



Designation: D6197 – 99 (Reapproved 2011)

Standard Test Method for Classifying and Counting Faults in Spun Yarns in Electronic Tests¹

This standard is issued under the fixed designation D6197; 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 method covers the classifying and counting of faults in spun yarns using capacitance testers.

1.1.1 Protruding fibers or yarn hairiness, or both, are not determined as part of this method.

NOTE 1—For measuring protruding fibers or hairiness, or both, refer to Guide D5647.

1.2 This test method provides for grading yarns by fault level and type.

1.3 This test method is applicable to all single or plied spun yarns from natural or manufactured fibers or blends of each.

1.4 The values stated in SI units are to be regarded as standard; the values in inch-pound units are provided as information only and are not exact equivalents.

1.5 *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

D2258 Practice for Sampling Yarn for Testing

D5647 Guide for Measuring Hairiness of Yarns by the Photo-Electric Apparatus

3. Terminology

3.1 *Definitions:*

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

3.1.2 *yarn fault, n—in textile strands*, a change in thickness sufficient to be visible to the normal human eye.

3.1.2.1 *Discussion*—In this test method, a visible change in thickness, such as an abnormal thick or thin place in the yarn resulting in a large change in yarn diameter or any foreign matter affixed to or spun into the yarn, such as a nep, is considered to be a fault. Thick faults are reported as either major or minor depending on the combination of length and diameter. The most accepted criterion for major faults (infrequent thick places) is 250 to 400 % larger than yarn diameter and 20 to 40- mm (0.8 to 1.5-in.) long. The minor faults (frequent thick places) are 100 to 150 % larger than yarn diameter and 1.0 to 40-mm (0.04 to 1.5- in.) long. The thin place classes are arranged and considered separately. The criteria for thin places may vary with manufacturers, but will generally fall in the category of less than 30 % of diameter and greater in length than 10 mm.

3.1.3 *yarn fault count, n*—the number of faults per specified length of product.

3.1.4 For definitions of other textile terms used in this method, refer to Terminology D123.

4. Summary of Test Method

4.1 A specimen is passed through the sensing device of a classifying instrument at a constant speed. The electronic counting instrument records the faults and classifies them according to their length and relative diameter. The faults for the most part are in the form of thick places, thin places and neps in yarns spun on various spinning systems.

5. Significance and Use

5.1 This test method is considered satisfactory for acceptance testing of commercial shipments of spun yarns by agreement between purchaser and supplier.

5.1.1 In case of a dispute arising from differences in reported test results when using this test method for acceptance testing of commercial shipments, the purchaser and supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent statistical assistance is recommended for the investigation of bias. As a minimum, the two parties should take a group of test specimens that are as homogenous as possible and that are from a lot

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is 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.