



Designation: D2644 – 12 (Reapproved 2025)

Standard Tolerances for Yarns Spun on the Woolen System¹

This standard is issued under the fixed designation D2644; 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 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 D2645 .

1.2 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

- 2.1 *ASTM Standards:*²
 - D123 Terminology Relating to Textiles
 - D1422/D1422M Test Method for Twist in Single Spun Yarns by the Untwist-Retwist Method
 - D1423/D1423M Test Method for Twist in Yarns by Direct-Counting
 - D1578 Test Method for Breaking Strength of Yarn in Skein Form
 - D1907/D1907M Test Method for Linear Density of Yarn (Yarn Number) by the Skein Method
 - D2256/D2256M Test Method for Tensile Properties of Yarns by the Single-Strand Method
 - D2257 Test Method for Extractable Matter in Textiles
 - D2258/D2258M Practice for Sampling Yarn for Testing
 - D2494 Test Method for Commercial Mass of a Shipment of Yarn or Manufactured Staple Fiber or Tow
 - D2645 Tolerances for Yarns Spun on the Cotton or Worsted Systems
 - D4849 Terminology Related to Yarns and Fibers

¹ These tolerances are under the jurisdiction of ASTM Committee D13 on Textiles and are the direct responsibility of Subcommittee D13.58 Yarns and Fibers. Current edition approved June 1, 2025. Published June 2025. Originally approved in 1967. Last previous edition approved in 2018 as D2644 – 18. DOI: 10.1520/D2644-12R25.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

3. Terminology

- 3.1 For terminology related to yarn test methods, refer to Terminology D4849.
- 3.2 For definitions of other terms, refer to Terminology D123.

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 D2258/D2258M.

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 highest average twist shall not be higher than that of the package containing the lowest average twist by more than 15.0 % of the lower average.
- 5.4 *Extractable Matter*—The average percent extractable matter shall not exceed the following values:

	%
Dry-spun	2.0
Oil-spun, semi-scoured	15.0
Oil-spun scoured:	
Blends, 50 % wool or less	4.0
All wool or more than 50 % wool	10.0

5.5 *Commercial Mass*—In the absence of other contractual agreements, the invoice mass, that is the commercial mass as adopted in a specific branch of the textile trade and as determined by the supplier, shall not exceed the commercial