Designation: D3813/D3813M – 98 (Reapproved 2007)

Standard Test Method for Curling, Twisting, and Tubing on Unwind of Pressure-Sensitive Tapes[1]

This standard is issued under the fixed designation D3813/D3813M; 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 Department of Defense.

1. Scope

1.1 This test method provides one procedure for determining the extent of curling, the degree of twisting, and tendency to form a tube resulting from unwinding of the tape from its roll.

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; therefore, each system must be used independently, without combining values in any way.

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 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

3. Terminology

3.1 *Definitions*—General terms used in this test method are defined in Terminology D996.

4. Summary of Test Method

4.1 The sample roll of tape is placed on a free-turning spindle a specified distance above a horizontal plane. A strip of tape is drawn from the roll the distance to the plane at a specified rate and released. Any subsequent curling, twisting, or tubing of the strip is observed and measured.

5. Significance and Use

5.1 This test method will provide information on the relative tendency of tapes to curl, twist, or form into a tube with touching edges. The amount of each is a predictor of the difficulty one might experience in handling strips of tape of any length during their application.

5.2 There are several causes for variation in the extent or degree of these characteristics and may vary themselves within a production lot of tape. Therefore, it is essential to use an accepted sampling plan (see Section 7) when it is desired to use this test method to compare two types of tape for acceptance sampling purposes.

6. Apparatus

6.1 *Free-Turning Spindle,*[3] sized to fit snugly inside the sample tape core, with its axis firmly supported horizontally and adjustable in height directly above a horizontal platform. There should be no obstructions in the path between the platform and the spindle.

NOTE 1—The horizontal platform can be a bench top or the floor.

7. Sampling

7.1 *Acceptance Sampling*—Sampling shall be in accordance with Practice D3715/D3715M.

7.2 *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 specimens of a particular tape. Test specimens should

[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] The sole source of supply of the apparatus known to the committee at this time is Chemsultants International, 9349 Hamilton Dr., Mentor, OH 44061–1118. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.