



AMERICAN NATIONAL
STANDARD

ANSI/ASTM D 3653 - 78

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Standard Test Method for HOLDING POWER OF LINEAL AND MULTIDIRECTIONAL FILAMENT-REINFORCED PRESSURE-SENSITIVE TAPES¹

This Standard is issued under the fixed designation D 3653; 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.

1. Scope

1.1 This method provides a procedure to determine the shear strength of filament-reinforced (lineal and multidirectional) pressure-sensitive tapes under constant shear force. It may also be used to measure the displacement or slippage of such tapes under standard shear load in a given or specified time period.

2. Applicable Documents

2.1 *ASTM Standard:*

A 666 Specification for Austenitic Stainless Steel, Sheet, Strip, Plate, and Flat Bar for Structural Applications²

2.2 *Fed. Test Method:*³

Fed. Test Method Std. No. 147 Tapes, Packaging, Adhesive and Gummed: Methods of Inspection, Sampling and Testing

3. Summary of Method

3.1 A standard-size tape specimen is applied to a standard test panel, (or other substrate⁴ of interest), with controlled pressure. The tape is subjected to shear force by use of a specified mass acting parallel to the surfaces of the tape.

4. Significance and Use

4.1 This method is used to determine shear strength under standard conditions, or, with appropriate conditioning equipment, at high or low temperatures.

4.2 This method provides shear strength measurement relative to a standard steel surface, but is suitable with other surfaces and substrates⁵ which may be of interest to the

assessor.

4.3 This method provides a means of evaluating the uniformity of shear strength of a specific type or comparison of types of pressure-sensitive tapes. The assessment may be of uniformity within a roll, between rolls, between production lots, or differences between types.

5. Apparatus and Materials³

5.1 *Cutter, Specimen*⁵—A 1/2-in. (12.7-mm) cutter shall be available to hold two single-edge razor blades in parallel planes, a precise distance apart, to form a cutter of exact specimen width. The cutter shall consist of a 1/2-in. (12.7-mm) thick by 8 in. (203-mm) length of aluminum bar stock 1/2 in. (12.7 mm) wide. The edges, for about 5 in. (127 mm) from one end shall be slightly rounded to form a handle. The width of the bar, for 3 in. (76.2 mm) from the opposite end, shall be narrowed to exactly 0.500 in. (12.7 mm) minus the thickness of a single razor blade

¹ This method is under the jurisdiction of ASTM Committee D-10 on Packaging.

Current edition approved Feb. 24, 1978. Published April 1978.

² *Annual Book of ASTM Standards*, Parts 3, 4, and 5.

³ Available from Naval Publications and Forms Center, 5801 Tabor Ave., Philadelphia, Pa. 19120.

⁴ One frequently used substrate is a standard liner board mounted to the steel test panel with a double-coated tape or adhesive. One such standard liner board is Standard Reference Material 1810, available from the Office of Standard Reference Materials, National Bureau of Standards, Washington, D.C. 20234.

⁵ The Pressure Sensitive Tape Council (PSTC), 1800 Pickwick Ave., Box 66, Glenview, Ill. 60025, is a source for specimen cutters, base panels, and rubber-covered rollers.