Designation: D 2301 – 99

An American National Standard

Standard Specification for Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape[1]

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1. Scope

1.1 This specification covers electrical insulating tape consisting of a flexible backing made from vinyl chloride plastic coated on one side with a pressure-sensitive adhesive.

1.2 The values stated in SI units are 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 Applications[2]

D 1711 Terminology Relating to Electrical Insulation[2]

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 as follows:

4.1.1 *Type I*—General-purpose tape, nominal thickness 0.18 mm (0.007 in.).

4.1.2 *Type II*—General-purpose tape, nominal thickness 0.25 mm (0.010 in.).

5. Materials and Manufacture

5.1 The backing shall be polyvinyl chloride plastic suitably compounded to meet the requirements of this specification. The backing shall be smooth and uniform. However, fish eyes shall not be cause for rejection. The tape edges shall be straight and unbroken.

5.2 The pressure-sensitive adhesive coating shall be smooth and uniform and as free from lumps and bare spots as the best commercial practice will permit. There shall be no adhesive transfer when the tape is unwound from the roll.

5.3 Black plastic backing shall be considered standard. Other colors, opaque or transparent, are acceptable when specified.

6. Requirements

6.1 The tape shall meet the requirements given in Table 1 for the type 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	⅞
9	⅜	25	1
12	½	30	1¼
15	⅝	38	1½
19	¾	50	2

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

7.1.2 *Lengths*:

m	ft
6	20
20	66
33	108

7.1.2.1 Lengths greater than 33 m (108 ft) shall be in multiples of 33 m. Additional lengths shall be 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 this specification, two additional rolls shall be selected and tested. If one of the two additional

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

TABLE 1 Requirements for Vinyl Chloride Plastic Electrical Tape

Requirements	Type I	Type II
Thickness, mm (in.) avg	0.178 ± 0.025 (0.0070 ± 0.0010)	0.254 ± 0.025 (0.0100 ± 0.0010)
Width, as specified, mm (in.)	±0.8 (±1/32)	±0.8 (±1/32)
Length, as specified, %	±1	±1
Breaking strength, min, N/10 mm (lbf/in.) avg	27 (15)	36 (20)
Elongation, min, % avg	125	150
Dielectric breakdown, min. V avg:		
(*a*) Standard condition	7000	9000
(*b*) Wet condition (96/23/96)[A]	90 % of original	90 % of original
Adhesion, min, N/10 mm (ozf/in.) avg:[B]		
(*a*) Steel	2.4 (22)	2.4 (22)
(*b*) Backing	2.0 (18)	2.0 (18)
High-humidity insulation resistance, min, MΩ median	2×10^4	2×10^4
Flagging, max, mm (in.) avg	2.5 (0.10)	2.5 (0.10)
Flammability, s burning time (max)	4	4

[A] See Test Methods D 1000.
[B] See Test Methods D 1000, Method A.

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 package 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.

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

11. Keywords

11.1 electrical insulating tape; plastic electrical tape; pressure-sensitive adhesive tape; vinyl chloride plastic tape