



Standard Specification for Slate Dimension Stone¹

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1. Scope

1.1 This specification covers the material characteristics, physical requirements, and sampling appropriate to the selection of slate for general building and structural purposes. Refer to Guides [C1242](#) and [C1528](#) for the appropriate selection and use of slate dimension stone.

1.2 Dimension slate shall include stone that is sawed, cut, split, or otherwise finished or shaped, and shall specifically exclude molded, cast, or otherwise artificially aggregated units composed of fragments, and also crushed and broken stone.

1.3 It specifically excludes roofing slate (see Specification [C406/C406M](#)) and slate for industrial uses.

1.4 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

[C119](#) Terminology Relating to Dimension Stone

[C120/C120M](#) Test Methods of Flexure Testing of Slate (Breaking Load, Modulus of Rupture, Modulus of Elasticity)

[C121/C121M](#) Test Method for Water Absorption of Slate

[C217/C217M](#) Test Method for Weather Resistance of Slate

[C241/C241M](#) Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

[C406/C406M](#) Specification for Roofing Slate

[C1242](#) Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems

¹ This specification is under the jurisdiction of ASTM Committee [C18](#) on Dimension Stone and is the direct responsibility of Subcommittee [C18.03](#) on Material Specifications.

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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.

[C1353](#) Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform, Double-Head Abraser

[C1528](#) Guide for Selection of Dimension Stone

3. Terminology

3.1 *Definitions*—All definitions are in accordance with Terminology [C119](#).

4. Classification

4.1 Dimension slate shall be selected for the following uses:

4.1.1 *I Exterior*:

4.1.2 *II Interior*.

5. Physical Requirements

5.1 Slate supplied under this specification shall conform to the requirements listed in [Table 1](#).

5.2 Slate used for exterior applications in ambient acidic atmospheres or in industrial areas where heavy air pollution occurs shall be free of carbonaceous ribbons. Slate shall be sound, durable, and free of spalls, cracks, open seams, pits, or other defects that are likely to impair its structural integrity in its intended use.

5.3 Slate shall be selected for overall satisfactory and natural appearance.

5.4 The desired color and texture, with their permissible natural variations in material characteristics for all material to be produced for the project, shall be established by control samples. Select representative samples by viewing a sufficient number of physical samples prior to production that show the complete range of variations in color and texture of the slate specified.

6. Sampling

6.1 Samples, if required, for testing to determine the characteristics and physical properties shall be representative of the slate to be used.

7. Keywords

7.1 acid resistance; carbonaceous ribbons; slate

TABLE 1 Physical Requirements

NOTE 1—The values in **Table 1** were established using samples prepared according to the individual test methods. Finishes, other than those specified in the individual test methods, may result in a deviation from established values.

Property	Test Requirements	Classifications		Test Method(s)
Absorption, max, %	0.25	I	Exterior	C121/C121M
	0.45	II	Interior	
Modulus of rupture, min, psi (MPa):				
Across grain	9000 [62]	I	Exterior	C120/C120M
	7200 [50]	II	Interior	
Along grain	7200 [50]	I	Exterior	C241/C241M/C1353
	5500 [38]	II	Interior	
Abrasion resistance, min, H ^{aA,B,C}	8.0	I	Exterior	C217/C217M
	8.0	II	Interior	
Acid resistance, max, in. [mm]	0.015 [0.38]	I	Exterior	C217/C217M
	0.025 [0.64]	II	Interior	

^A Pertains only to stone subject to foot traffic.

^B The supplier of the No. 60 Alundum abrasive, Norton, has indicated that the formula for Norton treatment 138S has been changed. The new abrasive is currently more aggressive, resulting in lower abrasive hardness values (H_a) than when the standard was initially established. As such, care should be taken when interpreting H_a values from tests using the new abrasive, particularly with regard to current ASTM stone standard specification requirements for abrasion resistance, which were developed when the original abrasive was still in use. Committee C18 is actively studying alternatives to address this issue.

^C Abrasion Resistance Test Method **C1353** will eventually replace Test Method **C241/C241M** and it is not necessary to perform both tests. Availability of the proper equipment and materials by the testing laboratory may determine which test is performed.

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