seller.

## 7. Precision and Bias

7.1 No precision or bias statement has been established for this test method.

## 8. Keywords

8.1 erosion; evaluation; reference standards



**FIG. 1 Degrees of Erosion**

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