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Standard Test Methods for MEASUREMENT OF COTTON FIBERS BY HIGH VOLUME INSTRUMENTS (HVI) (SPECIAL INSTRUMENTS LABORATORY SYSTEM)¹

This standard is issued under the fixed designation D 4605; 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 the measurement of length, length uniformity, strength and elongation, micronaire readings, and color of cotton fibers by a series of interconnected instruments. These methods are applicable to loose fibers taken from raw or partially processed cotton and some types of cotton waste.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 This standard contains the following sections:

	Sections
Breaking Tenacity of Cotton Fibers	17-27
Elongation at Break of Cotton Fibers	17-27
Color of Cotton	39-49
Length of Cotton Fibers	6-16
Micronaire Reading of Cotton Fibers	28-38
Trash Content of Samples of Cotton Fibers ..	50-60
Uniformity of Length of Cotton Fibers	6-16

1.4 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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:

- D 123 Terminology Relating to Textiles²
- D 1441 Recommended Practice for Sampling Cotton Fibers for Testing³
- D 1445 Test Method for Breaking Strength

and Elongation of Cotton Fibers (Flat Bundle Method)³

- D 1447 Test Method for Length Uniformity of Cotton Fibers by Fibrograph Measurement³
- D 1448 Test Method for Micronaire Reading of Cotton Fibers³
- D 1535 Method of Specifying Color by the Munsell System⁴
- D 1776 Practice for Conditioning Textiles for Testing²
- D 2253 Test Method for Color of Raw Cotton Using the Nickerson-Hunter Cotton Colorimeter³
- D 2812 Test Method for Non-Lint Content of Cotton³
- D 3025 Practice for Standardizing Cotton Fiber Test Results by Use of Calibration Cotton Standards³

3. Terminology

3.1 Definitions:

3.1.1 *breaking tenacity, n.*—the tenacity corresponding to the breaking load, for example, grams-force per tex or grams-force per denier.

3.1.2 *elongation at breaking load, n.*—in fiber strength testing of cotton, the elongation corresponding to the maximum load and expressed as a percentage of a $\frac{1}{8}$ -in. (3.2-mm) gage length.

3.1.3 *micronaire reading, n.*—a relative mea-

¹ These test methods are under the jurisdiction of ASTM Committee D-13 on Textiles and are the direct responsibility of Subcommittee D13.11 on Cotton Fibers.

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² Annual Book of ASTM Standards, Vols 07.01 and 07.02.

³ Annual Book of ASTM Standards, Vol 07.02.

⁴ Annual Book of ASTM Standards, Vol 06.01.