Designation: D6717 – 07

Standard Test Method for Linear Density of Elastomeric Yarns (Skein Specimens)[1]

This standard is issued under the fixed designation D6717; 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 This test method covers the determination of the linear density of "as produced" elastomeric yarns made from rubber, spandex or other elastomers using a skein.

NOTE 1—For the determination of linear density of elastomeric yarns using short length specimens, refer to Test Method D2591.

1.2 The method is not applicable to covered, wrapped, or core-spun yarns, or yarns spun from elastomeric staple, or elastomeric yarns removed from fabrics.

1.3 This test method is applicable to elastomeric yarns having a range of 40 to 3200 dtex (36 to 2900 denier).

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *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]

D123 Terminology Relating to Textiles
D1776 Practice for Conditioning and Testing Textiles
D2258 Practice for Sampling Yarn for Testing
D2591 Test Method for Linear Density of Elastomeric Yarns (Short Length Specimens)
D4849 Terminology Related to Yarns and Fibers

3. Terminology

3.1 For all terminology relating to D13.58, Yarns and Fibers, refer to Terminology D4849.

3.1.1 The following terms are relevant to this standard: denier, elastomeric yarn, linear density, tex.

3.2 For all other terminology related to textiles, refer to Terminology D123.

4. Summary of Test Method

4.1 A specimen of specified length is wound into skein form on a reel. The skein is cut, removed from the reel and weighed. Linear density is calculated using the mass of the skein and the length of yarn.

5. Significance and Use

5.1 This test method is considered satisfactory for acceptance testing of commercial shipments because current estimates of between-laboratory precision are acceptable and the method is used extensively in the trade for acceptance testing.

5.1.1 If there are differences of practical significance between reported test results for two laboratories (or more), comparative tests should be performed to determine if there is a statistical bias between them, using competent statistical assistance. As a minimum, use samples for such comparative tests that are as homogeneous as possible, drawn from the same lot of material as the samples that resulted in disparate results during initial testing, and randomly assigned in equal numbers to each laboratory. The test results from the laboratories involved should be compared using a statistical test for unpaired data, at a probability level chosen prior to the testing series. If bias is found, either its cause must be found and corrected, or future test results for that material must be adjusted in consideration of the known bias.

5.2 Linear density of elastomeric yarns is used in some calculations for tensile and elastic properties.

5.3 The test method is based on elastomeric yarns in the as-produced condition, but may be used for treated elastomeric yarns provided the treatment is specified. The method does not cover the removal of finish for the determination of linear density of "finish-free" elastomeric yarns.

6. Apparatus

6.1 *Reel*[3], 1.125-m (1.230-yd) circumference, with multiple positions for making several skeins at one time, guides that apply minimal friction to the running yarn, and with vertical-mount creel, with automatic counter to set and count the

[1] This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.58 on Yarns and Fibers.

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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] This test apparatus is commercially available.