



Designation: D 2644 – 81 (Reapproved 1996)^{ε1}

Standard Tolerances for Yarns Spun on the Woolen System¹

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^{ε1} NOTE—Editorial changes were made throughout standard in February 1997.

1. Scope

1.1 These tolerances are applicable to all yarns spun on the woolen system and composed of any fiber or mixture of fibers, even though there might not be any wool present in the yarn.

NOTE 1—For tolerances for other spun yarns, see Tolerances D 738 and D 2645 and Specifications D 541 and D 681.

2. Referenced Documents

2.1 ASTM Standards:

- D 123 Terminology Relating to Textiles²
- D 541 Specification for Single Jute Yarn²
- D 681 Specification for Jute Rove and Plied Yarn for Electrical and Packing Purposes²
- D 738 Tolerances and Methods for Rope Made from Bast and Leaf Fibers³
- 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 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 2645 Tolerances for Yarns Spun on the Cotton or Worsted Systems²

3. Terminology

3.1 Definitions:

3.1.1 *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.

3.1.2 *wool, n*—used in the generic sense in these tolerances, the fiber from the fleece of the sheep or lamb, the hair of the Angora or Cashmere goat, rabbit hair, and the so-called specialty fibers from the hair of the camel, alpaca, llama, and vicuna.

3.1.3 *woolen-spun, adj*—of, or pertaining to, material produced by the woolen system of yarn spinning as distinct from materials made by the worsted system of spinning.

3.1.3.1 *Discussion*—Woolen-spun yarns do not necessarily contain any wool.

3.1.4 *woolen system, n*—a spinning system employing a minimum of drafting and producing yarns of low bulk density.

3.1.4.1 *Discussion*—Roving is produced by rub aprons in the condenser section at the front of a roller-top card. There is no roller drafting, or other intermediate process between carding and spinning.

3.1.5 For definitions of other textile terms used in these tolerances see Terminology D 123.

4. Sampling

4.1 Take samples as directed in the applicable material specification, or as agreed upon by the purchaser and the supplier. In the absence of an applicable specification or other agreement, 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 average.

5.2 *Yarn Number*—The average yarn number shall be within the following tolerances:

	Deviation from the Specified Yarn Number, %
500 tex or 0.6 woolen run to 165 tex or 1.86 woolen run	± 7.5
Finer than 165 tex or 1.86 woolen run	± 5.0

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 The average twist shall conform to the limits: specified value ± 7.5 % of the specified value.

5.3.3 The average twist of the package containing the

¹ These tolerances are under the jurisdiction of ASTM Committee D-13 on Textiles, and are the direct responsibility of Subcommittee D13.58, Yarn Test Methods, General.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Discontinued—See 1971 Book of ASTM Standards, Part 25.