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.

Designation: D3759/D3759M – 05 (Reapproved 2019)

Standard Test Method for Breaking Strength and Elongation of Pressure-Sensitive Tape[1]

This standard is issued under the fixed designation D3759/D3759M; 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 the measurement of tensile strength at break (breaking strength) and stretch properties (elongation) for pressure-sensitive tapes and labels. It includes procedures for machine direction and cross direction, for high-strength filament reinforced backings and for high stretch backings. It also includes a procedure for obtaining force ("F" value) in conjunction with a specified elongation. These procedures employ a constant-rate-of-extension (CRE)-type testing machine.

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; conversions between measurement systems must be conducted carefully.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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]

D828 Test Method for Tensile Properties of Paper and Paperboard Using Constant-Rate-of-Elongation Apparatus

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

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

E4 Practices for Force Verification of Testing Machines

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

2.2 *AFERA Documents (Association Des Fabricants Europeens De Reubans Auto-Adhesifs–Europe:*

AFERA 4004 Self Adhesive Tapes—Measurement of Breaking Strength

AFERA 4005 Self Adhesive Tapes—Measurement of Elongation

2.3 *European Norm (EN) Documents:*

EN 1940 Self Adhesive Tapes—Measurement of Breaking Strength

EN 1941 Self Adhesive Tapes—Measurement of Elongation at Break

2.4 *PSTC Documents (Pressure Sensitive Tape Council):*

PSTC 131 Tensile Strength and Elongation of Pressure-Sensitive Tapes

3. Terminology

3.1 Terminology found in Terminology D996 shall apply.

4. Summary of Test Method

4.1 *Procedure A–Machine Direction for Tapes with Elongation Under 200 %*—A strip of tape is mounted between two clamps aligned in a straight flat plane and force applied at a specified rate until breaking of the strip of tape occurs. Force and elongation are determined at the moment of breakage.

4.2 *Procedure B–Machine Direction for Filament Reinforced Tape*—A strip of tape is applied to two drums aligned in a flat plane and force applied until breakage of tape occurs.

[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.

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