Designation: D 2626 – 97b

Standard Specification for Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing[1]

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

1. Scope

1.1 This specification covers asphalt-saturated and coated organic felt base sheet with mineral surfacing on the top side, with or without perforations, for use as the first ply of a built-up roof. When not perforated this sheet is suitable for use as a vapor retarder, with a solid mopping of asphaltic material, under roof insulation or between multiple layers of roof insulation.

1.2 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards:*

D 146 Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing[2]

D 226 Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing[2]

D 228 Test Methods for Asphalt Roll Roofing, Cap Sheets, and Shingles[2]

D 1079 Terminology Relating to Roofing, Waterproofing, and Bituminous Materials[2]

E 96 Test Methods for Water Vapor Transmission of Materials[3]

3. Terminology

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

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *lot—for the purpose of sampling*, a lot shall consist of all material of the same type and size offered for delivery at one time.

4. Materials and Manufacture

4.1 In the process of manufacture, a single thickness of dry organic felt shall be saturated with hot asphalt, coated on both sides with a hot asphaltic material, and surfaced on the top side with mineral surfacing.

4.2 The felt shall be produced principally from organic fibers, or mixtures thereof. The surface of the felt shall be uniform and relatively smooth. Upon splitting or tearing on the bias, the felt shall appear reasonably free of lumps and particles of foreign substances.

4.3 The coating shall be a hot-applied asphalt material permitted to be compounded with a mineral stabilizer.

4.4 The reverse side of the base sheet may be covered with a suitable material to prevent sticking in the roll.

5. Physical Properties

5.1 The material shall conform to the physical requirements prescribed in Table 1 and the dimensions and masses prescribed in Table 2 and Table 3. Perforated base sheets shall conform to the same requirements as the plain type but shall also have uniformly spaced perforations.

5.2 The finished product shall not crack nor be so sticky as to cause tearing or other damage upon being unrolled at temperatures between 50 and 140°F (10 and 60°C).

6. Dimensions, Mass, and Permissible Variations

6.1 The material shall conform to the dimensions and masses prescribed in Table 2.

6.2 Perforated material shall also conform to the dimensions and other requirements prescribed in Table 3.

7. Workmanship, Finish, and Appearance

7.1 The felt shall be thoroughly and uniformly saturated, and shall show no unsaturated spots at any point upon cutting 2-in. (50-mm) wide strips at random across the entire width of the sheet and splitting them open for their full length.

7.2 The coating shall be applied uniformly on both sides of the sheet in a continuous, unbroken film that extends to the edges of the sheet. The coating may be smooth or finely veined, but not coarsely veined.

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[1] This specification is under the jurisdiction of ASTM Committee D08 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.04 on Felts and Fabrics for Bituminous Roofing and Waterproofing.

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

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

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TABLE 1 Physical Requirements of Asphalt-Saturated and Coated Base Sheet

Pliability, number of failures, max	2
Behavior on heating	no flowing, sagging, blistering, or absorption of the coating
Average breaking strength, min, lbf/in. (kN/m) width:	
with fiber grain	35 (6.1)
across fiber grain	20 (3.5)
Water vapor permeance, at 73.4°F (23°C), max, grains/h·ft^2·in·Hg (ng/Pa·s·m^2)	0.3 (17)[A]

[A] Test nonperforated sheet only.

TABLE 2 Dimensions and Masses of Asphalt-Saturated and Coated Base Sheet

Width of roll, in. (mm)	36 (914) ± 0.7 %, or as agreed upon between purchaser and supplier
Area of roll	as agreed upon between purchaser and supplier
Net mass of base sheet, min, lb/100 ft^2(g/m^2)	37 (1806)
Moisture, max, mass %	2.0[A]
Mass of desaturated felt, min, lb/100 ft^2(g/m^2)	5.2 (253)
Thickness of desaturated felt, min, in. (mm)	0.025 (0.64)
Mass of asphalt saturant soluble in trichloroethylene min, lb/100 ft^2(g/m^2)[B]	7.2 (350)
Mass of coating and surfacing, min, lb/100 ft^2(g/m^2)	18.0 (878)
Mass per side of asphalt coating, exclusive of mineral stabilizer and surfacing, min, lb/100 ft^2 (g/m^2)	3.5 (170)
Mass percent of mineral matter passing a 212-µm (No. 70) sieve on the basis of the total mass of mineral-filled coating and mineral surfacing, max, %	60

[A] At time of manufacture. Products with higher moisture content at time of installation may cause hot materials to foam, creating interply voids that may result in blisters.

[B] The mass of the saturant shall be not less than 1.40 times the mass of the desaturated, dry felt.

TABLE 3 Dimensions and Other Requirements for Perforated Base Sheet

Diameter of holes, max, in. (mm)	0.25 (6.4)
Spacing of holes in each row, center to center, min, in. (mm)	4.5 (114)
Spacing between adjacent rows, center to center, min, in. (mm)	4.5 (114)
Number of number/ft^2(holes/m^2), min	1.3 (14)
Average venting area, min, % of total area	0.04

7.3 The mineral surfacing shall be applied uniformly over the entire surface of the top side of the sheet. If soap or other material is used on the reverse side of the sheet, the amount applied shall not be so great as to interfere with adhesion between the base sheet and plying cement. Coarse mica shall not be used on either surface.

7.4 The finished material shall be free of visible defects such as holes, ragged or untrue edges, breaks, cracks, tears, protuberances, and indentations, except for intentionally provided perforations and the associated protuberances.

8. Sampling and Test Methods

8.1 Sample the material and determine the properties enumerated in this specification in accordance with Test Methods D 228 unless otherwise indicated.

8.2 *Breaking Strength*—Test Methods D 146, Section 13.

8.3 *Water Vapor Permeance*—Test Methods E 96, Procedure B.

8.4 *Moisture Content*— Test Methods D 146, Section 12.

8.5 *Thickness of Desaturated Felt*—Test Methods D 146, Section 21.

8.6 For perforated base sheet, determine the average venting area in accordance with 8.2 of Specification D 226.

9. Inspection

9.1 *Inspection*—Inspection shall be in accordance with the requirements of this specification.

9.2 *Inspection Alternatives*—Alternative inspection requirements shall be determined by and as agreed upon between the purchaser and the supplier.

10. Rejection and Resubmittal

10.1 *Failure to Conform*—Failure to conform to any of the requirements as stated in this specification constitutes grounds for rejection.

10.2 *Rejection Redress*—The supplier shall have the right to inspect the rejected materials. The supplier and the purchaser shall agree to the quantity of rolls deemed unacceptable. The supplier shall then have the right to submit the same number of new rolls as replacement.

11. Packaging and Package Marking

11.1 Unless otherwise agreed upon between the supplier and purchaser, each product package shall be plainly marked with the supplier's name, the product brand, the ASTM designation, and type of bitumen if not evident in the label name of the product.

11.2 The rolls shall be securely wrapped or banded in a manner that completely encircles the roll and will prevent slipping or unrolling.

11.3 No roll shall contain more than two pieces, and no more than 3 % of the rolls in any lot shall contain two pieces. If a roll contains a manufacturing splice, the splice shall be clearly marked.

12. Keywords

12.1 asphalt saturated and coated; built-up roofs; first ply; organic felt

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