Designation: D2977 – 14

# Standard Practice for Particle Size Range of Peat Materials for Horticultural Purposes[1]

This standard is issued under the fixed designation D2977; 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 practice covers measurement of the mass percentage of fractions of a peat material defined in terms of selected ranges of screen sizes.

1.2 *Units*—The values stated in SI units are being regarded as standard. Units of inch-pound are provided for information only.

1.3 All measured and calculated values shall conform to the guidelines for significant digits and rounding established in Practice D6026.

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

D4753 Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

D6026 Practice for Using Significant Digits in Geotechnical Data

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

## 3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of common technical terms in this practice, refer to Terminology D653.

## 4. Summary of Practice

4.1 A representative test specimen of air-dried peat is separated into four designated fractions by means of a 2.36 mm (No. 8) sieve and an 0.85 mm (No. 20) sieve. The fractions are: (*1*) foreign matter removed manually from the 2.36 mm (No. 8) sieve, (*2*) coarse fiber retained on the 2.36 mm (No. 8) sieve, (*3*) medium fiber through the 2.36 mm (No. 8) sieve but retained on the 0.85 mm (No. 20) sieve and fine fibers and fines through the 0.85 mm (No. 20) sieve. The mass percentage of each fraction is reported on the as-received basis.

## 5. Significance and Use

5.1 This practice separates peat material into arbitrary fractions based on particle size. Physical separation of peat material according to particle size provides a useful indicator of the properties of a peat specimen such as pore space, decomposition, etc. It provides a means of determining the amount of foreign matter not in a divided state such as sticks, stones, and glass.

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/ and the like. 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.

## 6. Apparatus

6.1 *Mechanical Sieve Shaker.*

6.2 *Sieves*—2.36 mm (No. 8) and 0.85 mm (No. 20) sieves equipped with cover and bottom pan.

6.3 *Balance or Scale,* a balance or scale for determining the mass of the soil having a minimum capacity of 500 g and

[1] This practice 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.

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

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meeting the requirements of Standard D4753 for a balance or scale of 0.01 g readability.

## 7. Preparation of Sample

7.1 Air-dry sample in accordance with Method B of Test Methods D2974, and record the mass percentage of moisture removed by air-drying. Information on obtaining a representative sample is covered in Test Methods D2974.

## 8. Procedure

8.1 Mix the air-dried sample thoroughly and place an approximately 20-g specimen on the 2.36 mm (No. 8) sieve. Secure the 2.36 mm (No. 8) and 0.85 mm (No. 20) sieves equipped with cover and bottom pan and shake at a suitable speed for 10 min. Remove foreign matter from the 2.36 mm (No. 8) sieve and determine the mass. Designate this fraction as foreign matter. Determine the mass of the remaining fraction retained on the 2.36 mm (No. 8) sieve and designate this fraction as coarse fiber. Determine the mass of the fraction retained on the 0.85 mm (No. 20) sieve and designate this fraction as medium fiber. Determine the mass of the fraction found in the bottom pan and designate this fraction as fines.

## 9. Calculation

9.1 Convert the specimen mass and fraction mass to the as-received basis in accordance with Method B of Test Methods D2974.

NOTE 2—If foreign matter is absent, conversion to the as-received basis is not necessary.

## 10. Report: Test Data Sheet(s)/Form(s)

10.1 Record as a minimum the following general information:

10.1.1 Sample/specimen identifying information, such as Project No., Boring No., Sample No., Depth, etc.

10.1.2 Any special selection and preparation process, such as removal of gravel or other materials.

10.1.3 Technician name/initials, method used and date.

10.2 Record as a minimum the following test information:

10.2.1 Foreign matter = fraction removed from 2.36 mm (No. 8) sieve

10.2.2 Coarse fiber = fraction retained on 2.36 mm (No. 8) sieve

10.2.3 Medium fiber = fraction retained on 0.85 mm (No. 20) sieve

10.2.4 Fine fibers and fines = fraction through 0.85 mm (No. 20) sieve (in pan)

## 11. Keywords

11.1 particle size; peat; sieving

## SUMMARY OF CHANGES

In accordance with Committee D18 policy, this section identifies the location of changes to this standard since the last edition (03) that may impact the use of this standard.

*(1)* Standard D6026 was added to the Referenced Documents Section.
*(2)* Typos were corrected.
*(3)* Subcommittee designated as responsible for this standard was updated.
*(4)* Units statement added to the Scope.
*(5)* Test method was changed to a practice.
*(6)* Precision and Bias statement was removed until uniform samples can be prepared and an inter-laboratory study can be performed.

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