



# Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces<sup>1</sup>

This standard is issued under the fixed designation F 386; 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 Department of Defense.*

## 1. Scope

1.1 This test method covers the determination of thickness of resilient nontextile floor coverings including tile and sheet having flat surfaces. This test method should not be used on materials having a foamed layer.

1.2 *This standard does not purport to address all of the safety problems, 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. Significance and Use

2.1 Measurement of the thickness of the product may be required to identify different grades of the same product or to differentiate among different products.

## 3. Apparatus

3.1 The apparatus shall consist of a comparator stand having a flat anvil base at least 6 in. (15 cm) square, equipped with a dial micrometer graduated to 0.001 in. (0.02 mm), and a flat presser foot  $0.250 \pm 0.01$  in. ( $6.35 \pm 0.5$  mm) in diameter. The foot shall exert a force of  $16 \pm 0.1$  ozf ( $4.45 \pm 0.03$  N) by means of a weight.

3.1.1 The contact surfaces of the anvil and the presser foot shall be parallel to within 0.0001 in. (0.003 mm).

3.1.2 Before placing the micrometer into operation, the surfaces shall be cleaned so the gage zeros properly.

## 4. Test Specimens

4.1 The test specimen shall be a minimum of one tile [9 by 9 in. (230 by 230 mm) or 12 by 12 in. (300 by 300 mm)] or a 12 by 12-in. (300 by 300-mm) piece of sheet flooring cut from a roll.

## 5. Calibration

5.1 The calibration of the gage shall be verified by means of

gage blocks or shim stock of known thickness appropriate to the thickness being measured.

## 6. Conditioning

6.1 Condition the test specimen at least 24 h at  $73.4 \pm 3.6^\circ\text{F}$  ( $23 \pm 2^\circ\text{C}$ ) and  $50 \pm 5\%$  relative humidity and test in the same environment.

## 7. Procedure

7.1 Place the specimen on the anvil of the dial micrometer, taking care that the specimen is flat against the anvil of the micrometer with the wearing surface upward. Lower the presser foot gently until it contacts the surface of the specimen. Upon contact with the surface, make a reading to the nearest 0.001 in. (0.02 mm) from the dial. Make all measurements at least 0.75 in. (19 mm) from any edge of the specimen.

7.2 Unless otherwise specified in the detail specification, make a total of five measurements on each specimen, at randomly selected locations.

## 8. Report

8.1 The thickness of the test specimen shall be the average, calculated to the nearest 0.001 in. (0.02 mm), of all the values obtained in 7.1.

8.1.1 If required by the detail specification, report the minimum or maximum thickness, or both as obtained in 7.1.

## 9. Precision and Bias

9.1 Based on a limited study the repeatability standard deviation for 5 tests on a specimen by one operator with one instrument is  $S = 1.18$  mils (0.030 mm). The repeatability standard deviation between laboratories is  $S = 1.68$  mils (0.043 mm). These values apply to thicknesses between 0.060 in. (1.5 mm) and 0.125 in. (3 mm). The study did not reveal any bias in the measurements.

## 10. Keywords

10.1 flat surfaces; resilient flooring materials; thickness

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee F-6 on Resilient Floor Coverings and is the direct responsibility of Subcommittee F06.20 on Specialty Resilient Flooring for Human Fatigue and Injury Reduction.

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