



# Standard Specification for Silicone Varnished Glass Cloth and Tape for Electrical Insulation<sup>1</sup>

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## 1. Scope

1.1 This specification covers clear silicone varnished glass fabrics in the form of sheets, rolls, and tapes for use as electrical insulation.

1.2 The product covered by this specification shall be designed to conform to Class 180 electrical insulating materials as classified by IEEE Standard No. 1.

1.3 The values stated in inch-pound units are to be regarded as the standard except temperature which is stated in degrees celsius.

## 2. Referenced Documents

### 2.1 ASTM Standards:

D 902 Test Methods for Flexible Resin-Coated Glass Fabrics and Glass Fabric Tapes Used for Electrical Insulation<sup>2</sup>

D 1711 Terminology Relating to Electrical Insulation<sup>2</sup>

D 1830 Test Method for Thermal Endurance of Flexible Sheet Materials Used for Electrical Insulation by the Curved Electrode Method<sup>2</sup>

D 3636 Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials<sup>3</sup>

### 2.2 IEEE Standard:<sup>4</sup>

No. 1 General Principles Upon Which Temperature Limits are Based in the Rating of Electric Machines and Other Equipment

## 3. Terminology

3.1 *Definitions:* For definitions of terms used in this standard, refer to Terminology D 1711.

## 4. Types

4.1 This specification covers two types of silicone varnished glass fabrics as follows:

4.1.1 *Type A*—For use where primarily electrical properties are required, and

4.1.2 *Type B*—For use where primarily physical properties are required.

## 5. Ordering Information

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

5.1.1 The form and type (Sections 1 and 4),

5.1.2 The desired nominal thickness, width, and length (Section 8),

5.1.3 The number of rolls in a package (Section 15), and

5.1.4 The marking on a package (Section 15).

## 6. Materials and Manufacture

6.1 The glass fabric shall be treated with a baking type of silicone varnish so as to penetrate the fabric and produce a smooth, non-tacky surface, substantially free of wrinkles, creases, blisters, and other imperfections.

6.2 The material shall not be spliced. No more than two pieces shall be used in each multiple of 25 yd (23 m) of linear length in any one roll of full-width cloth, and no more than two pieces shall be used in each multiple of 36 yd (33 m) of linear length in any one roll of type.

## 7. Physical Properties

7.1 *Breaking Strength*—The warp average breaking strength of the material in the warp thread direction shall be not less than that prescribed for the corresponding types and nominal thicknesses designated in Table 1.

## 8. Dimensional Requirements

8.1 *Thickness*—The average thickness shall not vary more than  $\pm 0.5$  mil (0.013 mm) from the nominal thicknesses for specified thicknesses up to and including 5 mils (0.13 mm), and  $\pm 10\%$  from the nominal thickness for specified thicknesses above 5 mils.

8.2 *Width*—Full-width rolls and sheets shall be  $36 \pm 1$  in. ( $900 \pm 25$  mm) in width, and shall be supplied trimmed unless otherwise specified. The width of individual tapes shall not vary more than  $\pm 1/32$  in. (0.8 mm) from the specified width for tapes  $1\frac{1}{2}$  in. (38 mm) or less in width, nor more than  $\pm 1/16$  in. (1.6 mm) for tapes over  $1\frac{1}{2}$  in. in width.

8.3 *Length*—The nominal length per roll shall be as specified in the purchase order. The measured lengths of individual

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 10.01.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 10.02.

<sup>4</sup> Available from The Institute of Electrical and Electronics Engineers, Inc., 345 E. 47th St., New York, NY 10017.