



Designation: D2497 – 07

Standard Tolerances for Manufactured Organic-Base Filament Single Yarns¹

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1. Scope

1.1 These tolerances cover first-quality, manufactured, organic-base filament single yarns (namely, bright, semi-dull, dull, solution-dyed, bleached, unbleached, etc.) regardless of the package type. These tolerances cover permissible variations in linear density, tenacity, elongation, twist, and commercial weight.

1.1.1 These tolerances do not apply to rubber yarns, spandex yarns, metal-covered yarns, nor to bulk yarns since test methods for these types of yarn are not available. These tolerances do not apply to industrial filament yarns.

NOTE 1—Tolerances for inorganic glass yarns are given in Specifications and Methods [D578](#).

1.2 This standard covers only tolerances. It does not cover specifications or quality levels, for yarns to be used for any purpose. Specifications for specific properties are subject to agreement by the purchaser and the supplier.

NOTE 2—While the tolerances specified may be applied to yarn taken from fabric, the properties of such yarns will likely differ from the original level.

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:*²

[D123 Terminology Relating to Textiles](#)

[D578 Specification for Glass Fiber Strands](#)

[D1423 Test Method for Twist in Yarns by Direct-Counting](#)

[D1907 Test Method for Linear Density of Yarn \(Yarn Number\) by the Skein Method](#)

[D2256 Test Method for Tensile Properties of Yarns by the Single-Strand Method](#)

[D2258 Practice for Sampling Yarn for Testing](#)

[D2494 Test Method for Commercial Mass of a Shipment of Yarn or Manufactured Staple Fiber or Tow](#)

[D4849 Terminology Related to Yarns and Fibers](#)

3. Terminology

3.1 For all terminology relating to D13.58, Yarns and Fibers, refer to Terminology [D4849](#).

3.1.1 The following terms are relevant to this standard: tolerances.

3.2 For all other terminology relating to textiles, refer to Terminology [D123](#).

4. Significance and Use

4.1 These tolerances may be used as a guide in purchaser/supplier disputes, or to assist in assigning nominal values for linear density and twist. The tolerances listed for each property represent the maximum variations deemed acceptable in the trade.

5. Test Methods

5.1 Take a sample of yarn as directed in Practice [D2258](#). Make the indicated tests as directed in Test Method [D1907](#) for Yarn Number, Test Method [D1423](#) for Direct Twist, Test Method [D2256](#) for Single Strand Breaking Strength, and Test Method [D2494](#) for Commercial Mass.

6. Tolerances

6.1 *Linear Density*—The average linear density shall conform to the average linear density agreed upon between the purchaser and the supplier with the tolerances specified in [Table 1](#).

6.2 *Strength*—The average breaking force of the yarn determined in single strand tests or the average force at a specific level of elongation, in each packing case of ten or more yarn packages or on a beam, shall be equal to or exceed the previously agreed upon level.

6.3 *Elongation*—The average elongation of the yarn at the breaking force or at a specified force, in each packing case of ten or more yarn packages or on a beam, shall conform to the limits: specified elongation $\pm 20\%$ of the specified average elongation.

¹ These tolerances are under jurisdiction of ASTM Committee [D13](#) on Textiles and are the direct responsibility of Subcommittee [D13.58](#) on Yarns and Fibers.

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