



Designation: D 3025 – 86 (Reapproved 1999)

Standard Practice for Standardizing Cotton Fiber Test Results by Use of Calibration Cotton Standards¹

This standard is issued under the fixed designation D 3025; 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 practice covers the use of reference standard cottons for the standardization of instruments and techniques used to test cotton fibers in various laboratories.

1.2 Standardization may be achieved by application of a correction factor based on the reference standards, or by modification of the technique in use.

NOTE 1—When reference standards are used to develop correction factors, or to adjust an operator's technique, no instrument calibration processes are involved. The term "Calibration" is properly used for the application or assignment of permanent scales or marks to an instrument. Adjustments can be made to specific instruments and accessories such as orifices, metallic strips, or cellophane sheets, in order to obtain the prescribed values with a specific instrument. Since an operator's technique or the interpretation of a method or procedure is inherently variable, it cannot be calibrated, that is, assigned a permanent, definite value. The use of reference standards, however, affords a means for standardizing techniques and checking the reliability of observed results.

1.3 This practice recognizes two types of reference standards: (1) calibration cotton standards (see 6.1) and (2) working cotton standards (see 6.2).

1.4 The instructions included in this practice can be used with cotton fibers in any form suitable for testing with the particular instrument to be used.

1.5 The instructions in the practice are applicable to cotton fibers but can also be applied to specific blends of cotton and other fibers, or to other fibers that can be tested with the instruments designed for testing cotton fibers. No information is available, however, to show that test procedures standardized with reference cotton samples are equally reliable with various cotton fiber blends or with other fibers.

NOTE 2—Standardization procedures covered in this practice are recommended for use with the following: Test Methods D 1440, D 1445, D 1447, and D 1448.

1.6 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to consult and 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 1440 Test Method for Length and Length Distribution of Cotton Fibers (Array Method)²

D 1445 Test Method for Breaking Strength and Elongation of Cotton Fibers (Flat Bundle Method)²

D 1447 Test Method for Length and Length Uniformity of Cotton Fibers By Fibrograph Measurement²

D 1448 Test Method for Micronaire Reading of Cotton Fibers²

3. Terminology

3.1 Definitions:

3.1.1 *calibration cotton standard, n*—cotton samples taken from blended bulk source on which fiber properties have been determined under the International Calibration Cotton Standards Program. (Syn. international calibration cotton)

3.1.2 *reference standard, n*—in cotton testing, a homogeneous lot of cotton having a known or accepted value for one or more physical properties.

3.1.3 *working cotton standard, n*—a reference standard developed primarily for use within a specific laboratory. (Syn. within-laboratory cotton standard)

3.2 For definitions of other terms used in this practice, refer to Terminology D 123.

4. Summary of Practice

4.1 Testing instruments are adjusted in accordance with engineering principles to ensure that they correspond properly to the manufacturer's calibration scales and instructions for the operation of the instrument.

4.2 Technicians are instructed to operate testings instruments in a consistent manner utilizing appropriate prescribed ASTM methods.

4.3 Specimens of the working cotton standard or calibration cotton standard are tested before and periodically during the routine testing of cotton samples using the same techniques for all specimens tested.

4.4 Observed values for samples tested are adjusted through use of a correction factor calculated from observed values

¹ This practice is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.11 on Cotton Fibers.

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² Annual Book of ASTM Standards, Vol 07.01.