



Standard Specification for Woven Glass Fabrics for Electrical Insulation¹

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1. Scope

1.1 This specification applies to straight-cut (as opposed to bias-cut) plain weave greige (unfinished) glass fabric produced from continuous-filament yarns and suitable for use in the production of coated or treated fabric for electrical insulating purposes.

1.2 Excluded from this specification are woven glass fabric tapes and fabrics intended for use primarily in laminated constructions.

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

2. Referenced Documents

2.1 ASTM Standards:

- D 123 Terminology Relating to Textiles²
- D 578 Specification for Glass Fiber Strands²
- D 1711 Terminology Relating to Electrical Insulation³
- D 1777 Test Method for Thickness of Textile Materials²
- D 1931 Specification for Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation³
- D 3636 Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials⁴
- D 3773 Test Methods for Length of Woven Fabrics⁴
- D 3774 Test Methods for Width of Woven Fabrics⁴
- D 3775 Test Method for Fabric Count of Woven Fabric⁴
- D 3776 Test Methods for Mass per Unit Area (Weight) of Fabric⁴
- D 4029 Specification for Finished Woven Glass Fabrics⁴
- D 4963 Test Method for Ignition Loss of Glass Strands and Fabrics⁴
- D 5035 Test Method for Breaking Strength and Elongation of Textile Fabrics (Strip Method)⁴

3. Terminology

3.1 Definitions:

¹ This specification is under the jurisdiction of ASTM Committee D-9 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.07 on Flexible and Rigid Insulating Materials.

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² Annual Book of ASTM Standards, Vol 07.01.

³ Annual Book of ASTM Standards, Vol 10.01.

⁴ Annual Book of ASTM Standards, Vol 07.02.

3.1.1 Definitions employed herein are as indicated in Terminology D 123, except as further defined herein.

3.1.2 For definitions of terms relating to electrical insulation refer to Terminology D 1711.

4. Ordering Information

4.1 Orders for material covered by this specification shall include the width and length of each roll ordered.

5. Materials and Manufacture

5.1 *Construction and Mechanical Properties*—The fabrics shall meet the requirements of Table 1.

6. Composition

6.1 Yarns used in the preparation of these fabrics shall conform to the requirements for Types ECD, ECE, and ECG yarns as described in Specification D 578.

7. Dimensions, Weights, and Permissible Variations

7.1 *Width*—The width of the fabric, measured outside the selvage, shall not vary from that specified in the purchase agreement by more than ± 0.5 in. (± 13 mm).

7.2 Roll Length:

7.2.1 The measured length of a roll of fabric shall be within 10 % of the nominal length shown in Table 1 except that 10 % of the total length shipped may be on rolls of less than the standard roll length but in no case shall the length of such rolls be less than 30 % of the nominal lengths shown under Table 1.

7.2.2 The measured length of a roll shall be not less than 98 % of the length declared for each roll as shipped.

7.3 Sizing:

7.3.1 The fabric shall contain no lubricants or sizing other than those normally used in the weaving of greige fabric.

7.3.2 The average amount of sizing in the fabric shall not be more than 4.5 weight %, except for Styles 104 and 1610, where it shall not be more than 6.0 weight % when determined in accordance with the Organic Content section of Test Method D 4963.

NOTE 1—Experience indicates that where coated fabric must meet stringent wet dielectric strength requirements, as for example in Specification D 1931, a maximum size content of 2.6 weight % shall be required.

8. Workmanship, Finish, and Appearance

8.1 Determination of Nonconforming Rolls: