



Standard Specification for Varnished Glass-Polyester Cloth Used for Electrical Insulation¹

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1. Scope

1.1 This specification applies to black and yellow varnished woven cloth and tape for electrical insulation, having as a base fabric poly(ethylene terephthalate) yarns in the warp direction and glass yarns in the filler direction.

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

2. Referenced Documents

2.1 *ASTM Standards*:²

D295 Test Methods for Varnished Cotton Fabrics Used for Electrical Insulation

D902 Test Methods for Flexible Resin-Coated Glass Fabrics and Glass Fabric Tapes Used for Electrical Insulation

D1711 Terminology Relating to Electrical Insulation

D3487 Specification for Mineral Insulating Oil Used in Electrical Apparatus

D3636 Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials

3. Terminology

3.1 *Definitions*: For definitions of terms used in this specification refer to Terminology D1711.

4. Ordering Information

4.1 Orders for material covered by this specification shall include the following:

- 4.1.1 Color: black or yellow,
- 4.1.2 Nominal thickness, width and length,
- 4.1.3 Type of surface: greasy or dry,
- 4.1.4 Core size and type,
- 4.1.5 Type of packing: dry or in oil,

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² 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.

4.1.6 Number of rolls per package, and

4.1.7 Marking on package.

5. Materials and Manufacture

5.1 *Materials*—The base fabric for all thickness and color styles shall have a nominal thickness of 0.004 in. (0.10 mm) and a warp by filler thread count per inch (or centimetre) of 32(12.6) by 28(11.0) respectively. The varnish shall be of the oleoresinous type. The warp threads shall consist of 140 denier continuous filament yarns having a twist of 5 turns per inch, and the filler threads shall consist of ECG-150-1/0 yarns.

5.2 *Splices*—The material shall not be spliced unless agreed upon by the purchaser and the manufacturer. If it is necessary to splice, splices shall not occur more than once in each roll of 100 yd (92 m) or less, except that rolls having a length of 6 yd (5.5 m) or less shall contain no splices. All splices shall be flagged in a manner suitable to the purchaser.

5.3 *Nonconformities*—The varnished fabric and tape shall be free from wrinkles, blisters, or any imperfections which will detract from its value as electrical insulation.

6. Electrical and Mechanical Requirements

6.1 The electrical and mechanical requirements shall be in accordance with the values shown in Table 1.

7. Oil Resistance

7.1 The varnish film shall show no evidence of blistering, or disintegration in the oil or on the blotter used in the test. The oil used in the test shall not become turbid.

NOTE 1—Slight swelling of the film in that portion of the material located between the yarns sometimes occurs, particularly with freshly coated goods. This is evidenced by a regularity in the spacing of the “blisters” and can be differentiated from true blistering, which occurs randomly spaced over the surface of the test specimens.

8. Dimensional Requirements

8.1 Thickness requirements shall be in accordance with the values shown in Table 2.

8.2 The nominal width shall be specified in the purchase order. Individual measurements on all samples selected shall not vary from the nominal width by more than $\pm 1/32$ in. (0.8