



Designation: D 1770 – 94 (Reapproved 2000)

Standard Test Method for Neps, Vegetable Matter, and Colored Fiber in Wool Top¹

This standard is issued under the fixed designation D 1770; 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 determination of the number of neps and pieces of vegetable matter by size classes, and the number of colored fibers, in 15 g samples of wool top.²

1.2 This test method is applicable to wool top in any form.

NOTE 1—For the determination of number of neps per specified mass of cotton samples, refer to Test Method D 1446.

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:*

D 123 Terminology Relating to Textiles³

D 1776 Practice for Conditioning Textiles for Testing³

D 1446 Test Method for Number of Neps in Cotton Samples⁴

3. Terminology

3.1 *Definitions:*

3.1.1 *colored fiber, n—in wool top*, any fiber the color or shade of which differs from the normal color or shade of the fiber mass of the sample.

3.1.2 *laboratory sample, n*—a portion of material taken to represent the lot sample, or the original material, and used in the laboratory as a source of test specimens.

3.1.3 *lot, n—in acceptance sampling*, that part of a consignment or shipment consisting of material from one production lot.

3.1.4 *nep, n*—one or more fibers occurring in a tangled and unorganized mass.

3.1.4.1 *Discussion*—For the purpose of this test method, the mass of unorganized fibers retains its identity upon removal from a fibrous strand.

3.1.5 *test specimen, n—in wool top*, a length of specified mass taken at random from a length of wool top selected as a laboratory sample.

3.1.6 *top, n—in wool*, a continuous untwisted strand of wool fibers from which the shorter fibers or noils have been removed by combing.

3.1.7 *vegetable matter, n—in wool top*, the pieces of burrs, seeds, shive, leaves, twigs, and grasses which have escaped removal in processing, also foreign vegetable fibers such as hemp, sisal, etc., if present.

3.1.8 For definitions of other textile terms used in this test method, refer to Terminology D 123.

4. Summary of Test Method

4.1 Four test specimens are taken and examined in accordance with specified procedures. Each observed nep or piece of vegetable matter is classified by size, by visual comparison with a specified standard size chart. The numbers of each class of neps and class of vegetable matter pieces, and the number of colored fibers, are recorded for each specimen. From these data the average counts per specimen of 15 g are calculated.

5. Significance and Use

5.1 Test Method D 1770 for the determination of neps, vegetable matter, and colored fiber may be used for the acceptance testing of commercial shipments of wool top but caution is advised because the between-laboratory precision is known to be poor. Comparative tests as directed in 5.1.1 may be advisable.

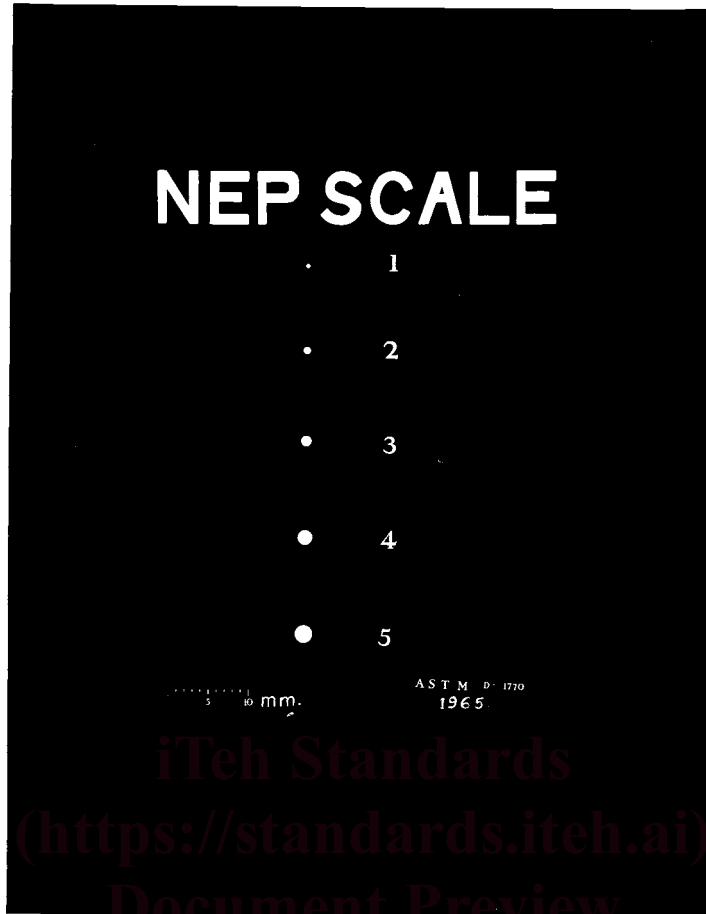
5.1.1 In case of a dispute arising from differences in reported test results when using Test Method D 1770 for acceptance testing of commercial shipments, the purchaser and the supplier should conduct comparative tests to determine if there is a statistical bias between their laboratories. Competent 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 homogeneous as possible and that are from a lot of material of the type in question. The test specimens should then be randomly assigned in equal numbers to each laboratory for testing. The average results from the two laboratories should be compared using Student's *t*-test for unpaired data and an acceptable probability level chosen by the two parties before the testing is begun. If a bias is found, either

¹ This test method is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.13 on Wool and Wool Felt. Current edition approved Dec. 15, 1994. Published April 1995. Originally published as D1770 – 60 T. Last previous edition D1770 – 88 (1993)¹.

² For additional information, reference may be made to "Neps in Worsted Sliver," *Wool Science Review*, Vol 22, March 1963, pp. 28–38.

³ *Annual Book of ASTM Standards*, Vol 07.01.

⁴ Discontinued—See 1976 *Annual Book of ASTM Standards*, Part 33.



NOTE 1—Figs. 1 and 2 should preferably not be used as substitutes for the original prints obtainable from ASTM.⁵

FIG. 1 Visual Standard

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its cause must be found and corrected or the purchaser and the supplier must agree to interpret future test results in the light of the known bias.

6. Apparatus

6.1 *Nep Scale Standard*, see Fig. 1.⁵

6.2 *Vegetable Matter Standard*, see Fig. 2.⁵

6.3 *Examination Surfaces*, consisting of a dark surface illuminated from above for nep test and a white surface illuminated from above for vegetable matter and colored fiber tests. Alternatively, a white translucent surface with under-lighting may be used for all tests. When a translucent surface is used, colored fibers must be reexamined on an over-lighted white surface to avoid inclusion of medullated fibers.

6.4 *Tweezers*, with pointed ground ends.

6.5 *Balance or Scale*, capacity at least 25 g with a sensitivity of 0.01 g.

7. Sampling

7.1 *Lot Sample*—As a lot sample for acceptance testing, take at random the number of shipping containers directed in

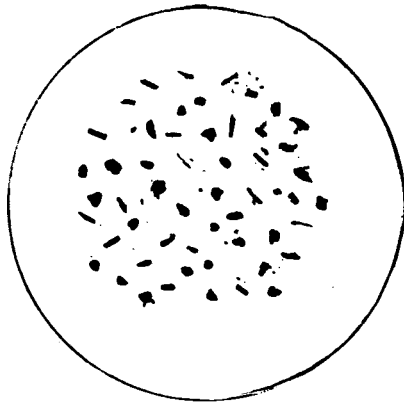
an applicable material specification or other agreement between the purchaser and the supplier. Consider shipping containers to be the primary sampling units.

NOTE 2—An adequate specification or other agreement between the purchaser and the supplier requires taking into account the variability between shipping containers, between laboratory samples within a shipping container, and between test specimens within a laboratory sample to provide a sampling plan with a meaningful producer’s risk, consumer’s risk, acceptable quality level, and limiting quality level.

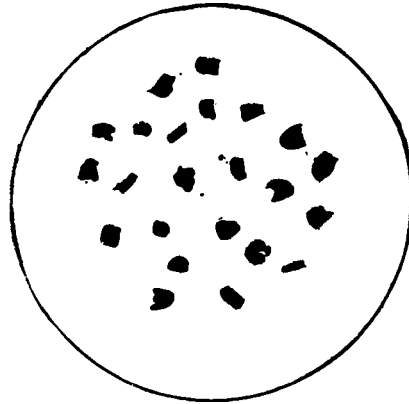
7.2 *Laboratory Sample*—As a laboratory sample for acceptance testing, take from each shipping container in the lot sample the first 3 yd (3 m) of material from the lead end of the strand that has a clean, uniform appearance. If the shipping containers in the lot sample contain multiple packages, take a laboratory sample from one package drawn at random from each shipping container.

7.3 *Test Specimens*—After conditioning, take one test specimen from each unit in the laboratory sample by starting at a random location along the length of the sample and cutting with scissors a section long enough to weigh 15.00 ± 0.10 g, adjusting the length as needed to obtain the required mass. Record the mass of the conditioned specimen to the nearest 0.01 g.

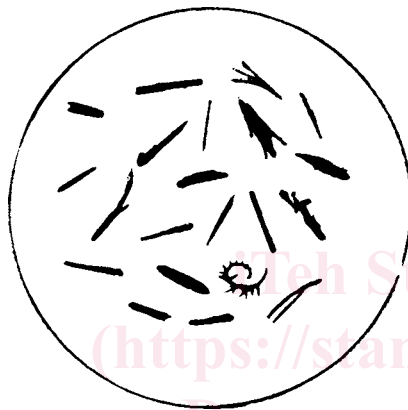
⁵ Original prints of these illustrations are available from ASTM Headquarters, 100 Barr Harbor Drive, West Conshohocken, PA 19428. Request Adjunct No. 12-417700-00 for Nep Scale Standard and Vegetable Matter Standard.



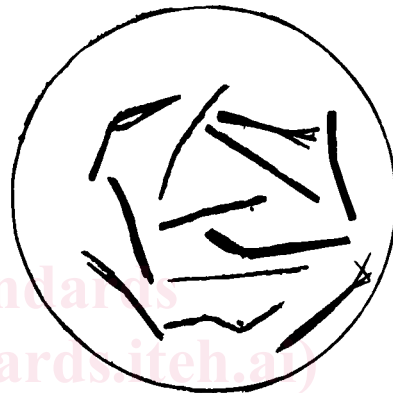
Vegetable Matter
Not to be Counted



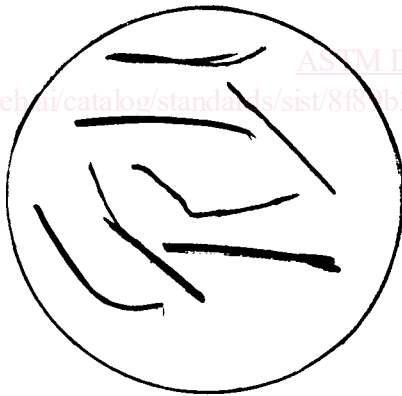
Specks



$\frac{1}{8}$ to $\frac{1}{2}$ in. (3.2 to 12.7 mm)



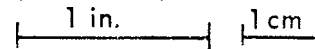
$\frac{1}{2}$ to $\frac{3}{4}$ in. (12.7 to 19.1 mm)



$\frac{3}{4}$ to 1 in. (19.1 to 25.4 mm)



1 to $1\frac{1}{2}$ in. (25.4 to 38.1 mm)



NOTE 1—Figs. 1 and 2 should preferably not be used as substitutes for the original prints obtainable from ASTM. ⁵

FIG. 2 Vegetable Matter Classes

8. Conditioning

8.1 Bring the laboratory samples to moisture equilibrium for obtaining test specimens in the standard atmosphere for testing textiles as directed in Practice D 1776. Preconditioning is not necessary.

9. Procedure

9.1 Test each weighed specimen, in the prevailing atmosphere if preferred, as follows:

9.1.1 Draw a portion not exceeding one-tenth of the specimen and spread it over the prescribed examination surface.