Designation: D2978 – 15

Standard Test Methods for Volume of Processed Peat Materials[1]

This standard is issued under the fixed designation D2978; 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 These test methods cover the measurement of the volume of loose and baled processed peat expressed as cubic feet and is used as a quality control measurement to determine if the package contains the labeled amount of material. The results of these test methods are highly dependent on the experience of the personnel running the procedure.

1.2 There are two test methods, Method A for Loose Peat and Method B for Baled Peat. Method A is used when the material is uncompacted and Method B is used when the material is compacted.

1.3 *Units*—The values stated in inch-pound units are to be regarded as standard. Except, that the sieve designations are typically identified using the "alternative" system in accordance with Practice E11, such as 3-in. and No. 200, instead of the "standard" of 75-mm and 75-µm, respectively.

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

1.4.1 The procedures used to specify how data are collected/recorded or calculated in this standard are regarded as the industry standard. In addition, they are representative of the significant digits that generally should be retained. The procedures used do not consider material variation, purpose for obtaining the data, special purpose studies, or any considerations for the user's objectives; and it is common practice to increase or reduce significant digits of reported data to be commensurate with these considerations. It is beyond the scope of this standard to consider significant digits used in analysis methods for engineering design.

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]

D653 Terminology Relating to Soil, Rock, and Contained Fluids

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

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 standard, refer to Terminology D653.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *loose peat, n*—uncompacted peat in air-dried, granulated or crumb form.

4. Summary of Test Method

4.1 These test methods consist of either measuring the outer dimensions of compacted peat (Method B) or dividing the particles of uncompacted peat (Method A) by passing them through a ½-in. (12.5-mm) sieve and allowing them to fall into a volume-measuring container.

5. Significance and Use

5.1 These test methods are used to quantify the volume of peats under consideration in commercial transactions to determine if the package contains the labeled quantity. As such, material comes into the test area in an "as sold" condition.

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 ensure reliable results. Reliable results depend on many factors; Practice D3740

[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.

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

provides a means of evaluating some of those factors.

6. Apparatus

6.1 *Sieve,* ½-in. (12.5-mm), conforming to Specification E11.

6.2 *Measuring Container*—A steel or wood bound container with metal having one of the following sets of inside dimensions:

Size (ft^3)	Measuring Container Dimensions (W × L × H)
½	12 × 12 × 12 in. with line scribed at 6 in. from the bottom
¾	12 × 12 × 12 in. with line scribed at 9 in. from the bottom
1	12 × 12 × 12 in.
2	16 × 16 × 13.5 in.
5	16 × 16 × 33.75 in.

6.3 *Straight Edge*—At least 20 inches (50.8 cm) in length

6.4 *Dimension Measuring Device*—A tape measure, ruler, or similar device with sufficient capacity to measure, without estimation, the baled peat and readable to 1 in. or better.

7. Procedure

7.1 Select the measuring container most closely corresponding to the amount of volume the label states is contained in the package.

7.2 For either method, use all of the material in the package for testing.

7.3 The volume of the material can only be determined once.

7.4 *Method A: Loose Peat:*

7.4.1 Place the ½-in. (12.5-mm) sieve on top of the selected measuring container.

7.4.2 Open the package and from a height of 2 ft over the sieve and measuring container, pour the contents over the sieve and into the measuring container.

7.4.3 The corners of the measuring container shall be well filled by shaking with a rotary motion at one rotation per second for five seconds without lifting the box from the floor or other surface. When filled and if necessary, level the measuring container off using the straightedge. Measure and record the volume to the nearest 1 ft^3.

7.5 *Method B: Baled Peat:*

7.5.1 Measure and record the width, length, and height of the bale to the nearest 1 in. Measurements shall be corrected for the outside wrappers if the wrappers are thicker than ¾ in.

7.5.2 Determine the volume of the baled peat by multiplying the width, length, and height (W × L × H) and record the volume to the nearest 1 ft^3.

7.5.3 Determine the amount of loose peat in the bale using the 1-ft^3 measuring container and following the procedure in Method A. Measure and record the volume to the nearest 1 ft^3.

8. Report: Test Data Sheet(s)/Form(s)

8.1 The methodology used to specify how data are recorded on the test data sheet(s)/form(s), is given below, is covered in 1.4.

8.2 Record as a minimum the following general information (data):

8.2.1 Sample identification information, such as, description and manufacturer of the peat.

8.2.2 Any special selection and preparation process, specifically recording the amount of material retained by the ½-in. (12.5-mm) sieve.

8.2.3 Technician name or initials, method used (A or B), and date of testing.

8.3 Record as a minimum the following test specimen data:

8.3.1 The labeled quantity of the as-received sample.

8.3.2 Sample as-received condition: loose or baled.

8.3.3 The size of the measuring container used.

8.3.4 The measured volume of the sample for either method

8.3.5 The volume determined from measured dimensions for Method B.

8.3.6 The width, length, and height of the baled peat and any outside wrapper correction for Method B.

9. Precision and Bias

9.1 *Precision*—Test data on precision is not presented due to the nature of materials tested. It is either not feasible or too costly at this time to have ten or more laboratories participate in a round-robin testing program. Also, it is not feasible or too costly to produce multiple specimens that have uniform physical properties. Any variation observed in the data is just as likely to be due to specimen variation as to operator or laboratory testing variation.

9.1.1 Subcommittee D18.22 is seeking any data from the users of this test method that might be used to make a limited statement on precision.

9.2 *Bias*—There is no accepted reference value for this test method, therefore, bias cannot be determined.

10. Keywords

10.1 peat; volume; volume measurement

SUMMARY OF CHANGES

In accordance with Committee D18 policy, this section identifies the location of changes to this standard since the last edition (2003(2010)) that may impact the use of this standard.

(1) Added Practice D6026 to Section 2 on referenced documents.
(2) Updated footnotes dealing with responsible subcommittee.
(3) Added units definition to the Scope.
(4) Changed title from Method to Methods and re-organized the Procedure section to account for the two methods.
(5) Added Section 3 on terminology.
(6) Revised Section 8 to include items to record.