



Standard Specification for Flexible Poly(Vinyl Chloride) Plastic Sheeting for Pond, Canal, and Reservoir Lining¹

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1. Scope

1.1 This specification covers flexible poly(vinyl chloride) plastic sheeting, 8 through 30 mils (0.20 to 0.76 mm) in thickness, for lining ponds, canals, and reservoirs.²

1.2 The tests used to characterize the sheeting are intended to ensure good workmanship and quality, and are not necessarily adequate for design purposes in view of the importance of environmental factors and specific performance objectives. Tests have been selected primarily with essentially neutral aqueous systems in mind. Other tests may be necessary to establish chemical resistance and durability under the conditions of a particular application.

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

2. Referenced Documents

2.1 ASTM Standards:

- D 374 Test Methods for Thickness of Solid Electrical Insulation³
- D 618 Methods of Conditioning Plastics and Electrical Insulating Materials for Testing⁴
- D 882 Test Methods for Tensile Properties of Thin Plastic Sheeting⁴
- D 1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting⁴
- D 1146 Test Method for Blocking Point of Potentially Adhesive Layers⁵
- D 1203 Test Methods for Volatile Loss from Plastics Using Activated Carbon Methods⁴
- D 1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperatures⁴
- D 1239 Test Method for Resistance of Plastic Films to Extraction by Chemicals⁴
- D 1755 Specification for Poly(Vinyl Chloride) Resins⁶
- D 1790 Test Method for Brittleness Temperature of Plastic Film by Impact⁶

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² For information on installation techniques, refer to ASAE Recommendation: ASAE R 340, *Installation of Flexible Membrane Linings*, American Society of Agricultural Engineers, St. Joseph, Mich. 49085.

³ *Annual Book of ASTM Standards*, Vol 10.01.

⁴ *Annual Book of ASTM Standards*, Vol 08.01.

⁵ *Annual Book of ASTM Standards*, Vol 15.06.

⁶ *Annual Book of ASTM Standards*, Vol 08.02.

D 1922 Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method⁶

3. Material and Manufacture

3.1 The sheeting shall be suitably formulated from a homopolymer vinyl chloride resin of Type GP in accordance with Specification D 1755 to impart durability. Use of water-soluble compounding ingredients is prohibited. Plasticizers that are resistant to migration, mildew, and bacterial degradation shall be used. The sheeting shall be pigmented to produce a uniform color.

3.2 The sheeting shall be capable of being heat-sealed or bonded to itself with liquid cement for making field splices and repairs, and the manufacturer or seller shall recommend or furnish sealing equipment or a cement suitable for this purpose. The cement shall have been proven durable when subjected to both sun and water exposure, and use of the cement shall not cause any appreciable stiffening of the sheeting.

4. Physical Requirements

4.1 The material shall conform to the properties prescribed in Table 1.

5. Dimensions

5.1 The width and length of the sheeting shall be as agreed upon by the purchaser and the seller as part of the purchase contract.

5.2 The thickness shall be as specified in the purchase contract, with a tolerance of $\pm 7\%$.

6. Workmanship and Appearance

6.1 When the width or length specified in the contract is such as to require piecing, the required size shall be fabricated from material widths of not less than 44 in. (1.1 m), except to meet final dimensions. The seams shall be factory-bonded using a liquid cement, a heat-sealing device, or other acceptable method. Lap seams of $\frac{1}{2}$ in. (12.7 mm) minimum width are required. The seams shall be water-tight, and the strength of the bonded seam in both the machine and transverse directions shall be not less than 80 percent of the breaking strength of the sheeting itself when tested in the same direction.

6.2 The sheeting shall have good appearance qualities. It shall be free of gels, streaks, particles of foreign matter, undispersed raw material, or other manufacturing defects that may affect its serviceability.

6.3 The sheeting shall be free of defects such as holes, tears, or blisters. The edges shall be free of nicks and cuts visible to the unaided eye.