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Standard Specification for Roofing Slate[1]

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[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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1. Scope

1.1 This specification covers the material characteristics, physical requirements, and sampling appropriate to the selection of slate for use as roof shingles.

1.2 Slates not included in this specification are those containing soft carbonaceous ribbons. The wide variation in physical properties and composition of such ribbon slates render their service life uncertain under some conditions of use.

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]

3. Terminology

3.1 *Definitions*—Definitions shall be in accordance with Terminology C 119.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *service life*—a period of time over which the slate material ~~may be~~ is expected to require no repair or replacement due to weathering.

3.2.2 *ribbons*—narrow bands of carbonaceous material, darker in color than the surrounding slate. These ribbons are inclusions of the original beds and are softer and less durable than the surrounding material.

4. Classification

4.1 Roofing slate shall be classified by grade in accordance with the physical requirements of Table 1.

4.2 Expected service life of the various grades, depending on geographic location and environmental exposure, is as follows:

Grade	Service Life (years)
Grade S_1	over 75
Grade S_2	40 to 75
Grade S_3	20 to 40

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

TABLE 1 Physical Requirements

Classification	Modulus of Rupture Across the Grain, min, psi (MPa)[A]	Absorption, max, %[B]	Depth of Softening, max, in. (mm)[C]
Grade S_1	9000 (62)	0.25	0.002 (0.05)
Grade S_2	9000 (62)	0.36	0.008 (0.20)
Grade S_3	9000 (62)	0.45	0.014 (0.36)

[A] See Methods C 120.
[B] See Test Method C 121.
[C] See Test Method C 217.

5. Ordering Information

5.1 *Color*—The following color nomenclature is commonly used:

Black	Mottled purple and green
Blue black	Green
Gray	Purple variegated
Blue gray	Red
Purple	Weathering green (changes to buff or brown)

5.2 *Standard Roofs*—Sloping roofs utilizing a nominal thickness of 3⁄16 to ¼ in. (4.8 to 6.4 mm), are known as standard roofs. These shingles shall be rectangular unless otherwise specified. These shingles shall be machine punched or drilled for two nails located for proper headlap.

5.3 *Textural Roofs*—Sloping roofs utilizing various sizes, thicknesses, textures, and colors for architectural effects, are known as textural roofs. These shingles shall be machine punched or drilled for two nails located for proper headlap.

5.4 *Graduated Roofs*—Sloping roofs utilizing a greater range of sizes, thicknesses, and exposed lengths of shingles, are known as graduated roofs. The slates are arranged on the roof so that the thickest and longest occur at the eaves and gradually diminish in size and thickness toward the ridges. These shingles shall be machine punched or drilled for two nails located for proper headlap.

6. Physical Requirements

6.1 Slate supplied under this specification shall conform to the physical requirements listed in Table 1.

6.2 ~~B~~Slates with broken corners on the exposed ends ~~of slates may~~ shall not be ~~considered cause for rejection~~ installed when either the base or leg of the right triangular piece broken off is greater than 1½ in. (38.1 mm). Slates with broken corners are acceptable for cutting stock.

6.3 The curvature of shingles shall not exceed ⅛ in. in 12 in. (1 mm in 100 mm). Curved slate shall be sheared and punched to permit it to be laid with the convex side up.

6.4 “Knots” and “knurls” are rounded defects, which affect the smoothness of split. They ~~may be~~ are acceptable on the exposed portion of the top face but on other parts ~~may~~ will prevent close contact of shingles. Shingles having knots or knurls on the covered portions ~~may be rejected if the protuberance projects more than~~ projecting in excess of 1⁄16 in. (1.6 mm) ~~beyond the split surface.~~ shall not be used, if they prevent proper fit and contact.

6.5 Slate shall be free from ribbons.

6.6 Not more than 1 % of broken slates, including those having cracks materially precluding ringing when sounded, shall be accepted.

6.7 Face dimensions shall not differ from those specified by more than ⅛ in. (3.2 mm).

7. Sampling

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