Designation: D 3773 – 90 (Reapproved 1996)ε1

Standard Test Methods for Length of Woven Fabric[1]

This standard is issued under the fixed designation D 3773; 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.

ε[1] NOTE—Editorial changes were made throughout in April 1996.

1. Scope

1.1 These test methods cover four options for measuring fabric length and are applicable to full rolls or bolts of materials.

1.2 There are four approved options of measuring length as follows:

1.2.1 *Option A*—Hand (Section 6).

1.2.2 *Option B*—Drum (Section 7).

1.2.3 *Option C*—Clock (Section 8).

1.2.4 *Option D*—Folding (Section 9).

1.3 The values stated in either SI units or in other units shall be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system must be used independently of the other, without combining values in any way.

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.*[2]

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 Terminology Relating to Textiles[3]

D 1776 Practice for Conditioning Textiles for Testing[3]

3. Terminology

3.1 *Definitions:*

3.1.1 *length, n—of a fabric*, the distance from one end of a fabric to the other, measured parallel to the side edge of the fabric while the fabric is under zero tension and is free of folds or wrinkles.

3.1.2 *stable fabric, n*—a textile fabric in which the dimensions do not change significantly during processing or use.

3.1.2.1 *Discussion*—A stable fabric as defined above and as used in these test methods is a fabric that does not change significantly with multiple passes through measuring devices.

3.1.3 *woven fabric, n*—a structure produced when at least two sets of strands are interlaced, usually at right angles to each other, according to a predetermined pattern of interlacing, and such that at least one set is parallel to the axis along the lengthwise direction of the fabric.

3.1.4 For definitions of other textile terms used in these test methods, refer to Terminology D 123.

4. Summary of Test Methods

4.1 The length is measured from one end of the fabric to the other, using a suitable graduated device, or apparatus as described in the option used.

5. Conditioning

5.1 Condition the specimens as directed in Practice D 1776.

5.2 When full rolls or bolts of fabric cannot be properly conditioned in a reasonable time with available facilities, perform the tests without conditioning and report the actual conditions prevailing at the time of the test. Such results may not correspond with the results obtained after testing in the standard atmosphere for testing textiles.

6. Option A—Hand

6.1 *Significance and Use*—The hand method specifies that the length of a fabric be measured in a relaxed tension-free manner. This test method is the referee method to which all other test methods shall be compared for the establishment of their accuracy. This test method can be used for acceptance testing, although it is not used as a general practice because it is too time consuming.

6.1.1 In case of a dispute arising from differences in reported test values when using Test Methods D 3773 for acceptance testing of commercial shipments, the purchaser and supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take a group of test specimens which are as homogeneous as possible and which are from a lot of material of the type in question. The test specimens should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using Student's *t*-test for

[1] These test methods are under the jurisdiction of ASTM Committee D-13 on Textiles and are the direct responsibility of Subcommittee D13.60 on Fabric Test Methods, Specific.

Current edition approved Jan. 26, 1990. Published May 1990. Originally published as D 3773 – 89. Last previous edition D 3773 – 89. Replaces Sections 6 to 12 of Methods D 1910 – 64 (1975), Test for Construction Characteristics of Woven Fabrics.

[2] *Annual Book of ASTM Standards*, Vol 07.02.

[3] *Annual Book of ASTM Standards*, Vol 07.01.