



Designation: D 3654/D 3654M – 00^{ε1}

Standard Test Methods for Shear Adhesion of Pressure-Sensitive Tapes¹

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ε¹ NOTE—Editorial corrections were made in October 2000.

1. Scope

1.1 This test method describes procedures for determining the ability of pressure-sensitive tapes 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 Comité Européen 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).

2. Referenced Documents

2.1 ASTM Standards:

A 666 Specification for Annealed or Cold-Worked Austenitic Stainless Steel, Sheet, Strip, Plate and Flat Bar²

D 3715/D 3715M Practice for Quality Assurance of Pressure-Sensitive Tapes³

D 5750/D 5750M Guide for Width and Length of Pressure-Sensitive Tape³

E 122 Practice for Choice of Sample Size to Estimate a Measure of Quality for a Lot or Process⁴

2.2 AFERA Standard:

AFERA 4012 Self-Adhesive Tapes—Measurement of Static Shear Adhesion⁵

2.3 CEN Standard:

EN 1943 Self-Adhesive Tapes—Measurement of Static Shear Adhesion⁶

2.4 PSTC Standard:

PSTC-7 Holding Power of Pressure-Sensitive Tapes⁷

3. Summary of Test Method

3.1 *Procedure A, Shear Adhesion to Standard Steel Panel*—A strip of tape is applied to a standard steel panel under controlled roll down. The panel is mounted vertically, a standard mass is attached to the free end of the tape and the time to failure is determined.

3.2 *Procedure B, Shear Adhesion to a Standard (NIST) Fiberboard*—A strip of tape is applied to a panel covered with NIST SRM 1810A fiberboard under controlled roll down. The panel is mounted vertically, a standard mass is attached to the free end of the tape and the time to failure determined.

3.3 *Procedure C, Shear Adhesion to a Standard CEN Fiberboard*—A strip of tape is applied to a panel covered with the CEN standard fiberboard under controlled roll down. The

² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 15.09.

⁴ Annual Book of ASTM Standards, Vol 14.02.

⁵ AFERA (Association des Fabricants Européen de Rubans Auto-Adhésifs), LAM, laan Copes van Cattenburch 79, NL-2858 EW., the Hague, the Netherlands.

⁶ EN (European Norm), available from COMITE Européen de Normalisation, CEN Rue de Stassart, 36, B-1050, Brussels, Belgium.

⁷ PSTC (Pressure Sensitive Tape Council), 400 N. Michigan Ave., No. 2200, Chicago, IL 60611-4267.

¹ This test method is under the jurisdiction of ASTM Committee D-10 on Packaging and is the direct responsibility of Subcommittee D 10.14 on Tapes and Labels.

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