



Designation: D 2643 – 04

## Standard Specification for Prefabricated Asphalt Reservoir, Pond, Canal, and Ditch Liner (Exposed Type)<sup>1</sup>

This standard is issued under the fixed designation D 2643; 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.

### 1. Scope

1.1 This specification covers prefabricated asphalt liner sheets intended for installation in accordance with Practice **D 3745** to provide a continuous, exposed lining for reservoirs, ponds, canals, and ditches.

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

1.3 The following precautionary caveat pertains only to the test method portion, Section 8, of this specification: *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:*<sup>2</sup>

**D 994** Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)

**D 1079** Terminology Relating to Roofing, Waterproofing, and Bituminous Materials

**D 2172** Test Methods for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures

**D 3745** Practice for Installation of Prefabricated Asphalt Reservoir, Pond, Canal, and Ditch Liner (Exposed Type)

**E 154** Test Methods for Water Vapor Retarders Used in

Contact with Earth Under Concrete Slabs, on Walls, and as Ground Cover

### 3. Terminology

3.1 *Definitions*—Refer to Terminology **D 1079** for definitions of terms used in this specification.

### 4. Materials and Manufacture

4.1 The liner sheets shall consist of layers of asphalt mastic between asphalt-saturated felts, mats, or fabrics, and shall be coated on both sides and covered with a material to prevent the finished sheets from sticking together during storage and shipment.

4.2 The mastic shall consist of asphalt, mineral fillers, and reinforcing fibers of any type.

4.3 The felts, mats, or fabrics shall be organic or glass fiber, and shall be impregnated with a hot asphaltic saturant.

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

4.5 The material or treatment applied to prevent the finished sheets from sticking together shall be such that it can be removed at the installation site, or its presence will not interfere with bonding of joint sealant.

### 5. Physical Requirements

5.1 The liner sheets shall conform to the requirements prescribed in **Table 1**.

### 6. Dimensions, Mass, and Permissible Variations

6.1 *Dimensions:*

6.1.1 *Thickness*— $12.7 \pm 1.52$  mm ( $0.500 \pm 0.060$  in.).

6.1.2 *Width*—915 or  $1220 \pm 6$  mm (36 or  $48 \pm \frac{1}{4}$  in.).

6.1.3 *Length*—2440, 3050, or  $3660 \pm 13$  mm (96, 120, or  $144 \pm \frac{1}{2}$  in.).

6.1.4 Other dimensions may be agreed upon between the purchaser and the supplier for liner sheets and batten or cover strips as part of the purchase contract.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

**TABLE 1 Physical Requirements of Asphalt Liner Sheets**

Water absorption, max, %	1.0
Mass percent of asphalt, min, %	65.0
Resistance to decay	no effect
Flexibility	no cracking or rupture
Brittleness	no cracking or shattering
Heat distortion	no bulging or mastic flow

6.2 *Density*—1150 kg/m<sup>3</sup> (72 lb/ft<sup>3</sup>) minimum at 25°C (77°F).

6.3 *Thickness of Asphalt Coating*—0.60 ± 0.20 mm (0.023 ± 0.008 in.).

NOTE 1—If glass mat or fabric is used for the facings, the asphalt coating thickness can not readily be determined and this requirement shall be waived.

## 7. Workmanship, Finish, and Appearance

7.1 Both surfaces of the liner sheets shall be uniform in finish and texture. The asphaltic coating shall be applied

uniformly to each side over the entire area and up to the edges of the sheet, and the material or treatment to prevent sticking shall be applied uniformly.

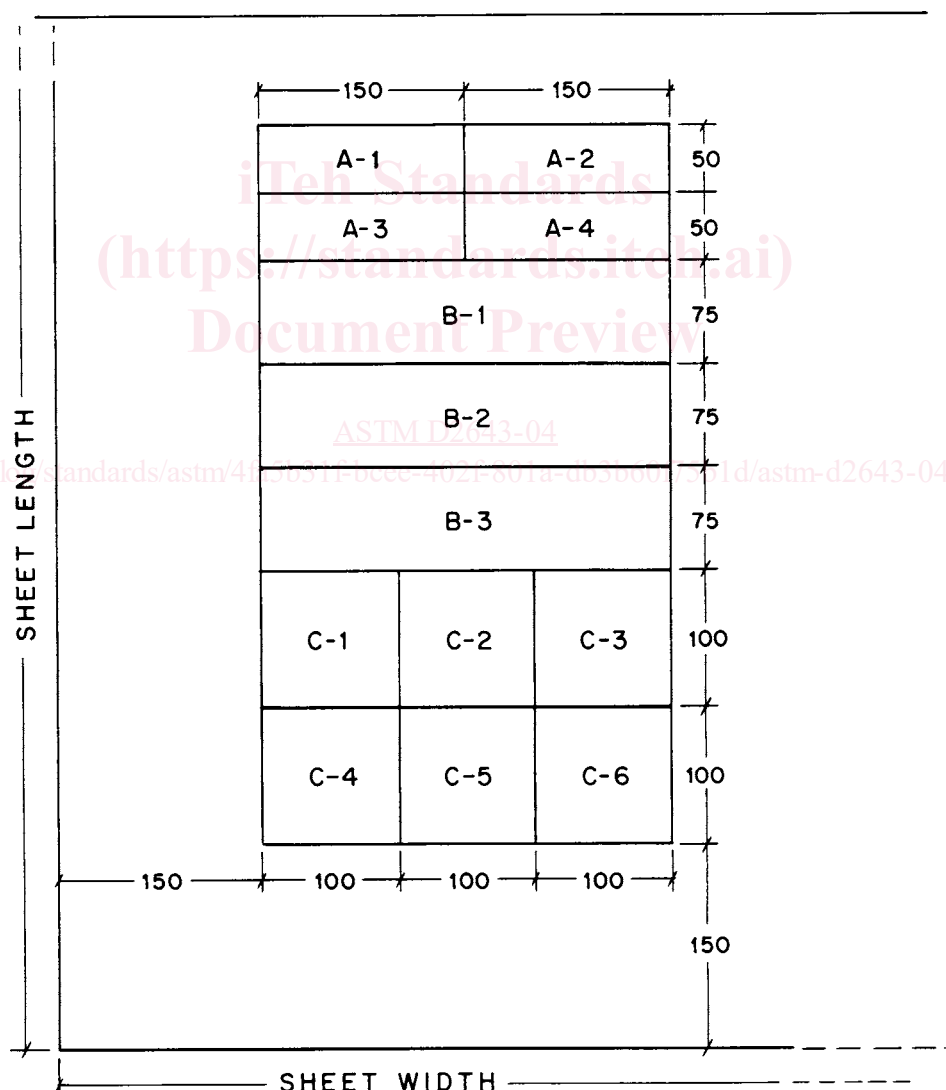
7.2 Upon cutting the liner sheets at any point and examining the cross section, there shall be no voids in the mastic or unsaturated spots in the felts, mats, or fabrics.

7.3 The liner sheets shall be free of visible defects such as holes, ragged or untrue edges, breaks, cracks, protuberances, and indentations.

## 8. Sampling and Test Methods

8.1 *Sampling*—Select one sheet at random from every 400 sheets or fraction thereof.

8.2 *Thickness*—Cut one test specimen 50 by 150 mm (2 by 6 in.) from each liner sheet in the sample as shown at A-1 in Fig. 1. Measure the thickness to the nearest 0.02 mm (0.001 in.) at four points about 13 mm (½ in.) in from the center of each edge; average the measurements and record as the thickness.



All dimensions in millimetres.

**FIG. 1 Location of Test Specimens in Each Sample Sheet**