



Standard Test Method for Laboratory Determination of the Fiber Content of Peat Samples by Dry Mass¹

This standard is issued under the fixed designation D1997; 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 laboratory determination of the fiber content of peat (as defined in Classification [D4427](#)) by dry mass. It also may be used for non-peat organic soil materials.

1.2 Because this test method is simple and requires no sophisticated equipment to perform, it is especially recommended for routine reconnaissance work, where large numbers of samples need to be tested and mineral contents are low.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard. Alternate sieve designations in parentheses are as provided in Specification [E11](#). Use Practice [D6026](#) for determining significant digits to report.

1.4 *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

[D653 Terminology Relating to Soil, Rock, and Contained Fluids](#)

[D2974 Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils](#)

[D3740 Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction](#)

[D4427 Classification of Peat Samples by Laboratory Testing](#)

[D6026 Practice for Using Significant Digits in Geotechnical Data](#)

¹ This test method is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.22](#) on Soil as a Medium for Plant Growth.

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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.

[E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves](#)

3. Terminology

3.1 Definitions:

3.1.1 For common definitions of terms in this standard, refer to Terminology [D653](#).

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *fiber*—a fragment or piece of plant tissue that retains a recognizable cellular structure and is large enough to be retained on a 150- μ m (No. 100) sieve. Plant materials larger than 20 mm in smallest dimension are not considered fibers.

4. Summary of Test Method³

4.1 A known mass of intact, undried peat is soaked in a dispersing agent (5 % sodium hexametaphosphate) for approximately 15 h. The material is then washed through a 150- μ m (No. 100) sieve (see Specification [E11](#)) by application of a gentle flow of tap water. The fibrous material left on the sieve is oven-dried (at $110 \pm 5^\circ\text{C}$) until the mass does not change more than 0.1 % per hour. The mass of fiber is expressed as a percentage of the oven-dried mass of the original sample.

NOTE 1—The quality of the result produced by this standard is dependent on the competence of the personnel performing it, and the suitability of the equipment and facilities used. Agencies that meet the criteria of Practice [D3740](#) are generally considered capable of competent and objective testing/sampling/inspection/etc. Users of this standard are cautioned that compliance with Practice [D3740](#) does not in itself assure reliable results. Reliable results depend on many factors; Practice [D3740](#) provides a means of evaluating some of those factors.

5. Significance and Use

5.1 The purpose of this test method is to standardize the procedure for determining fiber content of peat by dry mass.

5.2 A standard test method for determining the quantity of fibers in a peat sample is necessary not only for classifying peats and organic soils (as in Classification [D4427](#)), but is also a significant parameter in predicting or defining the many end

³ This test method is a modified version of one described in: Riley, J. L., "Laboratory Methods for Testing Peat," *Ontario Peatland Inventory Project*, Ontario Geological Survey Open File Report 5572, 1986, pp. 21–22.

*A Summary of Changes section appears at the end of this standard