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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Smooth-Surfaced Asphalt Roll Roofing (Organic Felt)¹

This standard is issued under the fixed designation D 224; 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 asphalt roofing in sheet form, composed of organic roofing felt, saturated with asphalt and coated on both sides with an asphaltic compound which may or may not contain mineral stabilizer, and surfaced with powdered talc, mica, or other fine mineral matter to prevent sticking.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- D 146 Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing²
- D 228 Test Methods for Asphalt Roll Roofing, Cap Sheets, and Shingles²
- D 1079 Terminology Relating to Roofing, Waterproofing, and Bituminous Materials²
- E 96 Test Methods for Water Vapor Transmission of Materials³

3. Terminology

3.1 *Definitions*—For definitions of terms used in this specification, refer to Terminology D 1079.

4. Classification

4.1 *Type I*—Minimum net mass per unit area of roofing, 39.8 lb/100 ft² (1943 g/m²).

4.2 *Type II*—Minimum net mass per unit area of roofing, 54.6 lb/100 ft² (2666 g/m²).

4.3 *Type III*—Minimum net mass per unit area of roofing, 51.1 lb/100 ft² (2495 g/m²).

4.4 *Type IV*—Minimum net mass per unit area of roofing, 39.8 lb/100 ft² (1943 g/m²).

¹ This specification is under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.02 on Prepared Roofings, Shingles, and Siding Materials.

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² *Annual Book of ASTM Standards*, Vol 04.04.

³ *Annual Book of ASTM Standards*, Vol 04.06.

5. Materials and Manufacture

5.1 In the process of manufacture, a single thickness of dry organic felt shall be impregnated with an asphaltic saturant, then coated on both sides with asphaltic coating which may be compounded with a fine mineral stabilizer substantially insoluble in water, and finally surfaced on one side with fine mineral matter to prevent sticking in the roll.

5.2 The felt shall be roofing felt primarily composed of organic fibers. The surface of the felt shall be uniformly smooth. Upon splitting or tearing on the bias, the felt shall appear reasonably free of lumps or particles of foreign substances.

6. Physical Requirements

6.1 The fabricated product shall conform to the requirements prescribed in Table 1.

6.2 *Pliability at 77°F (25°C)*—At least eight strips out of ten shall not crack when tested in accordance with Section 16 of Test Methods D 228.

6.3 *Behavior on Heating to 176°F (80°C) for 2 h*—There shall be not more than 1.5 % volatile loss; and there shall be no flowing, sagging, blistering, or absorption of the asphalt coating when tested in accordance with Section 18 of Test Methods D 228.

6.4 Upon being unrolled, the finished product shall not crack at ambient temperatures above 50°F (10°C) nor be so sticky at any temperature below 140°F (60°C) as to cause tearing or material damage.

7. Dimensions, Masses, and Permissible Variations

7.1 *Width*—The roofing shall be put up in rolls and shall be 36 in. (914 mm) wide or other widths as agreed upon by the buyer and the seller \pm 0.7 %.

7.2 *Area*—The average area of the rolls examined shall contain not less than 108 or 216 ft² (10.0 or 20.1 m²) as specified, which shall be sufficient to cover 100 or 200 ft² (9.3 or 18.6 m²) respectively, of the roof surface.

7.3 *Mass*—The roofing shall conform to the masses prescribed in Table 2.

8. Workmanship, Finish, and Appearance

8.1 The felt shall be completely and uniformly saturated, and shall show no unsaturated spots at any point upon cutting 2-in. (51-mm) wide strips at random across the entire sheet and splitting them open for their full length.