



Standard Test Method for Dispensability of Light-Duty Pressure-Sensitive Film Tape¹

This standard is issued under the fixed designation D6295/D6295M; 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.

1. Scope

1.1 This test method covers the measurement of the force and elongation required to dispense pressure-sensitive film tape on a 1-in. core intended for office and stationery applications from a desk-top dispenser.

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 are not exact equivalents; therefore, each system must be used independently of the other.

1.3 *This standard does not propose 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.*

2. Referenced Documents

2.1 ASTM Standards:²

D996 Terminology of Packaging and Distribution Environments

D3715/D3715M Practice for Quality Assurance of Pressure-Sensitive Tapes

D4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing

E122 Practice for Calculating Sample Size to Estimate, With Specified Precision, the Average for a Characteristic of a Lot or Process

2.2 Commercial Item Description (CID):

A-A-113 Tape, Pressure-Sensitive Adhesive³

3. Terminology

3.1 **Definitions**—Terminology found in Terminology **D996** shall apply.

¹ This test method is under the jurisdiction of ASTM Committee **D10** on Packaging and is the direct responsibility of Subcommittee **D10.14** on Tape and Labels.

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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 Available from General Services Administration, Federal Supply Service Specifications Section (3FP-E), Suite 8100, 470 East L'Enfant Plaza, SW, Washington, DC 20407.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 **dispensability**—the initial force and elongation required to sever or cut off a strip of pressure-sensitive film tape from a roll using specific test conditions and specific blade described in this test method.

4. Significance and Use

4.1 Pressure-sensitive film tapes are supplied in roll form. For such a tape to be useful a strip of the tape must be easily dispensed or severed from the roll by means of a cutter found on most dispensers. This test method is a means of measuring the ease of this severing or dispensing of the tape.

4.2 This test method provides information that can be used in material specifications for product design and quality assurance applications. It can be used in comparing different tape products on specific dispensing blades.

4.3 This test method may be suited for office and stationery and tapes with acetate, cellophane, or light-duty plastic backings. Some tapes may be shown to be difficult to dispense under these conditions yet are readily dispensable with other dispensing systems.

NOTE 1—Backings described in CID A-A-113 are typical backings.

5. Apparatus

5.1 **Tension Tester**—A constant-rate-of-extension (CRE) type with load cell capacity such that the maximum expected dispensing force does not exceed 90 % of its normal limit. A means of moving the stressing clamp at a uniform rate of 250 mm/min or 10 in./min. Test information should be displayed graphically with a sampling rate of at least 100 data points per second.

5.2 **Blade**—Manufactured in accordance with information given in **Fig. 1**.

NOTE 2—The blade used in models C-15, C-38, C-40, and C-41 dispensers⁴ meets these requirements. This blade has been found to be suitable for this testing.

5.3 **Blade Support Fixture**—The test fixture, as shown in **Figs. 2 and 3**, shall have a means of rigidly mounting the blade

⁴ Available from Chemsultants International, 9349 Hamilton Dr., Mentor, OH 44061-1118.

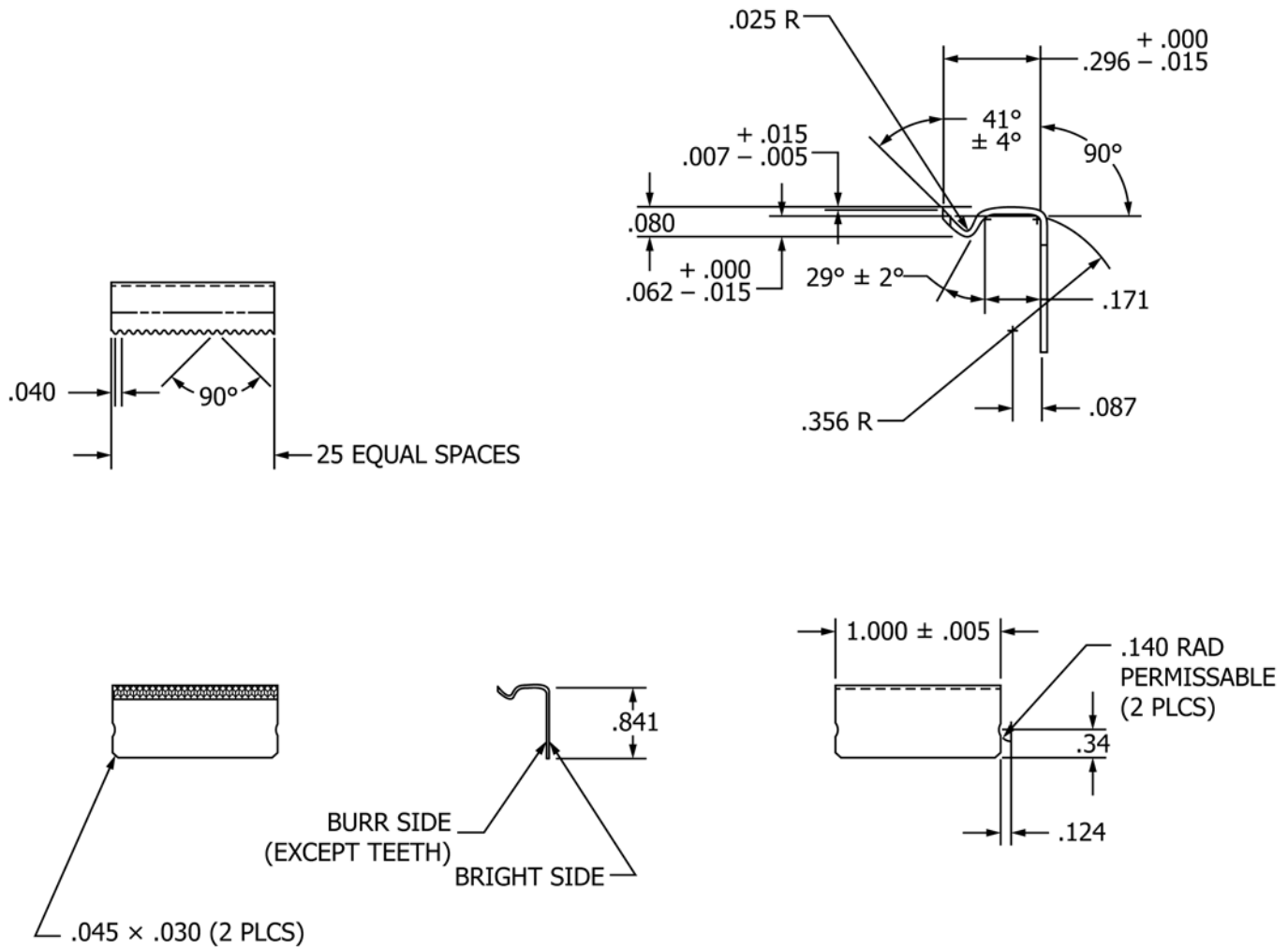


FIG. 1 Blade

in the tensile tester so that the land portion faces at 30° down from the vertical and rotates the blade 10° from the horizontal.

5.4 Blade Change—In the normal course of events the blade should be changed at least every 1000 uses or when there is evidence of damage or wear. A new blade should be used for referee testing.

6. Sampling

6.1 Acceptance Sampling—Acceptance sampling shall be in accordance with Practice D3715/D3715M.

6.2 Sampling for Other Purposes—The sampling and the number of test specimens depends on the purpose of the testing. Practice E122 is recommended. It is common to test at least five rolls of a particular tape, and wherever possible, among several production runs of tape. Strong conclusions about a specific property of a tape cannot be based on test of a single roll of product.

7. Test Specimen

7.1 The specimens shall be 18 mm or $\frac{3}{4}$ in. wide. A tolerance of ± 0.8 mm or $\frac{1}{32}$ in. shall be allowed. The length shall be approximately 150 mm or 6 in.

7.2 Discard at least three but not more than six outer wraps of tape from the sample roll before taking the specimen for testing. Take at least 10 specimens per roll.

8. Conditioning

8.1 Condition the sample rolls of tape in the standard conditioning atmosphere as described in Practice D4332 for a period of not less than 24 h. Test at these conditions.

9. Procedure

9.1 Mount the fixture containing the dispenser blade in the lower jaw of the tensile tester so that the plane of the land is 30° from the vertical with the row of teeth uppermost, facing the operator and at 10° from the horizontal. The distance between the teeth of the blade and the upper jaw shall be 50 mm or 2 in. measured from the tape edge which will first be punctured by the dispenser blade teeth. The combination of the rate of movement of the jaw and the jaw separation from the dispensing teeth provides a strain rate of 500 %/min.

9.2 Fold over end of tape specimen (see 7.1) 12 mm or $\frac{1}{2}$ in. to form a tab and place in jaw.

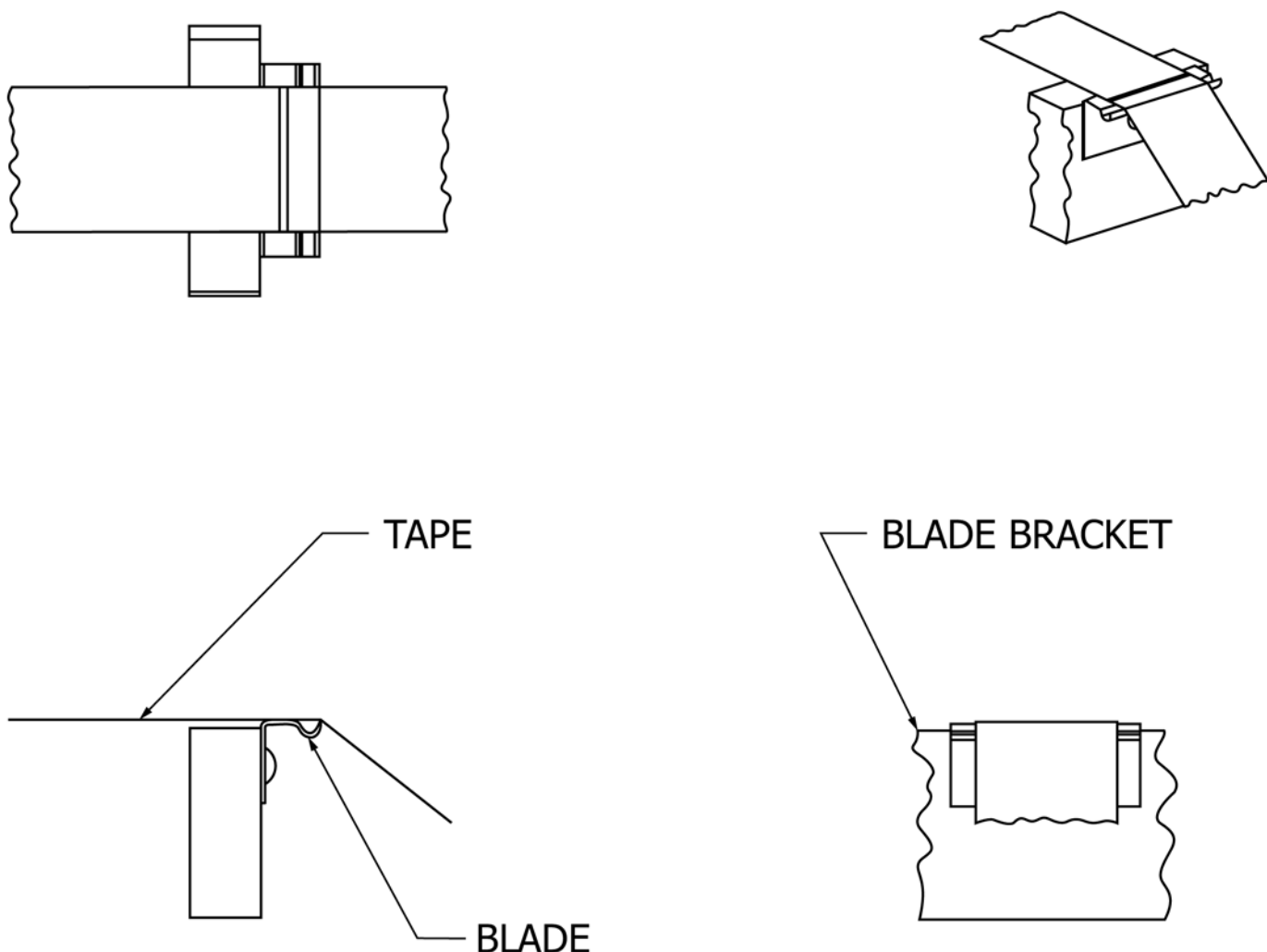


FIG. 2 Tape and Blade

9.3 Place this tab in the upper jaw of the tester making sure that it is aligned such that the edge of the specimen is parallel to the movement of the stressing jaw. Firmly adhere the adhesive side of the lower portion of the specimen to the land of the blade, over the teeth of the blade with very slight tension on the tape specimen. Take care that the teeth do not penetrate the tape.

9.4 Operate the stressing jaw at 250 mm/min. or 10 in./min. until the blade has severed the specimen.

9.5 Run ten measurements per roll.

10. Calculation

10.1 From the graph determine the highest dispensing force. This is normally the initial puncture force.

10.2 The stretch at dispensing is determined from the graph. The time between the initial increase in force and the maximum force obtained in 10.1 is recorded. This time (in minutes) is then multiplied by the strain rate of 500 %/min. to give the percent stretch.

10.3 Calculate the average of each roll and use this as one test determination.

11. Report

11.1 The report shall include the following:

11.1.1 Statement that this test method was used and indicating any deviations from the test method as written.

11.1.2 Complete identification of each roll of tape tested, including source, manufacturer's code number, and form.

11.1.3 Anomalous behavior during the test (that is, splitting of backing, dispensing not at blade, etc.)

11.1.4 Report the dispensing force in newtons or pounds-force to two significant places.

12. Precision and Bias

12.1 *Precision*—Based on data provided by one laboratory, the typical repeatability standard deviation for the peak force is about 0.45 N (0.1 lb); the typical repeatability standard deviation for the elongation is about 1.8 percentage points. The actual standard deviation will also depend on the specific tape tested. The between laboratory reproducibility of this method is being determined.

12.2 *Bias*—No information can be presented on the bias of the procedure in this test method because no accepted reference value is available.

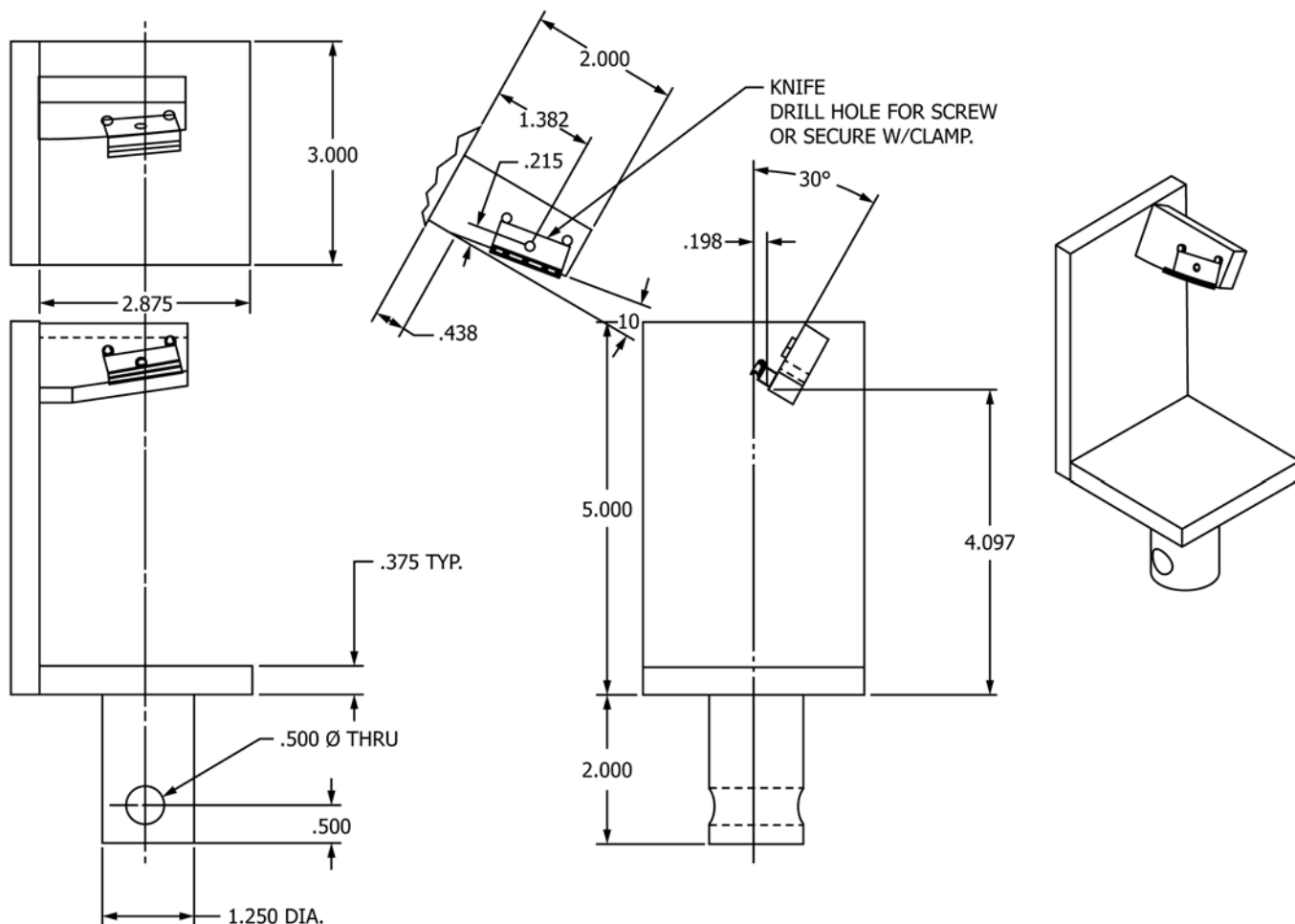


FIG. 3 Blade Support Fixture

13. Keywords

13.1 dispensability; pressure-sensitive; tape

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