



# Standard Specification for Roofing Slate<sup>1</sup>

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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<sup>2</sup>

C 120 Methods of Flexure Testing of Slate (Modulus of Rupture, Modulus of Elasticity)<sup>2</sup>

C 121 Test Method for Water Absorption of Slate<sup>2</sup>

C 217 Test Method for Weather Resistance of Slate<sup>2</sup>

## 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 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:

TABLE 1 Physical Requirements

| Classification       | Modulus of Rupture Across the Grain, min, psi (MPa) <sup>A</sup> | Absorption, max, % <sup>B</sup> | Depth of Softening, max, in. (mm) <sup>C</sup> |
|----------------------|------------------------------------------------------------------|---------------------------------|------------------------------------------------|
| Grade S <sub>1</sub> | 9000 (62)                                                        | 0.25                            | 0.002 (0.05)                                   |
| Grade S <sub>2</sub> | 9000 (62)                                                        | 0.36                            | 0.008 (0.20)                                   |
| Grade S <sub>3</sub> | 9000 (62)                                                        | 0.45                            | 0.014 (0.36)                                   |

<sup>A</sup> See Methods C 120.

<sup>B</sup> See Test Method C 121.

<sup>C</sup> See Test Method C 217.

| Grade                | Service Life (years) |
|----------------------|----------------------|
| Grade S <sub>1</sub> | over 75              |
| Grade S <sub>2</sub> | 40 to 75             |
| Grade S <sub>3</sub> | 20 to 40             |

## 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  $\frac{3}{16}$  to  $\frac{1}{4}$  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 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  $1\frac{1}{2}$  in. (38.1 mm). Slates with

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.07.