



# Standard Specification for Asphalt-Coated Glass-Fiber Venting Base Sheet Used in Roofing<sup>1</sup>

This standard is issued under the fixed designation D 4897; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This specification covers asphalt impregnated and coated glass fiber base sheet with mineral surfacing on the top side and coarse mineral granules on the bottom side for use as the first ply of a roofing membrane. These base sheets provide for the lateral release of pressure in roofing systems because they are not solidly attached and the coarse granular surface provides an open, porous channel in the horizontal plane beneath the membrane. The base sheets shall be permitted to be with or without perforations or embossings.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

## 2. Referenced Documents

### 2.1 ASTM Standards:

- D 146 Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics Used in Roofing and Waterproofing<sup>2</sup>
- D 228 Test Methods for Asphalt Roll Roofing, Cap Sheets, and Shingles<sup>2</sup>
- D 1079 Terminology Relating to Roofing, Waterproofing, and Bituminous Materials<sup>2</sup>

## 3. Terminology

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

## 4. Classification

4.1 *Type I*—Standard Asphalt-Coated Glass-Fiber Venting Base Sheet

4.2 *Type II*—Heavy-Duty Asphalt-Coated Glass-Fiber Venting Base Sheet

## 5. Materials and Manufacture

5.1 The mat shall be a thin porous sheet of uniformly

distributed glass fibers, with or without the addition of reinforcing strands, or glass yarns, which are bonded with a water-resistant resinous binder.

5.2 In the process of manufacture the glass mat is impregnated and coated on both sides with a hot asphaltic coating with or without a mineral stabilizer and surfaced on the bottom side with coarse mineral granules embedded in an asphaltic coating. The top side shall be surfaced with fine mineral surfacing.

5.3 The product shall be permitted to be embossed or unembossed on the bottom side. The product shall be permitted to contain holes designated for attachment with mopping asphalt.

## 6. Physical Requirements, Dimensions, and Masses

6.1 The material at the point of manufacture shall conform to the physical requirements in Table 1 and the dimensions and masses in Table 2.

6.2 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).

6.3 *Pliability at 77 ± 2°F (25 ± 1°C)*—At least eight out of ten strips shall not crack when tested in accordance with Test Methods D 228 except, for convenience, that the strips shall be conditioned in ambient conditions at 77 ± 2°F (25 ± 1°C) for at least 30 min prior to testing over a ¾-in. (19-mm) radius.

6.4 *Loss and Behavior on Heating*—There shall be no flowing, sagging, or blistering of the asphalt coating when tested in accordance with Test Methods D 228.

## 7. Workmanship, Finish, and Appearance

7.1 The glass mat shall be impregnated and shall show no white spots at any point.

7.2 The coating shall be applied to each side to the edges of the sheet. The coating must be smooth.

7.3 The top side shall be surfaced with mineral surfacing to prevent the roofing from sticking in the package.

7.4 The bottom side shall be surfaced with coarse mineral matter, at least 90 % retained on a 212- $\mu$ m (No. 70) sieve, embedded in the asphalt coating.

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

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.04 on Felts and Fabrics for Bituminous Roofing and Waterproofing.

Current edition approved Jan. 10, 1998. Published September 1998. Originally published as D 4897 – 89. Last previous edition D 4897 – 97a.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 04.04.

**TABLE 1 Physical Requirements**

	Type I	Type II
Breaking strength, min, at 77 ± 2°F (25 ± 1°C) lbf/in. (kN/m)—longitudinal and transverse	22 (3.9)	44 (7.7)
Diameter of spot-mopping holes, (when present) max, in. (mm)	1.0 (25)	1.0 (25)
Spacing of holes, center-to-center (when present) min, in. (mm)	2.0 (51)	2.0 (51)
max, in. (mm)	6.0 (152)	6.0 (152)

7.6 Embossing, when present, should be of such a character that it does not cause the product to be susceptible to handling damage.

## 8. Sampling and Test Methods

8.1 Sample the material and determine the properties enumerated in this specification in accordance with Test Methods D 146 and D 228.

## 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 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 base sheet; first ply; glass fiber; impregnated and coated; partially attached

**TABLE 2 Dimensions and Masses<sup>A</sup>**

	Type I	Type II
Width of roll, in. (mm)	914 (36) ± 0.7 % (or as agreed upon between buyer and seller)	914 (36) ± 0.7 %
Area of roll, min, ft <sup>2</sup> (m <sup>2</sup> )	104 (9.64) (or as agreed upon between buyer and seller)	104 (9.64)
Mass of any roofing in shipment min, lb/100 ft <sup>2</sup> (g/m <sup>2</sup> )	50 (2440)	55 (2685)
Mass of desaturated glass mat min, lb/100 ft <sup>2</sup> (g/m <sup>2</sup> )	1.5 (73)	1.7 (83)
Mass of asphalt, min, lb/100 ft <sup>2</sup> (gm/m <sup>2</sup> )	10 (488)	12 (586)
Mass of total unstabilized coating, filler and top surfacing min, lb/100 ft <sup>2</sup> (g/m <sup>2</sup> )	20.0 (977)	22.0 (1075)
Mass of mineral granules retained on a 212-µm (No. 70) sieve min, lb/100 ft <sup>2</sup> (g/m <sup>2</sup> )	8.0 (391)	8.0 (391)
Mass of mineral matter passing a 212-µm (No. 70) sieve on basis of total mass of mineral stabilized coating and top surface mineral matter, max, %	60	60
Ash (grass mat only), %	70–88	70–88
Moisture at point of manufacture, max, %	1.0	1.0

<sup>A</sup> Types cannot be differentiated after installation and must be tested for compliance to the specification prior to application.

*The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428.*