



Designation: D3654/D3654M – 06 (Reapproved 2024)

Standard Test Methods for Shear Adhesion of Pressure-Sensitive Tapes¹

This standard is issued under the fixed designation D3654/D3654M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This test method covers procedures for determining the ability of pressure-sensitive tapes and labels to remain adhered under constant load applied parallel to the surface of the tape and substrate.

1.1.1 Procedure A measures the shear adhesion when applied to a vertical standard steel panel.

1.1.2 Procedure B measures the shear adhesion when applied to vertical panel covered with NIST SRM 1810A standard fiberboard.

1.1.3 Procedure C measures the shear adhesion when applied to a vertical panel covered with a fiberboard as defined by Comite Europeen de Normalisation (CEN).

1.1.4 Procedure D measures shear adhesion when applied to a vertical panel covered with a fiberboard agreed upon by the buyer and seller.

1.1.5 Procedure E measures shear adhesion of filament reinforced tape when applied to a horizontal standard steel panel.

1.1.6 Procedure F measures shear adhesion of a filament reinforced tape when applied to a horizontal panel covered with NIST SRM 1810A standard fiberboard.

1.1.7 Procedure G measures the shear adhesion of a filament reinforced tape when applied to a horizontal panel covered with a standard fiberboard defined by CEN.

1.1.8 Procedure H measures the shear adhesion the same as Procedure A except the test is conducted at an elevated temperature and after a 10-min dwell time at the elevated temperature.

1.2 These procedures provide a means of assessing the uniformity of the adhesive of a given type of pressure-sensitive tape, usually tapes used for packaging applications. The assessment may be within a roll of tape, between rolls or production lots.

1.2.1 Variations in the tape backing and adhesive affect the response; therefore, these procedures cannot be used to pinpoint the specific cause(s) of nonuniformity.

1.2.2 This test method is intended to replace AFERA 4012, CEN 1943, and PSTC (see 7.2).

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems will result in non-conformance with the standard.

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 ASTM Standards:²

A666 Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar

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

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

D5750/D5750M Guide for Width and Length of Pressure-Sensitive Tape

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

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 www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.