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AMERICAN SOCIETY FOR TESTING AND MATERIALS  
100 Barr Harbor Dr., West Conshohocken, PA 19428  
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## Standard Test Method for Thickness of Pressure-Sensitive and Gummed Tapes

This standard is issued under the fixed designation D 3652/D 3652M; 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 specification has been approved for use by agencies of the Department of Defense.*

### 1. Scope

1.1 This test method covers the determination of the thickness of pressure-sensitive and gummed tapes at standard conditions.

1.2 The values stated in either SI or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system must be used independently, without combining values in any way.

1.3 *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.<sup>1</sup>*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- D 996 Terminology of Packaging and Distribution Environments<sup>2</sup>
- D 2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data<sup>3</sup>
- D 2906 Practice for Statements on Precision and Bias for Textiles<sup>3</sup>
- D 3715/D 3715M Practice for Quality Assurance of Pressure-Sensitive Tapes<sup>2</sup>
- D 4332 Practice for Conditioning Containers, Packages, or Packing Components for Testing<sup>2</sup>
- E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process<sup>4</sup>

### 3. Terminology

3.1 *Definitions*—Terms found in Terminology D 996 shall apply.

#### 3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *thickness (caliper, gage)*—the perpendicular distance

between opposite surfaces of a tape, expressed in mils, (1/1000 in.); usually measured under slight pressure with a special gage.

### 4. Significance and Use

4.1 Thickness is an important property of tapes, and this dimension is important for certain end uses. The test is useful for quality control and for acceptance testing for conformance to specifications.

### 5. Apparatus

5.1 *Micrometer*, with the following requirements:

5.1.1 Two plain faces, the smaller of which is circular and 160 to 215 mm<sup>2</sup> [0.25 to 0.33 in.<sup>2</sup>] in area, corresponding to a diameter of 14 to 16.5 mm [0.56 to 0.65 in.]. The faces shall be parallel to within 0.005 mm [0.0002 in.] and constrained to move apart along an axis perpendicular to them.

5.1.2 When the specimen is clamped between the faces, it shall be under a steady pressure of 48 to 62 kPa [7.0 to 9.0 psi].

5.1.3 The distance between the graduations on the dial shall be such as to permit estimating the thickness to at least [0.0025 mm] 0.0001 in.

### 6. Sampling

6.1 *Acceptance Sampling*—Sampling shall be in accordance with Practice D 3715.

6.2 *Sampling for Other Purposes*—The sampling and the number of test specimens depends on the purpose of testing. Practice E 122 is recommended. It is common to test at least five specimens of a particular tape. Test specimens should be taken from several rolls of a tape and, whenever possible, among several production runs of a tape. Strong conclusions about a specific property of a tape cannot be based on tests of a single unit (roll) of product.

### 7. Test Specimens

7.1 The specimen shall be a minimum of 12 mm [ $\frac{1}{2}$  in.] wide. The length shall be approximately 300 mm [12 in.]. It shall be free of wrinkles and creases.

7.2 Unwind and discard at least three but no more than six outer wraps of tape from the sample roll before taking specimens for testing.

7.3 Unless otherwise specified, remove one specimen per sample roll for each test to be performed. Remove the

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D-10 on Packaging and is the direct responsibility of Subcommittee D10.14 on Tape and Labels.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 15.09.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 07.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 14.02.