



Standard Specification for High-Temperature Glass Cloth Pressure-Sensitive Electrical Insulating Tape¹

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1. Scope

1.1 This specification covers requirements for high-temperature electrical insulating tape consisting of glass cloth coated on one side with a pressure-sensitive adhesive.

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

2. Referenced Documents

2.1 ASTM Standards:

D 1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications²

D 1711 Terminology Relating to Electrical Insulation²

3. Terminology

3.1 *Definitions*—For definitions of terms in this specification refer to Terminology D 1711.

4. Classification

4.1 This specification covers two types of glass cloth tapes, as follows:

4.1.1 *Type I*—Woven glass cloth with silicone adhesive.

4.1.1.1 *Grade A*—0.18 mm (0.007 in.).

4.1.1.2 *Grade B*—0.25 mm (0.010 in.).

4.1.2 *Type II*—Woven glass cloth impregnated with polytetrafluoroethylene, silicone adhesive, nominal thickness 0.13 mm (0.005 in.).

5. Materials and Manufacture

5.1 The tape backing shall consist of woven glass fibers.

5.2 The silicone pressure-sensitive adhesive coating shall be smooth and uniform and as free from lumps and bare spots as best commercial practice will permit. The adhesive shall not transfer when the tape is unwound from the roll.

6. Requirements

6.1 All tapes shall meet the requirements given in Table 1 for the types specified.

7. Standard Rolls

7.1 The standard widths and lengths shall be selected from the following:

7.1.1 Widths:

| mm | in. | mm | in. |
|----|-----|----|-----|
| 6 | ¼ | 22 | 7/8 |
| 9 | 3/8 | 25 | 1 |
| 12 | ½ | 30 | 1¼ |
| 15 | 5/8 | 38 | 1½ |
| 19 | ¾ | 50 | 2 |

Widths greater than 2 in. (50 mm) shall be agreed upon between the purchaser and the seller.

7.1.2 Lengths:

| m | ft |
|----|-----|
| 6 | 20 |
| 20 | 66 |
| 33 | 108 |

7.1.3 Nonstandard widths and lengths are permissible if agreed upon between the purchaser and seller.

8. Test Methods

8.1 The selection of rolls, conditioning, and testing shall be in accordance with Test Methods D 1000.

9. Rejection

9.1 If the test results of any roll do not conform to the requirements prescribed in the specification, two additional rolls shall be selected and tested. If one of the two additional sample rolls also does not conform to the requirements, the lot may be rejected at the option of the purchaser.

10. Packaging and Package Marking

10.1 *Packaging*—The packaging shall withstand shipment and shall give the product ample protection against damage. The individual rolls shall not adhere to each other or to the container.

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² *Annual Book of ASTM Standards*, Vol 10.01.

TABLE 1 Detail Requirements

| Requirement | Type I | | Type II |
|--|---------------------------------|--------------------------------|---------------------------------|
| | Grade A | Grade B | |
| Total thickness, nominal, mm (in.) | 0.18 ± 0.025 (0.007 ± 0.001) | 0.25 ± 0.025 (0.10 ± 0.001) | 0.13 ± 0.025 (0.005 ± 0.001) |
| Width, as specified, mm (in.) | ±0.8 (±1/32) | ±0.8 (±1/32) | ±0.8 (±1/32) |
| Length, as specified | -1% | -1% | -1% |
| Breaking strength, min, avg N/10 mm (lbf/in.) | 216 (120) | 216 (120) | 90.2 (50) |
| Dielectric breakdown, min, avg V | 2000 | 2500 | 3000 |
| Adhesion strength, min, N/10 mm (ozf/in.) avg, after dwell time on drum of 20 ± 5 min | | | |
| <i>Method B:</i> | | | |
| To steel | 2.8 (25) | 2.8 (25) | 2.2 (20) |
| To backing | 1.7 (15) | 1.7 (15) | no requirement |
| High-humidity insulation resistance, min, median, MΩ | 50 | 100 | 1000 |
| Unwind force, max, avg, N/10 mm (ozf/in.) width ^A | 11.0 (100) | 16.5 (150) | 11.0 (100) |
| Accelerated aging, effect of on dielectric breakdown, percent of original after 16 h at 250°C, min | 100 | 100 | 100 |
| Adhesion strength to backing, Method B, % of original after 168 h at 225°C, min | 100 | 100 | no requirement |

^A See Test Methods D 1000, Test Method B.

10.2 *Marking*—Each package shall be marked with the name of the manufacturer, the ASTM specification number and type, and the width and length of the rolls.

11. Keywords

11.1 electrical insulating tape; glass cloth pressure-sensitive tape; high temperature pressure-sensitive tape; pressure-sensitive adhesive tape

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