



Standard Practice for Sampling and Analysis of New Built-Up Roof Membranes¹

This standard is issued under the fixed designation D 3617; 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.

^{ε1} NOTE—Section 8 was added editorially in July 1994.

1. Scope

1.1 This practice is a guide for removing specimens from new built-up bituminous roof membranes prior to the application of flood coating and top surfacing, for determining the *approximate* quantities of the components and the possible presence of moisture, or dry spots between plies, in the field. Components may consist of:

- 1.1.1 Insulation, when part of the roof membrane system,
- 1.1.2 Plies of roofing felt,
- 1.1.3 Interply layers of bituminous material, and
- 1.1.4 Top coating, if present, before any surfacing aggregate has been applied.

1.2 The values stated in SI (metric) units are to be regarded as the standard.

2. Referenced Documents

2.1 ASTM Standards:

- D 226 Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing²
- D 227 Specification for Coal-Tar Saturated Organic Felt Used in Roofing and Waterproofing²
- D 250 Specification for Asphalt-Saturated Asbestos Felt Used in Roofing and Waterproofing²
- D 2178 Specification for Asphalt Glass Felt Used in Roofing and Waterproofing²
- D 2626 Specification for Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing²
- D 3158 Specification for Asphalt-Saturated and Coated Organic Felt Used in Roofing³
- D 3378 Specification for Asphalt-Saturated and Coated Asbestos Felt Base Sheet Used in Roofing³

3. Sampling

3.1 Unless otherwise specified, take at least one specimen for each separate roof, plus one for each 929 m² (10 000 ft²); take specimens at random.

¹ This practice is under the jurisdiction of ASTM Committee D-8 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.20 on Nonstructural Roof Systems.

Current edition approved Aug. 9, 1983. Published November 1983. Originally published as D 3617-77. Last previous edition D 3617-77.

² Annual Book of ASTM Standards, Vol 04.04.

³ Discontinued—See 1984 Annual Book of ASTM Standards, Vol 04.04.

3.2 Take additional specimens where deficiencies are indicated in the membrane, to determine the extent of the deficient area.

4. Test Specimen

4.1 Sweep the surface of the membrane clean where each test specimen will be taken.

4.2 For determining approximate quantities of components, cut a 300 by 300-mm (12 by 12-in.) specimen from the membrane, using a template (Fig. 1).

4.2.1 If the membrane is adhered to the insulation, remove the membrane with the adhering insulation.

4.2.2 If the membrane is adhered directly to the roof deck, estimate the quantity of bitumen remaining on the deck after the specimen is removed.

4.3 For the purpose of determining the felt spacing, cut a 100 by 1000-mm (4 by 40-in.) rectangular specimen from the membrane, using a template (Fig. 1) placed at right angles to the long dimension of the felts.

4.4 Identify each specimen by location and record the presence of insulation or the estimated quantity of bitumen remaining on the deck.

4.5 If practicable, return the cut membrane specimen to its original location in the roof. Make adequate repairs to the roofing system, using at least the same number of felt plies as the original roof membrane after testing.

5. Procedure

5.1 Remove insulation fully from the 300 by 300-mm (12 by 12-in.) specimen, if present, being careful to remove as little bituminous material as possible, or leave the insulation in place and later use manufacturer's information to correct for its weight. Determine the area of the specimen from three different measurements in each direction, and weigh.

5.2 Measure the individual felts and calculate the area of each ply as in 5.1 (due to lapping, not all plies will be the same size as the original specimen).

5.3 Visually check along the sample edges for moisture within the membrane, and skips or dry spots between layers of felt.

5.4 Determine the number of plies and lap spacing by visual examination of the 100 by 1000-mm (4 by 40-in.) specimen, if lap spacing is desired.

6. Calculation (See Table 1 for Form and Sample