



Standard Test Method for Twist in Single Spun Yarns by the Untwist-Retwist Method¹

This standard is issued under the fixed designation D 1422; 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 test method² describes the determination of twist in single spun yarns when only an approximation of the true twist is required.

NOTE 1—For a more accurate method see Test Method D 1423.

1.2 This test method is applicable to spun single yarns in continuous lengths, and also to spun yarns raveled from fabrics, provided specimens at least 200 mm (8 in.) long can be obtained.

1.3 The values stated in either inch-pound or SI units are to be regarded separately as standard. Within the text, the SI units are shown in parentheses. The values stated in each system are not exact equivalents; therefore each system shall be used independently of the other. Combining values from the two systems may result in nonconformance within this test method.

1.4 This test method has been found satisfactory for use in determining twist in all single ring spun yarns and 100% cotton open-end yarns. For all open-end spun yarns that are not 100 % cotton this test method has not been found to be satisfactory for determining twist but may be used to measure deviation from an average value.

1.5 This specification shows the values in both inch-pound units and SI units. The “inch-pound” units is the technically correct name for the customary units used in the United States. The “SI” units is the technically corrected name for the system of metric units known as the International System of Units. The values stated in either acceptable metric units or in other units shall be regarded separately as standard. The values expressed in each system may not be exact equivalents; therefore, each system must be used independently of the other, without combining in any way.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles, and is the direct responsibility of Subcommittee D13.58 on Yarn Test Methods, General.

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² This test method is commonly designated by the less precise term “Untwist-Retwist Method.”

2. Referenced Documents

2.1 ASTM Standards:

D 123 Terminology Relating to Textiles³

D 1059 Test Method for Yarn Number Based on Short-Length Specimens³

D 1423 Test Method for Twist in Yarns by the Direct-Counting Method³

D 2258 Practice for Sampling Yarn for Testing³

3. Terminology

3.1 Definitions:

3.1.1 *direction of twist, n*—the right or left direction of the helix formed in a twisted strand as indicated by superimposition of the capital letter “S” or “Z.”

3.1.1.1 *Discussion*—Yarn has **S** twist if, when the yarn is held in a vertical position, the visible spirals or helices around its central axis conform in direction of slope to the central portion of the letter “S,” and **Z** twist if the visible spirals or helices conform in direction of slope to the central portion of the letter “Z.” When two or more yarns, either single or plied, are twisted together, the letters “S” and “Z” are used in a similar manner to indicate the direction of the last twist inserted.

3.1.2 *single yarn, n*—the simplest strand of textile material suitable for operations such as weaving, knitting, etc.

3.1.2.1 *Discussion*—A single yarn may be formed from fibers with more or less twist; from filaments with or without twist; from narrow strips of materials such as paper, cellophane, or metal foil; or from monofilaments. A yarn which is either twistless or can be rendered twistless in a single untwisting operation. When twist is present, it is usually all in the same direction.

3.1.3 *spun yarn, n*—in a staple system, a continuous strand of fibers held together by some binding mechanism.

3.1.3.1 *Discussion*—The binding mechanism most commonly used in spun yarns is twist. Other useful mechanisms that are used are chemical additives, wrapping, entanglement, or some combination of these. Test Method D 1422 is applicable only to yarns which have twist.

3.1.4 *twist, n*—in textile strands, the helical or spiral configurations induced by turning a strand about its longitudinal axis.

³ Annual Book of ASTM Standards, Vol 07.01.