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Technology Standard No. Lf 3-67

Standard Test Methods for Lacing Twines and Tapes Used as Harnesses in Electrical Equipment¹

This standard is issued under the fixed designation D 2443; 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.

1. Scope

1.1 These test methods cover procedures for braided and nonbraided fiber lacing and tying twines and tapes used to secure electrical harnesses, armatures, and similar apparatus. Both round twines and flat narrow tapes made from synthetic or natural fibers are included, and either may or may not be coated with waxes, resins, or elastomers.

1.2 The procedures appear as listed in the first column:

Procedure	Sections	ASTM Method Reference
Sampling	3	...
Conditioning	4	...
Weight (Yield)	5 to 13	D 123, D 1907
Breaking Strength and Knot Strength or Knot Slip Resistance	14 to 19	D 76
Volatile Content	20 to 27	...
Thickness and Width of Lacing Tapes and Diam- eter of Twines	28 to 35	D 374
Wax Content	36 to 42	...
Fiber Identification	43 to 45	D 276
Creep	46 to 53	...
Elastic Properties	54 to 61	...
Braid Pick of Lacing Tapes	62 to 68	...

1.3 The values stated in inch-pound units are to be regarded as 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 and health practices and determine the applicability of regulatory limitations prior to use. Specific hazard statements are given in Section 37.*

2. Referenced Documents

2.1 ASTM Standards:

D 76 Specification for Tensile Testing Machines for Textiles²

D 123 Terminology Relating to Textiles²

D 276 Test Methods for Identification of Fibers in Textiles²

D 374 Test Methods for Thickness of Solid Electrical Insulation³

¹ These methods are under the jurisdiction of ASTM Committee D-9 on Electrical and Electronic Insulating Materials and are under the direct responsibility of Subcommittee D09.07 on Flexible and Rigid Insulating Materials.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Annual Book of ASTM Standards, Vol 10.01.

D 739 Methods of Testing and Tolerances for Spun, Twisted, or Braided Products Made from Flax, Hemp, Ramie, or Mixture Thereof⁴

D 1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications³

D 1907 Test Method for Yarn Number by the Skein Method²

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

3. Sampling

3.1 For purposes of sampling, a lot shall consist of all twine or tape of the same type, color, and size treated in one production run and offered for inspection at one time.

3.2 From each lot of material, two spools or tubes or 2 % of the total spools or tubes, whichever is greater, shall be randomly selected, and the tests prescribed shall be made on specimens cut from the sampled spools.

4. Conditioning

4.1 All specimens shall be conditioned to equilibrium moisture content by exposure in air at a temperature of $21 \pm 1.1^\circ\text{C}$ and a relative humidity of $65 \pm 2\%$, unless otherwise specified herein or unless otherwise agreed upon by the supplier and the consumer. Equilibrium shall be taken as that point where two successive weighings made not less than 4 h of conditioning apart show not more than 0.1 % change in weight.

YIELD

5. Terminology

5.1 Definitions:

5.1.1 The definitions of all terms employed in these test methods shall be in accordance with Terminology D 123.

6. Significance and Use

6.1 This test provides a convenient method of determining the yield of lacing material as well as an approximation of the amount of impregnating material present in lacing twines.

Procedure A—Skein Method

7. Procedure

7.1 Determine the yield in accordance with Test Method

⁴ Discontinued, see 1971 Annual Book of ASTM Standards, Part 25.

⁵ Annual Book of ASTM Standards, Vol 14.02.