



Standard Tolerances for Yarns Spun on the Cotton or Worsted Systems¹

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1. Scope

1.1 These tolerances are applicable to all yarns spun on the cotton or the worsted system, either carded or combed, and composed of any fiber or mixture of fibers, except cotton tire cords and novelty or fancy yarns.

1.2 These tolerances are applicable only to yarns taken from packages, and not to yarns taken from greige or processed fabrics.

NOTE 1—For tolerances for other spun yarns, see Tolerances D 2644, Methods D 179 and D 738, and Specifications D 541 and D 681.

1.3 *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:

- D 123 Terminology Relating to Textiles²
- D 179 Methods for Testing Tire Cords and Cord Fabrics Made from Cotton³
- D 541 Specification for Single Jute Yarn²
- D 681 Specification for Jute Rove and Piled Yarn for Electrical and Packing Purposes⁴
- D 738 Methods for Rope Made from Bast and Leaf Fibers⁵
- D 1422 Test Method for Twist in Single Spun Yarns by the Untwist-Retwist Method²
- D 1423 Test Method for Twist in Yarns by the Direct-Counting Method²
- D 1578 Test Method for Breaking Strength of Yarn in Skein Form²
- D 1907 Test Method for Yarn Number by the Skein Method²
- D 2255 Test Method for Grading Spun Yarns for Appearance²
- D 2256 Test Method for Tensile Properties of Yarns by the

Single-Strand Method²

- D 2257 Test Method for Extractable Matter in Textiles²
- D 2258 Practice for Sampling Yarn for Testing²
- D 2494 Test Method for Commercial Mass of a Shipment of Yarn or Man-Made Staple Fiber or Tow²
- D 2644 Tolerances for Yarn Spun on the Woolen System²

3. Terminology

3.1 Definitions:

3.1.1 *cotton system, n*—a spinning system adapted to fibers less than 65 mm (2.5 in.) in length.

3.1.1.1 *Discussion*—This system usually employs flat-top cards and may use roller and other drafting assemblies on intermediate processes and spinning machines.

3.1.2 *tolerances, n*—in mathematics, prescribed limits of variation for specified properties of a particular material based on observed values obtained by specified test methods and on samples that are representative of the material.

3.1.3 *worsted system, n*—a spinning system adapted to fibers 50 to 225 mm (2 to 9 in.) in length.

3.1.3.1 *Discussion*—This system employs roller-top cards, pin drafters, or gills, and widely spaced roller drafting assemblies on roving and spinning frames. Wool yarns spun on the worsted system are usually combed; worsted-spun man-made fiber yarns are not combed.

3.1.4 For definitions of worsted-spun yarns and other terms used in these tolerances, refer to Terminology D 123.

4. Sampling

4.1 Take samples as directed in the applicable material specification, or in the absence of specifications, proceed as directed in Practice D 2258.

5. Tolerances

5.1 *Strength*—The average breaking force of each lot shall be equal to or greater than the specified minimum.

5.2 Yarn Number:

5.2.1 The average yarn number of yarns spun on cotton system or the worsted system shall conform to the limits: specified value $\pm$ 4.0 % of the specified value.

5.3 Twist:

5.3.1 The direction of twist in each package or end shall be S or Z, as specified.

5.3.2 In all cotton-system yarns except single yarns made of cotton, the average twist shall conform to the limits: specified

¹ These tolerances are under the jurisdiction of ASTM Committee D13 on Textiles, and are the direct responsibility of Subcommittee D13.58 on Yarn Test Methods, General.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Discontinued, see 1974 Annual Book of ASTM Standards, Part 32.

⁴ Discontinued; see 1999 Annual Book of ASTM Standards, Vol 07.01.

⁵ Discontinued, see 1971 Book of ASTM Standards, Part 25.