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Standard Specification for Roofing Slate[1]

This standard is issued under the fixed designation C406/C406M; 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.

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.

1.3 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.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C119 Terminology Relating to Dimension Stone
C120/C120M Test Methods for Flexure Testing of Structural and Roofing Slate
C121/C121M Test Method for Water Absorption of Slate
C217/C217M Test Methods for Weather Resistance of Slate

3. Terminology

3.1 *Definitions*—Definitions shall be in accordance with Terminology C119.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *service life*—a period of time over which the slate material 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.

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[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.

4. Classification

4.1 Roofing slate shall be classified by grade in accordance with the physical requirements of Table 1, with the classification limited to the test specimen thickness, or greater thickness, as determined under Test Methods C120/C120M.

4.2 When comparing slates of the same grade and equal thickness, but from various sources, slates which meet the required breaking load at the lowest specimen thickness will yield the best performance on the roof in terms of resistance to impact damage.

4.3 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

5. Ordering Information

5.1 *Color*—The commercial color specified should be preceded by the words "unfading" or "semi-weathering" or "weathering" to indicate the allowable change in the original slate color, over time, upon exposure on the roof.

5.2 *Standard Roofs*—Sloping roofs utilizing a nominal thickness of ¼ in. [6 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 the required headlap and installation methods.

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 the required headlap and installation methods.

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 the required headlap and installation methods.

6. Physical Requirements

6.1 Slate supplied under this specification shall conform to the physical requirements listed in Table 1 ~~and be no thinner than the thickness of the average of the test samples reported under Test Methods C120/C120M~~.

6.2 Slate shall be of an average thickness equal to or greater than the average thickness of the test samples provided under Test Methods C120/C120M.

6.3 Slates with broken corners on the exposed ends shall not be installed when either the base or leg of the right triangular piece broken off is greater than 1½ in. [40 mm]. Slates with broken corners are acceptable for cutting stock.

6.4 The curvature of shingles shall not exceed ⅛ in. in 12 in. [3 mm in 300 mm]. Curved slate shall be sheared and punched to permit it to be laid with the convex side up.

TABLE 1 Physical Requirements

Classification	Breaking Load, min lbf(or N)[A]	Absorption, max, %[B]	Depth of Softening, max, in. (mm)[C]
Grade S_1	575 [2560]	0.25	0.002 [0.05]
Grade S_2	575 [2560]	0.36	0.008 [0.20]
Grade S_3	575 [2560]	0.45	0.014 [0.36]

[A] See Test Methods C120/C120M.
[B] See Test Method C121/C121M.
[C] See Test Method C217/C217M.