



Designation: D772 – 18

# Standard Test Method for Evaluating Degree of Flaking (Scaling) of Exterior Paints<sup>1</sup>

This standard is issued under the fixed designation D772; 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.

*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 flaking (scaling) of exterior paints by comparison with photographic standards.

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

1.3 This test method is similar though not identical to ISO 4628 Part 5. ISO 4628 Part 5 uses a 0 to 5 rating scale, where a rating of 0 is no change and a rating of 5 is most severe. Test Method D772 uses a 10 to 0 rating scale, where a rating of 10 is no change and a rating of 0 is most severe. The two standards use different pictorial reference photographs for determining the rating values.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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 Other Standards:<sup>2</sup>

[ISO 4628 Part 5—Paints and Varnishes—Evaluating the Degradation of Coatings—Designation of Quantity and Size of Defects, and of Intensity of Uniform Changes in Appearance—Part 5: Assessment of Degree of Flaking](#)

<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 Evaluation of Weathering Effects.

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<sup>2</sup> Available from U.S. National Committee of the CIE (International Commission on Illumination), C/o Alan Laird Lewis, 282 E. Riding, Carlisle, MA 01741, <http://www.cie-usnc.org>.

## 3. Terminology

### 3.1 Definitions of Terms Specific to This Standard:

3.1.1 *flaking, n*—that phenomenon manifested in paint films by the actual detachment of pieces of the film itself either from its substrate or from paint previously applied. In this standard, the terms flaking and scaling are considered synonymous. Refer to 6.2.3.

3.1.1.1 *Discussion*—Flaking is generally preceded by cracking or checking or blistering, and is the result of loss of adhesion, usually due to stress-strain factors coming into play.

## 4. Significance and Use

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

## 5. Type of Flaking

5.1 Only one type of flaking 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 are representative of the degree of flaking of exterior paint films.

6.2 The use of the photographic reference standards illustrated in Figs. 1-4 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 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 In technical literature, a distinction is sometimes made between flaking and scaling. In most cases, however, flaking and scaling refer to the same phenomenon. In some instances, the term flaking is used to describe the detachment of pieces of film less than 6.4 mm (¼ in.) in size, and scaling, the detachment of pieces over 6.4 mm (¼ in.) in size. In other instances, the term flaking is used to describe the detachment of pieces of film from the immediate undercoat (intercoat failure) and scaling the detachment of pieces from the base

\*A Summary of Changes section appears at the end of this standard

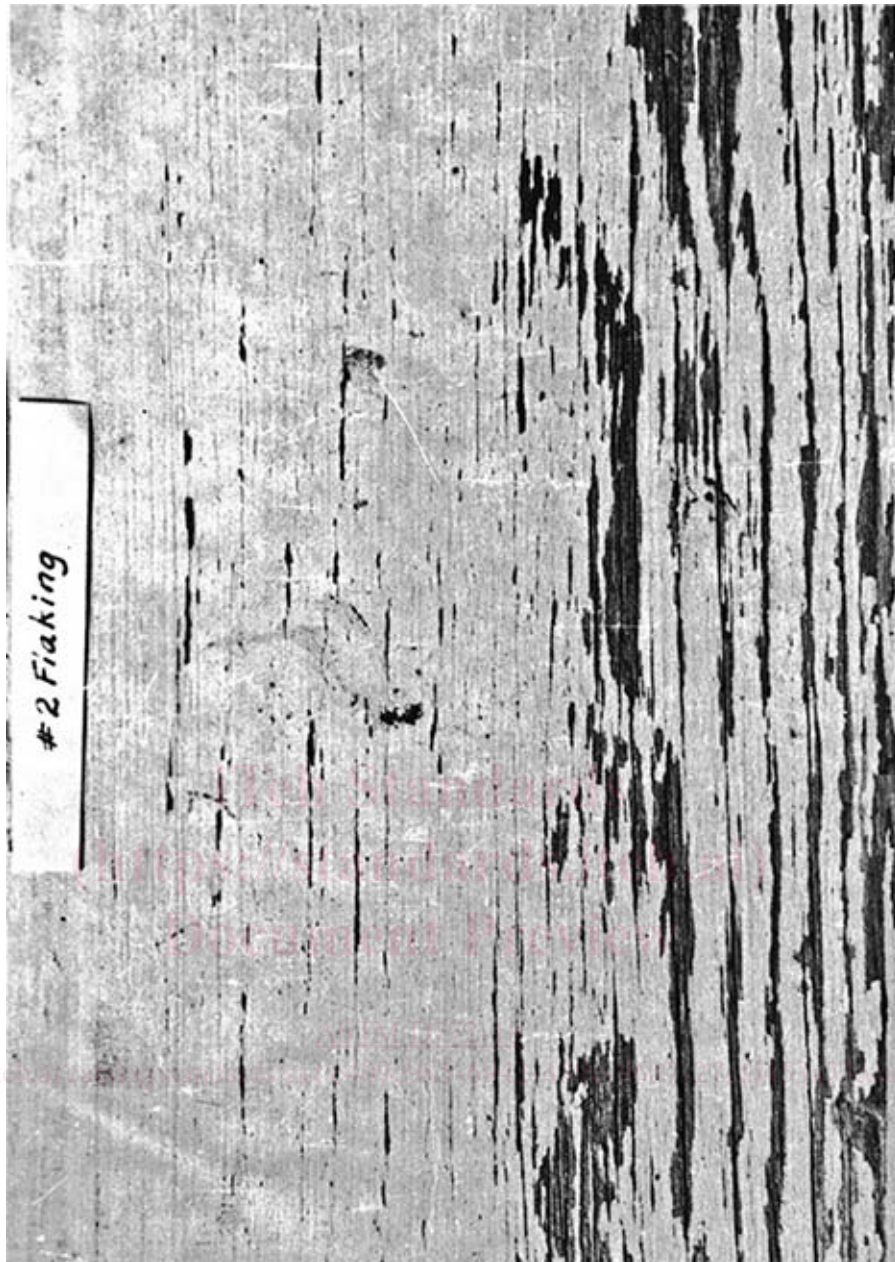


FIG. 1 #2 Rating for Flaking

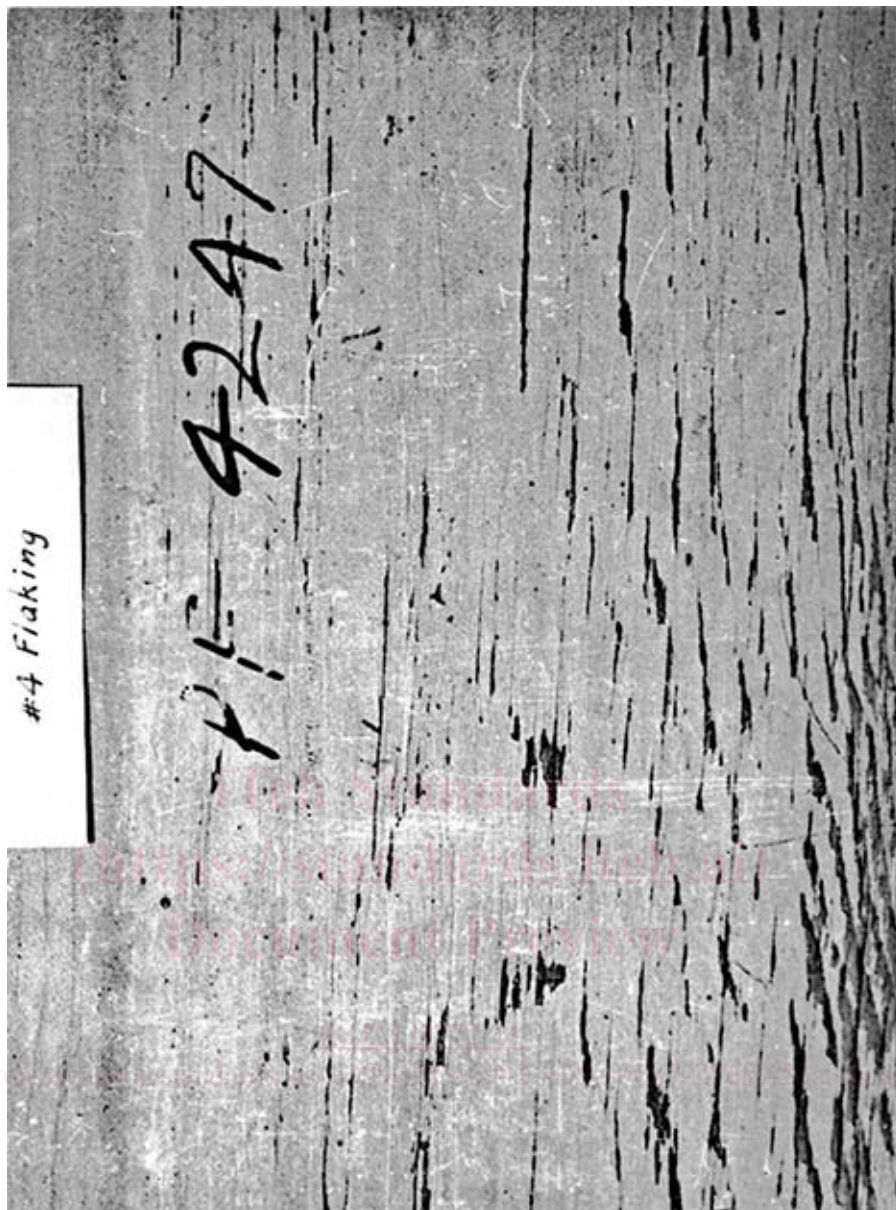


FIG. 2 #4 Rating for Flaking