



Designation: D7047 – 23^{ε1}

Standard Test Method for Swell Volume of *Plantago Insularis* (Ovata, Psyllium)¹

This standard is issued under the fixed designation D7047; 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.

^{ε1} NOTE—Flask type in 9.1.1–9.1.3 was corrected editorially in November 2024.

1. Scope*

1.1 The purpose of this quantitative test method is to provide a means of determining the swell volume *plantago insularis* (Ovata, Psyllium).

1.2 The volume of swell reflects the amount of hydrophilic mucilloid present in psyllium. The higher the grade of psyllium the higher the swell volume, thus a greater percent of mucilloid present. For the erosion control industry, the higher the swell volume of the psyllium the greater it's bonding strength and relative performance.

1.3 *Units*—The values stated in SI units are to be regarded as the standard. No other units of measurement are included in this standard.

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

1.4.1 For purposes of comparing, a measured or calculated value(s) with specified limits, the measured or calculated value(s) shall be rounded to the nearest decimal or significant digits in the specified limits.

1.4.2 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 appro-*

priate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

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

[D1193 Specification for Reagent Water](#)

[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 and Data Records in Geotechnical Data](#)

[E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

3. Terminology

3.1 *Definitions:*

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

4. Summary of Test Method

4.1 Psyllium substrate is saturated with simulated intestinal fluid and the swell volume recorded after 24 h.

¹ This test method is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.25](#) on Erosion and Sediment Control Technology.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. 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