



Standard Test Method for Water Absorption of Slate¹

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This standard has been approved for use by agencies of the Department of Defense.

INTRODUCTION

It is often desirable to gain some idea of the porosity of a material in question. Actual determinations of the pore space require the use of rather elaborate and refined equipment as well as considerable precision in carrying out the tests. For comparative purposes the absorption test affords a simple and sufficiently accurate means of obtaining the desired information. As applied to slate this test requires somewhat more care and precision than many other materials because of its dense nature and, consequently, the small quantities to be dealt with. Furthermore, the cleavage of slate—that property which permits it to be split into thin sheets of uniform thickness—must be taken into consideration when this test is made. On this account misleading results are often obtained on cubical specimens due to accidental cleavage cracks in the specimens. The shapes of specimens and larger number of specimens recommended in the following procedure are intended to eliminate to a large extent the inconsistent results which may be obtained on this material.

1. Scope

1.1 This test method covers the determination of the water absorption of slate.

1.2 *This standard does not purport to address the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

C 119 Terminology Relating to Dimension Stone²

3. Terminology

3.1 *Definitions*—All definitions are in accordance with Terminology C 119.

4. Significance and Use

4.1 This test method is useful in indicating the differences in water absorption of slates. This test method also provides one element in the comparison of slates.

5. Test Specimens

5.1 The test specimens shall consist of square or rectangular slabs from $\frac{3}{16}$ to $\frac{5}{16}$ in. (4.8 to 7.9 mm) in thickness and not less than 4 in. (101.6 mm) on any side.

5.2 Not less than six specimens shall be prepared from each sample of slate, the sample being considered as any number of pieces selected to represent a definite part or grade of the deposit.

6. Preparation of Specimens

6.1 Split the slate to the required thickness and saw to size. When the specimens are prepared from shingles no saw cut shall be nearer than 1 in. (25.4 mm) to the sheared edge of the shingle.

6.2 Free the specimens from loose particles by scrubbing with a fiber brush and clean water.

7. Procedure, Preferred Method

7.1 Dry the specimens for 48 h in a ventilated oven at a temperature of $60 \pm 2^\circ\text{C}$ ($140 \pm 4^\circ\text{F}$). At the 46th, 47th, and 48th hour, weigh the specimens to ensure that the weight is the same. If the weight continues to drop, continue to dry the specimens until there are three successive hourly readings with the same weight.

7.2 After drying, cool the specimens in the room for 15 min and then weigh. When the specimens cannot be weighed immediately after cooling, place them in a desiccator. Determine the weight to the nearest 0.01 g.

7.3 Entirely immerse the specimens in filtered or distilled

¹ This test method is under the jurisdiction of ASTM Committee C-18 on Dimension Stone and is the direct responsibility of Subcommittee C18.01 on Test Methods.

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² *Annual Book of ASTM Standards*, Vol 04.07.

