Designation: C 629 – 99

Standard Specification for Slate Dimension Stone[1]

This standard is issued under the fixed designation C 629; 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.

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

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.

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 C 406) and slate for industrial uses.

2. Referenced Documents

2.1 *ASTM Standards:*

C 119 Terminology Relating to Dimension Stone[2]

C 120 Methods of Flexure Testing of Slate (Modulus of Rupture, Modulus of Elasticity)[2]

C 121 Test Method for Water Absorption of Slate[2]

C 217 Test Method for Weather Resistance of Slate[2]

C 241 Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic[2]

C 406 Specification for Roofing Slate[2]

C 1353 Test Method Using the Taber Abraser for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic[2]

3. Terminology

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

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.

TABLE 1 Physical Requirements

Property	Test Requirements	Classifications	Test Method(s)
Absorption, max,%	0.25	I Exterior	C 121
	0.45	II Interior	
Modulus of rupture, min, psi (MPa):			
Across grain	9000 (62.1)	I Exterior	C 120
	7200 (49.6)	II Interior	
Along grain	7200 (49.6)	I Exterior	
	5500 (37.9)	II Interior	
Abrasion resistance,	8.0	I Exterior	C 241/C 1353
min, $H^{a,A,B,C}$	8.0	II Interior	
Acid resistance, max,	0.015 (0.38)	I Exterior	C 217
in. (mm)	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 currrently 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 C-18 is actively studying alternatives to address this issue.

[C] Abrasion Resistance Test Method C 1353 will eventually replace Test Method C 241 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.

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.

[1] This specification is under the jurisdiction of ASTM Committee C-18 on Dimension Stone and is the direct responsibility of Subcommittee C18.03 on Material Specifications.

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