



Designation: D5779 – 08

# Standard Test Method for Field Determination of Apparent Specific Gravity of Rock and Manmade Materials for Erosion Control<sup>1</sup>

This standard is issued under the fixed designation D5779; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope\*

1.1 This test method covers the determination of the specific gravity of rock or man-made materials for erosion control.

1.2 This is a field test method to measure apparent specific gravity. For laboratory determination of bulk specific gravity see Test Method [D6473](#).

1.3 *Units*—The values stated in SI units are to be regarded as the standard. The inch-pound units in parentheses are given for information only.

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

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:*<sup>2</sup>

[C670](#) Practice for Preparing Precision and Bias Statements for Test Methods for Construction Materials

[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

[D4753](#) Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

[D4992](#) Practice for Evaluation of Rock to be Used for Erosion Control

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

[D6473](#) Test Method For Specific Gravity And Absorption of Rock For Erosion Control

## 3. Terminology

3.1 *Definitions:* For definitions specific to this standard refer to Terminology [D653](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *field apparent specific gravity*—the ratio of the mass in air of a unit volume of impermeable rock or man-made material, to the mass of an equal volume of water. This is similar to the definition of apparent specific gravity in Terminology [D653](#) except that non-distilled water is used for the test and the test can be run under a variety of temperatures.

## 4. Summary of Test Method

4.1 A specimen (block, chunk, slab, or piece) of rock or manmade material is weighed in air and then weighed again while immersed in water. Using the masses, the field specific gravity is calculated. The determined specific gravity can then be used to determine a mass per unit volume.

## 5. Significance and Use

5.1 Specific gravity is one factor used to determine the required mass of individual particles used as gabion-fill, riprap, armor stone, breakwater stone, or other types of rock products used for erosion control applications, and acceptability of these materials for their intended use.

NOTE 1—The agency performing this test method can be evaluated in accordance with Practice [D3740](#). Notwithstanding statements on precision and bias contained in this test method: The precision of this test method 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. Users of this test method are cautioned that compliance with [D3740](#) does not in itself ensure reliable testing. Reliable testing depends on many factors; Practice [D3740](#) provides a means of evaluating some of those factors.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee [D18](#) on Soil and Rock and is the direct responsibility of Subcommittee [D18.17](#) on Rock for Erosion Control.

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<sup>2</sup> 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.