



Designation: **D 2484 – 9400**

An American National Standard

Standard Specification for Polyester Film Pressure-Sensitive Electrical Insulating Tape¹

This standard is issued under the fixed designation D 2484; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers electrical insulating tape consisting of a polyester plastic film coated on one side with a pressure-sensitive adhesive.

1.2 The values stated in inch-pound SI units are to be regarded as the standard. The values given in parenthesis are provided for information only.

NOTE 1—This standard and IEC 60454-3-2 and -3 are similar but not equivalent in all details.

2. Referenced Documents

2.1 *ASTM Standards:*

¹ This specification is under the jurisdiction of ASTM Committee D-09 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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D 1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications²
 D 1711 Terminology Relating to Electrical Insulation²
 D 2305 Test Methods for Polymeric Films Used for Electrical Insulation²

2.2 IEC Standard:

Publication 60454-3 Specifications for Pressure-Sensitive Adhesive Tapes for Electrical Purposes. Sheet 2: Requirements for Polyester Film Tapes (PETP) with Thermosetting Adhesive. Sheet 3: Requirements for Polyester Film Tapes (PETP) with Non-Thermosetting Adhesive³

3. Terminology

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

4. Classification

34.1 This specification includes the requirements for ~~five~~ four types as follows:

34.1.1 ~~Type 1~~ 1—General-purpose tape, nominal thickness ~~0.0025 in. (0.06 mm)~~ 0.06 mm (0.0025 in.) and coated with a thermoplastic adhesive which is not chemically heat reactive.

34.1.2 ~~Type 2~~ 2—General-purpose tape, nominal thickness ~~0.0025 in. (0.06 mm)~~ 0.06 mm (0.0025 in.) and coated with a heat-reactive thermosetting adhesive.

34.1.3 ~~Type 3~~ 3—General-purpose tape, nominal thickness ~~0.0035 in. (0.09 mm)~~ 0.09 mm (0.0035 in.) and coated with a heat-reactive thermosetting adhesive.

34.1.4 ~~Type 4~~ 4—General-purpose ~~thin~~ tape, nominal thickness ~~0.0010 in. (0.025 mm)~~ 0.025 mm (0.0010 in.) and coated with a heat-reactive thermosetting adhesive.

34.1.5 ~~Type 5~~ 5—Oil-resistant tape, nominal thickness ~~0.0025 in. (0.06 mm)~~ and coated with a heat-reactive oil-resistant thermosetting adhesive.

~~4.~~

5. Materials and Manufacture

45.1 The polymer used as the backing shall be clear polyethylene terephthalate sheet.

45.2 The pressure-sensitive adhesive coating shall be free from lumps and bare spots. There shall be no adhesive transfer when tape is unwound from the roll.

45.3 Both transparent and colored tapes are available.

45.3.1 ~~Type 1~~ 1—Transparent.

45.3.2 ~~Types 2, 3, and 4~~ 2, 3, and 4—Transparent and colors.

45.3.3 ~~Type 5~~ 5—Transparent.

~~5.~~

6. Standard Rolls

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

56.1.1 Widths:

in.	mm	in.	mm
$\frac{1}{4}$	<u>6 in.</u>		
$\frac{1}{4}$ mm	<u>in.</u>		
6	$\frac{7}{8}$–$\frac{1}{4}$	22	$\frac{7}{8}$
6	$\frac{1}{4}$	22	$\frac{7}{8}$
9	$\frac{3}{8}$	–9	4
$\frac{1}{2}$	1		25
$\frac{1}{2}$ 25	$\frac{1}{2}$		
42	$4\frac{1}{4}$–$\frac{1}{2}$	30	
12	$\frac{1}{2}$	30	
$\frac{5}{8}$	$1\frac{1}{4}$		
$\frac{5}{8}$ 30	$1\frac{1}{4}$		
45	$4\frac{1}{2}$–$\frac{5}{8}$	38	
15	$\frac{5}{8}$	38	
$\frac{3}{4}$	$1\frac{1}{2}$		
$\frac{3}{4}$ 38	$1\frac{1}{2}$		
49	$2\frac{3}{4}$	50	2
19	$\frac{3}{4}$	50	<u>2</u>

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

56.1.2 Lengths:

² Annual Book of ASTM Standards, Vol 10.01.

³ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

ft	m	33-ft
464	1408	
33	50	
480	108	
50	56	
246	164	
55	480	
66	180	
	216	

56.2 Non-standard widths and lengths are permissible if agreed upon between the purchaser and seller.

6. Requirements

6.1 The tape shall meet the requirements given in Table 1 and Table 2 for the type specified. seller.

7. Test Methods Requirements

7.1 The selection of rolls, conditioning, and testing tape shall be meet the requirements given in accordance with Test Methods D 1000, except as noted in Table Tables 1 and Table 2, and 2 for the type specified.

8. Rejection

8.1 If the test results Test Methods

8.1 The selection of any roll do not conform to the requirements prescribed in the specification, two additional rolls rolls, conditioning, and testing shall be in accordance with Test Methods D 1000, except as noted in Tables 1 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. 2.

9. Packaging and Package Marking

9.1 The packaging shall withstand shipment and shall give Rejection

9.1 If the product ample protection against damage. The individual rolls shall test results of any roll do not adhere conform to each other or to the container.

9.2 Each package requirements prescribed in the specification, two additional rolls shall be marked with the name selected and tested. If one of the manufacturer, two additional sample rolls also does not conform to the ASTM specification number, requirements, the type number, lot may be rejected at the thickness, option of the width, and the length on the roll. purchaser.

10. Packaging and Package Marking

10.1 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.

10.2 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.

TABLE 1 Requirements for all Types of Polyester Plastic Pressure-Sensitive Electrical Insulating Tapes

Requirement	Unit	Value	ASTM Method
Width as specified:	under 1/2 in. (12.7 mm)	in. (mm)	±1/64 (±0.4)
Width as specified:	under 1/2 in. mm (in.)		±1/64
1/2 in. (12.7 mm), and over	in. (mm)	±1/32 (±0.8)	D 1000
1/2 in.), and over	mm (in.)	±1/32	D 1000
Length as specified, min	ft avg (m avg)	216 minus 1 % (66 minus 1 %)	D 1000
Length as specified, min	m avg (ft avg)	66 minus 1 % (216 minus 1 %)	D 1000
Elongation	% avg	75 min	D 1000
Elongation	% avg	75 min	D 1000
Penetration	°C avg	200	D 1000
Penetration	°C avg	200	D 1000
High-humidity insulation resist-	MΩ, median	50 000 min	D 1000
ance (measure of corrosion)			
High-humidity insulation resistance (measure of corrosion)	MΩ, median	50 000 min	D 1000
Strain relief (shrinkage)	% max	3.5	D 2305 ^A
Strain relief (shrinkage)	% max	3.5	D 2305 ^A

^AThe temperature shall be maintained at 150 ± 2°C for at least 30 min and only lengthwise specimens shall be used.

TABLE 2 Specific Requirements for Polyester Plastic Pressure-Sensitive Electrical Insulating Tapes

Requirement	Type 1	Type 2	Type 3	Type 4	Type 5
Thickness, in. (mm) avg	0.0025 ± 0.0005 (0.060 ± 0.015)	0.0025 ± 0.0005 (0.060 ± 0.015)	0.0035 ± 0.0005 (0.090 ± 0.015)	0.0010 ± 0.0003 (0.025 ± 0.008)	(0.0025 ± 0.0005) (0.060 ± 0.015)
Thickness, in. (mm) avg	Thickness, mm (in.) avg	0.060 ± 0.015 (0.060 ± 0.015)	0.060 ± 0.015 (0.0025 ± 0.0005)	0.090 ± 0.015 (0.0035 ± 0.0005)	0.025 ± 0.008 (0.060 ± 0.015)
Breaking strength, min, lbf/in. (N/m) avg	20 (3.5)	20 (3.5)	35 (6.1)	10 (1.7)	20 (3.5)
Breaking strength, min, lbf/in. (N/m) avg	Breaking strength, N/m (lbf/in.) avg	3.5 (20)	3.5 (20)	6.1 (35)	1.7 (10)
Dielectric breakdown, min, V avg:					
—Standard condition	4500	4500	6000	3000	4500
—Standard condition	4500	4500	6000	3000	
—After immersion	4000	4000	5500	2500	4000
—After immersion	4000	4000	5500	2500	
Adhesion, min, ozf/in. (N/m) avg					
Adhesion, min, ozf/in. (N/m) avg	Adhesion, min, N/m (ozf/in.) avg				
—Steel	20 (219)	35 (383)	35 (383)	20 (219)	20 (219)
—Steel	219 (20)	383 (35)	383 (35)	219 (20)	
—Backing standard condition	15 (164)	15 (164)	15 (164)	10 (109)	15 (164)
—Backing standard condition	164 (15)	164 (15)	164 (15)	109 (10)	
—Backing after thermosetting ^A	...	35 (383)	35 (383)	35 (383)	30 (328)
—Backing after thermosetting ^A	...	383 (35)	383 (35)	383 (35)	30 (328)
Oil resistance, test fluid 1, 2, or 3 as specified, min, ozf/in. (N/m) avg					
—Adhesive to steel	...	...	...	...	20 (219)
—Adhesive to backing	...	...	...	...	10 (109)

^AThe tape shall be thermoset after application to the backing in accordance with the manufacturer's instructions.

11. Keywords

101.1 —electrical insulating tape; polyester film pressure-sensitive tape; pressure-sensitive adhesive tape

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