EPSON®
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LABELWORKS

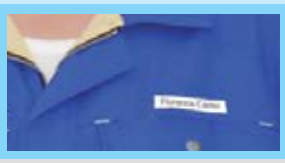
Technical Specifications for Label Materials

Revision C

Revision Notes

Revision C features additions to the test results for Vinyl (new), Heat Shrink Tube (material change), Vinyl Self laminating cable wrap (new), and Magnetic (material change). The additional test results have been added as a new table.

The applications currently envisioned for each label material have been summarized in the following table.

Label Materials / Recommended Application Segment	Image	Status	Home	Office	Industry
PET (Polyester) Standard Adhesive			✔	✔	✔
Vinyl		New	✔	✔	✔
PET (Polyester) Strong Adhesive					✔
Heat Shrink Tube		Update			✔
Vinyl Self Laminating Cable Wrap		New			✔
Magnetic		Update		✔	✔
Ribbon			✔		
Iron-On			✔		

Tape Features

Create a variety of labels with a wide selection of tape widths

Tapes are available in a range of sizes – from 4mm up to 50mm – to help you create labels for a variety of different applications.

A variety of tape and text colors to choose from

Tapes are available in a wide range of colors, both text and tape, as well as finishes, such as matte, metallic and clear.

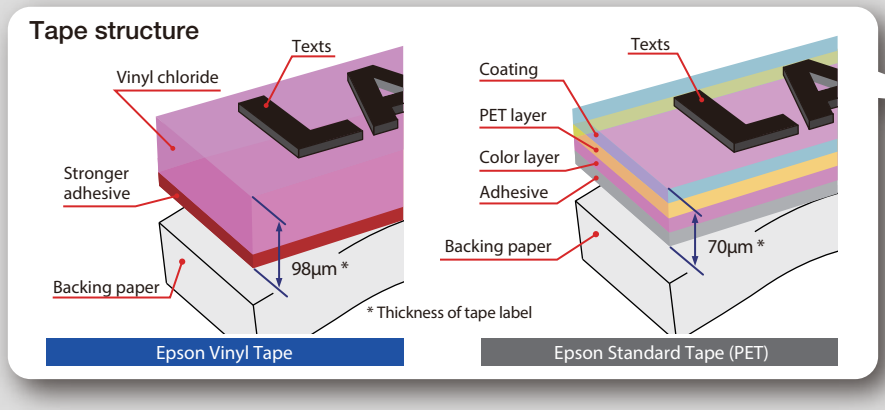
Different labeling needs, different labeling materials

Tapes are available in a variety of shapes and finishes that are suitable for a wide range of jobs in and around the office.

Tapes are designed to be as flexible and as durable as you need them to be, while also offering an environmentally-friendly alternative to other labels. Every label tape has a multi-layered structure for high durability, can be printed with reduced margins to help cut waste and is chlorine-free.

Structure of tapes Update

As Epson labels can be used for a variety of needs, tapes need to be highly durable to ensure they can do their job while at the same time, offer great flexibility. Through research, Epson discovered that traditional laminated finishes make labels too thick and result in labels that may be unsuitable for many applications. With this in mind, Epson developed a new label structure for its tape, which offers excellent durability and optimal thickness without relying on laminated finishes.



Thickness may vary between tapes.
Please refer to "Frequently Asked Questions"

Features of Tapes

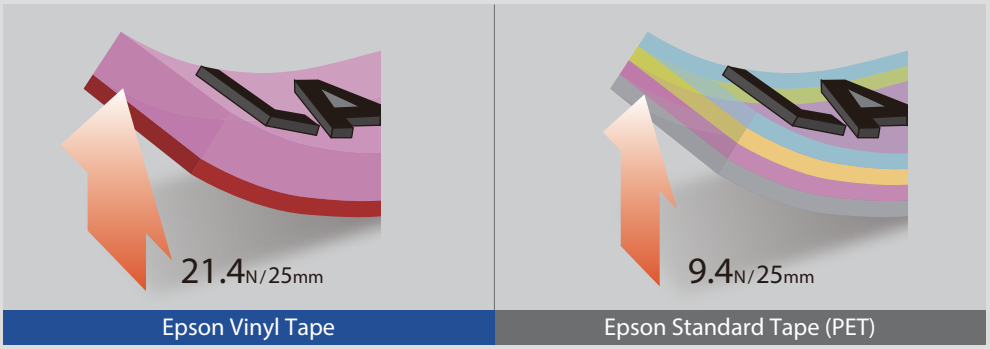
Characteristics of Vinyl Tape New

Vinyl tape has excellent elasticity and weather resistance for outdoor use, with a high level of adhesiveness. Testing equipment for outdoor durability determined that this product will last for 12 years. The adhesive strength is equivalent to that of PET (Polyester) Strong Adhesive.

✔ Superb weather resistance, suitable for labeling on outdoor machinery, etc.

✔ Elastic properties make it wrinkle resistant, even when applied to multi-faceted surfaces

✔ UL standard vinyl tape has twice the peel force of PET tape, and remains clean even after the label has been removed



*Refer to the Technical Data Sheet for UL acquisition information on other materials.

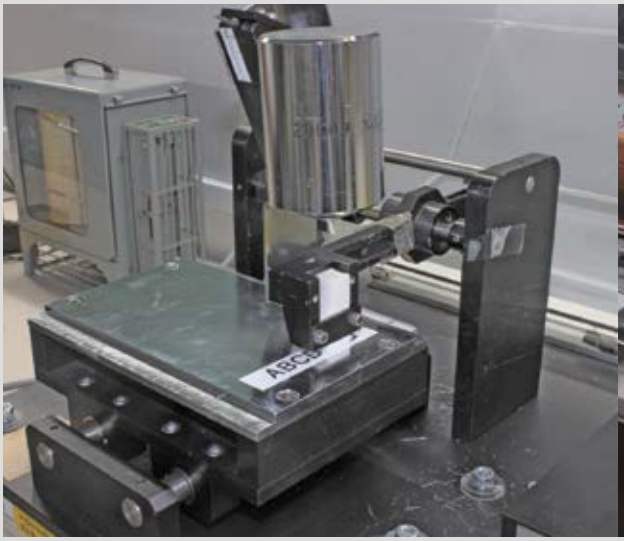
✔ Phthalic acid free, RoHS compliant, and environmentally friendly

Testing LabelWorks Tapes

To ensure that Epson label materials are suitable for a variety of environments, they are put under rigorous evaluation tests, both by Epson and an independent third-party. You will find each of these tests detailed on the pages that follow.

Test results in this manual

Results shown in this manual are based on tests conducted by Epson and an independent third-party.



High and Low Temperature Resistance

First temperature test

Tests were conducted to confirm the condition of each tape material when exposed to various temperatures. Tape materials were applied to a stainless-steel sheet or stainless-steel rod left in an environment with a high temperature, low temperature, and thermal-shocks. The results are shown in the table below.

First temperature test results

Tape	-70°C/72h	-30°C/72h	0°C/240h	50°C/240h	100°C/240h	150°C/2h	200°C/2h	225°C/2h	250°C/2h	-30°C/60°C each at 3h 20 cycles
PET (Polyester) Standard Adhesive	✔	✔	✔	✔	✔	✔	▲	▲	▲	✔
PET (Polyester) Strong Adhesive	✔	✔	✔	✔	✔	✔	▲	▲	▲	✔
Heat resistant	✔	✔	✔	✔	✔	✔	✔	✔	▲	✔
Heat shrink tube (After shrinking)	✔	✔	✔	✔	✔	✔	▲	▲	▲	✔
PET Self laminating cable wrap** (After laminating)	✔	✔	✔	✔	✔	✔	▲	▲	▲	✔
Magnetic	✔	✔	✔	✔	✔	✔	×	×	×	✔

✔: No noticeable change
▲: Text is legible but there is some tape discoloration
×: Text became unreadable or had serious tape discoloration
__: Under evaluation

Before test	After test	
	Temperature: 100 °C Duration: 240 Hours	Temperature: 200°C Duration: 2 hours
Labels: PET (Polyester) Standard Adhesive	Labels: PET (Polyester) Standard Adhesive	Labels: PET (Polyester) Standard Adhesive
		
	Temperature: 100 °C Duration: 240 Hours	Temperature: 200°C Duration: 2 hours
Labels: Heat resistant	Labels: Heat resistant	Labels: Heat resistant
		
	Temperature: 100 °C Duration: 240 Hours	Temperature: 200°C Duration: 2 hours
Labels: Heat shrink tube	Labels: Heat shrink tube	Labels: Heat shrink tube
		
	Temperature: 100 °C Duration: 240 Hours	Temperature: 200°C Duration: 2 hours
Labels: Magnetic	Labels: Magnetic	Labels: Magnetic
		

*The tests noted above were conducted by an independent third-party in Japan named Farstar Corporation
http://www.farstar.co.jp (Japanese version only) Address: 6531-26 Sasaga, Matsumoto, Nagano, 399-0033 Japan
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**PET Self Laminating tape has been replaced by vinyl self laminating tape. Test results published in update section

High and low temperature resistance

Additional label materials test results Update

Tape	-40°C/100h	90°C/100h	130°C/100h	130°C/1000h	180°C/24h	260°C/5min
Vinyl	✔	✔	✔	▲	×	×
Heat Shrink Tube	✔	✔	✔	▲	▲	▲
Vinyl Self Laminating Cable Wrap	✔	✔	▲	×	×	×
Magnetic	✔	✔	✔	×	▲	×

✔: No noticeable change
▲: Text is legible but there is some tape discoloration
×: Text became unreadable or had serious tape discoloration
—: Under evaluation

Before test

Labels: Vinyl

Labels: Heat shrink tube

Labels: Vinyl self laminating cable wrap

Labels: Magnetic

After test

Labels: Vinyl
Temperature: 130°C
Duration: 1,000 hours

Labels: Heat shrink tube
Temperature: 130°C
Duration: 1,000 hours

Labels: Vinyl self laminating cable wrap
Temperature: 130°C
Duration: 1,000 hours

Labels: Magnetic
Temperature: 130°C
Duration: 1,000 hours

Labels: Vinyl
Temperature: 180°C
Duration: 24 hours

Labels: Heat shrink tube
Temperature: 180°C
Duration: 24 hours

Labels: Vinyl self laminating cable wrap
Temperature: 180°C
Duration: 24 hours

Labels: Magnetic
Temperature: 180°C
Duration: 24 hours

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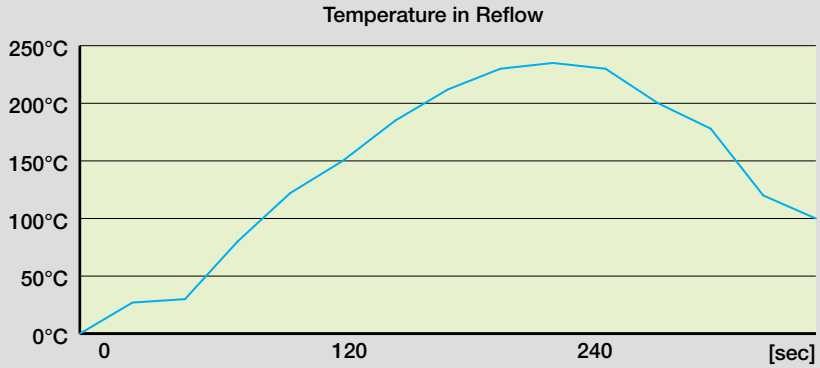
High and Low Temperature Resistance

Labels exposed to high temperatures for long periods can be prone to shrinkage, which can be a problem for important warning labels. Epson's heat-resistant tapes are designed not to shrink, even when exposed to temperatures of 200°C for up to 10 hours.

Second temperature test

Tests were conducted to confirm the shrinkage of each tape at high temperature. Tapes were mounted onto an electronic circuit board and then placed into a reflow oven. To ensure accurate results, the reflow oven temperature was adjusted for lead-free solder (Pb-free solder) and then slowly increased. You can see the results below, comparing a standard label to a heat resistant label.



Second temperature test results

Labels: PET (Polyester) Standard Adhesive

Labels: Heat resistant

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Adhesion Properties

Adhesive test

First adhesive test – surface materials and texture

Tests were conducted to confirm the adhesive strength of a PET (Polyester) Standard Adhesive tape when applied to various materials. 12mm-wide adhesive tapes were applied to seven different materials which each had a smooth surface and a textured surface. Labels were then left at room temperature (20°C to 25°C) for two weeks and then evaluated for peeling. The results are shown in the table below.

Second adhesive test – strength

Tests were conducted to confirm the adhesive strength of a PET (Polyester) Standard Adhesive tape and a PET (Polyester) Strong Adhesive tape after application. This second test consisted of applying 12mm-wide adhesive tapes to six different materials at room temperature, and peeling at a 180° angle – first 20 minutes after application and then a second test 96 hours after application.

Adhesive test results

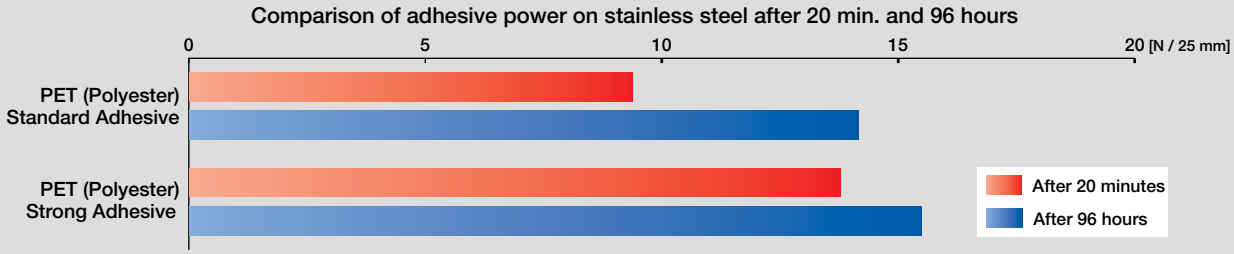
Test 1

	PE		PP		POM		PS		PA		PC		ABS	
	Smooth	Textured	Smooth	Textured	Smooth	Textured	Smooth	Textured	Smooth	Textured	Smooth	Textured	Smooth	Textured
PET (Polyester) Standard Adhesive	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

✔: No separation/peeling

PE: Polyethylene
PP: Polypropylene
POM: Polyoxymethylene
PS: Polystyrene
PA: Polyamide
PC: Polycarbonate
ABS: Acrylonitrile butadiene styrene

Test 2



Measurements 96 hours after application (Testing method conforms to JIS Z 0237, however, the duration of application is 96H)

	Stainless steel	Glass	Vinyl chloride	Acrylic	Polypropylene	Wood veneer with polyester-treated surface
PET (Polyester) Standard Adhesive	14.14	18.68	20.02	13.00	0.78	0.55
PET (Polyester) Strong Adhesive	15.48	17.69	21.27	17.21	2.11	0.54

Results in Newton (JIS norm)
For reference, The power to peel off the general cellophane tape attached on stainless plate is 9.83 N.

The above results do not represent guaranteed values.
Adhesive power varies between label products.
If label is removed and then reattached, label will lose some of its original adhesiveness.

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Curved surface adhesion properties

Curved surface adhesive test

Tests were conducted to confirm the adhesive strength of a PET (Polyester) Standard Adhesive tape when applied to a curved surface. Adhesive tapes were applied to a stainless steel bar (8mm in diameter) and a vinyl chloride bar (3mm in diameter). Labels were applied in three different ways (outlined below) and left at room temperature (20°C to 25°C) for two weeks and then evaluated for peeling. The results are shown in the table below.

Curved surface adhesive test results Update

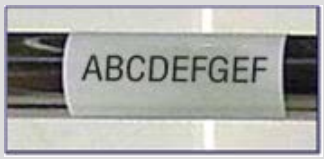
	8mm diameter stainless-steel bar			3mm diameter vinyl chloride bar	
	Flag	Wrapping	Round bar	Flag	Wrapping
PET (Polyester) Standard Adhesive	✔	✔	✔	✔	✔

✔: No separation/peeling

Flag label:
Label is completely wrapped around cable/pipe with a 5mm overlap.

Wrapping label:
Label is completely wrapped around cable/pipe with a 5mm overlap.

Straight label:
Label is applied straight across stainless steel bar with no overlapping.



	Rounded, curved surfaces	Flexible cables
Vinyl	✔	✔

✔: No separation/peeling

Rounded, curved surfaces:
Label can be applied to rounded surfaces such as this without wrinkling.

PET tape has some wrinkling

Vinyl tape has no wrinkling

Flexible cables:
After winding onto a cable, wrinkle does not occur even if the cable is bent.


PET tape has wrinkling


Vinyl tape has less wrinkling

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Water Resistance

Water resistance test

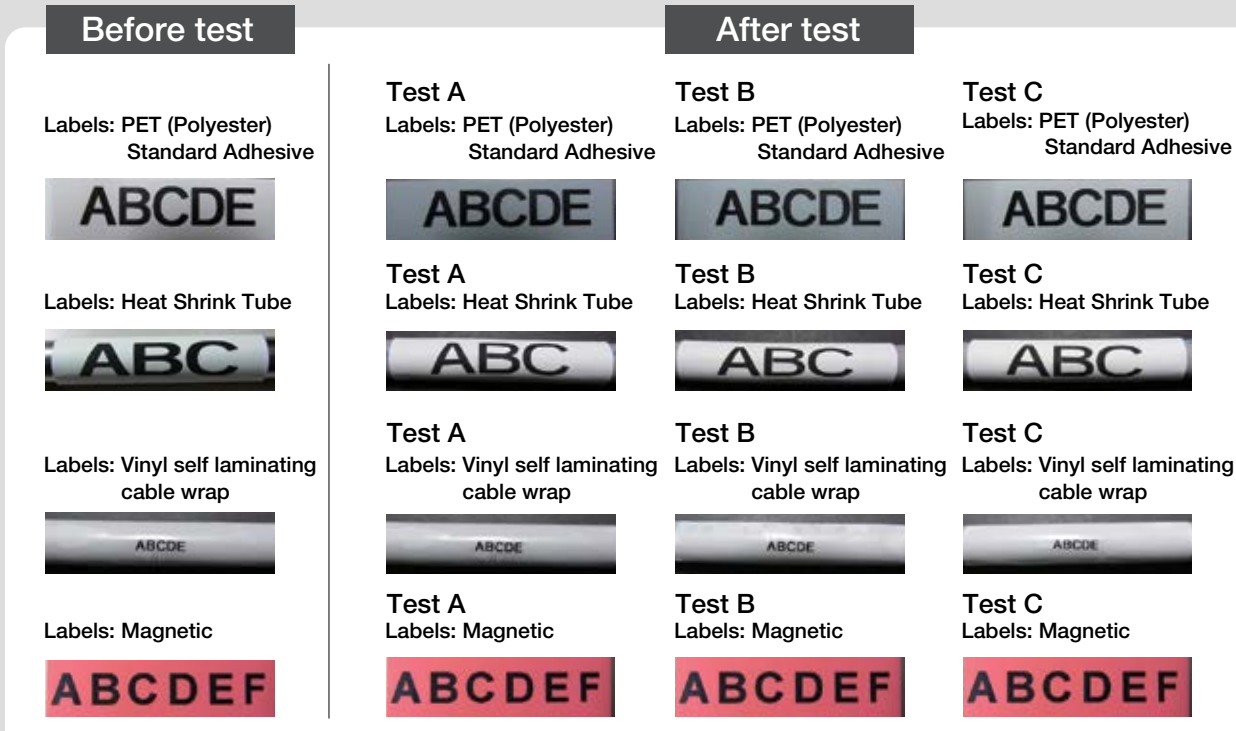
Tests were conducted to confirm the durability of tape materials when exposed to water. Tape materials were applied to a stainless-steel sheet or actual cable and left in the following environments:

Test A) Submerged in distilled water and left at 40°C for two hours
Test B) Submerged in saltwater (5%) and left at 40°C for two hours
Test C) Exposed to a humid atmosphere (80%) and left at 40°C for 96 hours

Water resistance test results

	Test A	Test B	Test C
PET (Polyester) Standard Adhesive	✔	✔	✔
PET (Polyester) Strong Adhesive	✔	✔	✔
Heat resistant	✔	✔	✔
Heat shrink tube (After shrinking)	✔	✔	✔
Vinyl Self laminating cable wrap (After laminating)	✔	✔	✔
Magnetic	✔	✔	✔

✔: No abnormalities in text



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Water Resistance

Additional label materials test results Update

Test environment

With 1 to 3 below as one cycle, repeat for approximately 100 to 700 hours.

1. 5% salt water 35°C for 2 hours
2. Dry 60°C around 20-30% for 4 hours
3. Humid 50°C 95% or more for 2 hours

	100h	400h	700h
Vinyl	✔	✔	✔
Heat shrink tube	✔	✔	✔
Vinyl self laminating cable wrap	✔	✔	✔
Magnetic	✔	✔	✔

✔: No noticeable change

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Chemical Resistance

Chemical immersion test

Tests were conducted to confirm the durability of tape materials when immersed in various chemicals and solvents. Tape materials were applied to a glass sheet or glass rod, and immersed in eight different chemicals and solvents for two hours.

Chemical immersion test results

	Toluene	Hexane	Ethanol	Acetone	Mineral spirits	0.1 N Hydrochloric acid	0.1 N Sodium hydroxide	Ethyl acetate	Engine oil
PET (Polyester) Standard Adhesive	✔	✔	✔	✔	✔	✔	✔	✕	✔
Heat shrink tube (After shrinking)	▲	▲	✔	✔	▲	✔	✔	▲	✔
PET Self laminating cable wrap** (After laminating)	✕	✔	✔	✕	✔	✔	✔	✕	✔
Magnetic	✕	✔	✔	✕	✕	✔	✔	✕	✔

✔: No noticeable change in tape or tube
▲: Text is legible but the shrink tube came away from the round glass rod
✕: Deformation/Peeling of tape or shrink tube erasure of text

Before test	After test
Labels: PET (Polyester) standard adhesive 	Labels: PET (Polyester) standard adhesive Chemical: Ethanol Duration: 2 hours 
Labels: Heat shrink tube 	Labels: Heat shrink tube Chemical: Ethanol Duration: 2 hours 
Labels: PET Self laminating cable wrap** 	Labels: PET Self laminating cable wrap** Chemical: Ethanol Duration: 2 hours 
Labels: Magnetic 	Labels: Magnetic Chemical: Ethanol Duration: 2 hours 

Printed text on the tape may be affected if rubbed.

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**PET Self Laminating tape has been replaced by vinyl self laminating tape. Test results published in update section

Chemical Resistance

Results of chemical resistance testing Update

	Toluene	Hexane	Ethanol	Acetone	Mineral spirits	0.1 N Hydrochloric acid	0.1 N Sodium hydroxide	Ethyl acetate	Engine oil
Vinyl	✕*	✔	✔	✕	✔	✔	✔	✕	✔
Heat Shrink Tube	✕	✔	✔	✔	✕	✔	✔	✕	✔
Vinyl Self Laminating Cable Wrap	✕	✔	✔	✕	✔	✔	✔	✕*	✔
Magnetic	✕	✕	✔	✕	✕	✔	✔	✕*	✔

✔ : No noticeable change in tape or tube
▲ : Tape warping
✕ : Tape peeling
✕*: Partial peeling of letters

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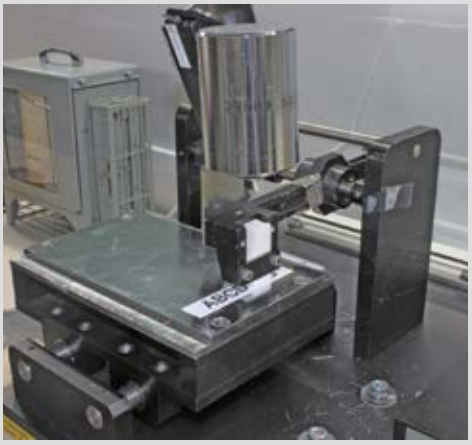
Abrasion Resistance

Abrasion test



First abrasion test – plastic eraser

Tests were conducted to confirm the durability of tape materials when rubbed with a plastic eraser. Tape materials were rubbed 50 times with a 2kg weight attached to a machine, at a 90° angle.

Second abrasion test – copper coin

Tests were conducted to confirm the durability of tape materials when rubbed with a copper coin. Tape materials were rubbed 50 times with a 500g weight by hand, at a 45° angle.

	First abrasion test (Plastic eraser)	Second abrasion test (Copper coin)
PET (Polyester) Standard Adhesive	✔	▲
Heat shrink tube (After shrinking)	✔	▲
PET Self laminating cable wrap** (After laminating)	✔	✔
Magnetic	✔	✔

✔: No abnormalities in text
▲: Slight removal of text (still legible)

Abrasion test results

Before tests

Labels: PET (Polyester) Standard Adhesive

Labels: Heat Shrink Tube

Labels: PET Self laminating cable wrap**

Labels: Magnetic

After tests

First test
Labels: PET (Polyester) Standard Adhesive

First test
Labels: Heat Shrink Tube

First test
Labels: PET Self laminating cable wrap**

First test
Labels: Magnetic

Second test
Labels: PET (Polyester) Standard Adhesive

Second test
Labels: Heat Shrink Tube

Second test
Labels: PET Self laminating cable wrap**

Second test
Labels: Magnetic

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**PET Self Laminating tape has been replaced by vinyl self laminating tape.

Abrasion Resistance

Abrasion test

Third abrasion test – chemical and solvents

Tests were conducted to confirm the durability of tape materials when rubbed with various cloths soaked in different chemicals and solvents. Tape materials were rubbed 10 or 50 times with a cloth soaked with 4cc of a chosen chemical or solvent, attached to a machine with a 500g weight.

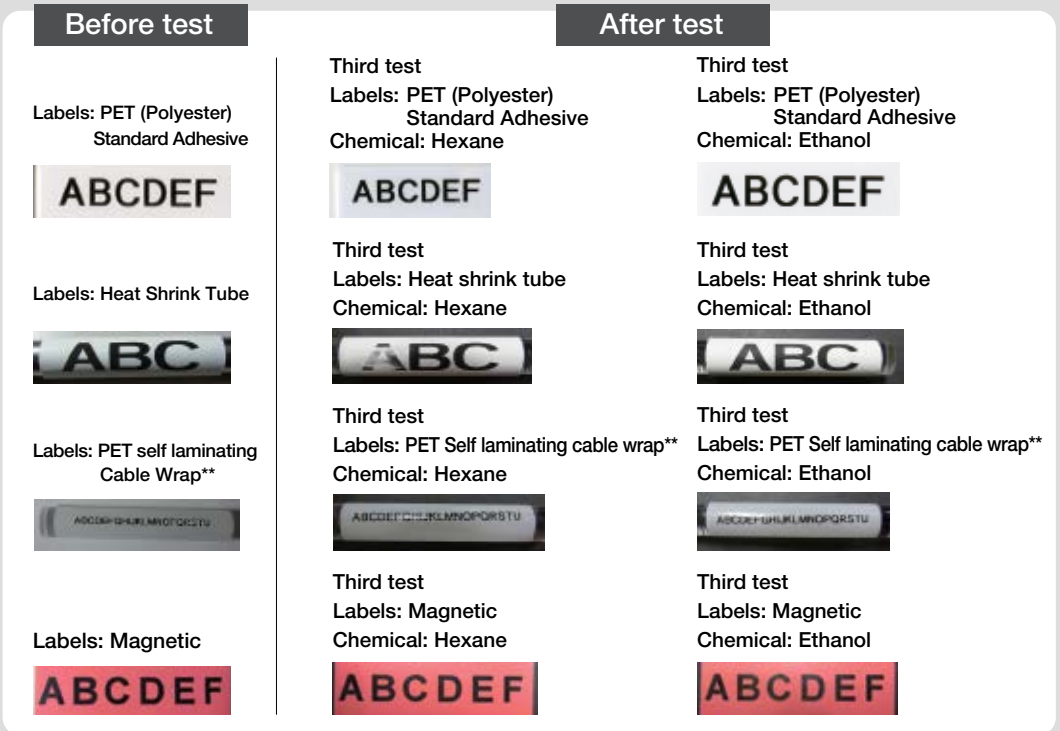
	Toluene	Hexane	Ethanol	Acetone	Mineral spirits	0.1 N Hydrochloric acid	0.1 N Sodium hydroxide	Ethyl acetate	Engine oil	Parts cleaner
PET (Polyester) Standard Adhesive	✕	✔	✔	✕	✔	✔	✔	✕	✔	✔
PET Self laminating cable wrap** (After laminating)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Magnetic	✕	✔	✔	✕	✔	✔	✔	✕	✔	✔

✔: No abnormalities in text after 50 rubbing times
✕: Erasure of text less than 50 rubbing times

	Toluene	Hexane	Ethanol	Acetone	Mineral spirits	0.1 N Hydrochloric acid	0.1 N Sodium hydroxide	Ethyl acetate	Engine oil	Parts cleaner
Heat shrink tube (After shrinking)	✕	✔	✔	✕	✕	✔	✔	✕	✔	✔

✔: No abnormalities in text after 10 rubbing times
✕: Erasure of text less than 10 rubbing times

Abrasion test results



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**PET Self Laminating tape has been replaced by vinyl self laminating tape. Test results published in update section

Weather resistance

Weather resistance test

Tests were conducted to confirm the durability of tape materials when exposed to outdoor conditions.
Tape materials were applied to a stainless-steel sheet or stainless-steel rod left in weather resistance testing machine for acceleration weather resistance test.

55 hours acceleration weather resistance test by weather resistance testing machine is equivalent to out door weather resistance test in an average environment in Japan for 1 year.
110 hours acceleration weather resistance test by weather resistance testing machine is equivalent to outdoor weather resistance test in an average environment in Japan for 2 years.

Heat shrink tube: Shrunk on round stainless-steel rod
PET Self laminating cable wrap: put and laminated on round stainless-steel rod

	1 Y in outdoor	2 Y in outdoor
PET (Polyester) Standard Adhesive	✔	✔
Heat shrink tube (After shrinking)	✔	✔
PET Self laminating cable wrap** (After laminating)	✔	▲
Magnetic	✔	✔

✔ : Text is legible but there is slight discoloration of tape or tube
▲ : Tape surface discoloration

Before test

Labels: PET (Polyester) Standard Adhesive

Labels: Heat shrink tube

Labels: PET Self laminating cable wrap**

Labels: Magnetic

After test

After 2Y
Labels: PET (Polyester) Standard Adhesive

After 2Y
Labels: Heat shrink tube

After 2Y
Labels: PET Self laminating cable wrap**

After 2Y
Labels: Magnetic

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**PET Self Laminating tape has been replaced by vinyl self laminating tape. Test results published in update section.

Weather resistance

Results of additional weather resistance testing Update

Test environment

Irradiance 1.24 kW/m², BTP 63 degree C, Chamber Humidity 50%

	24h	48h	72h	96h	120h
Vinyl	✔	✔	✔	✔	✔
Heat shrink tube	▲	▲	▲	▲	▲
Vinyl self laminating cable wrap	✔	✔	✔	✔	✔
Magnetic	✔	▲	▲	▲	▲

✔: No noticeable change ▲: Text is legible but there is some tape discoloration

Before test

Label: Vinyl

Label: Heat shrink tube

Label: Vinyl self laminating cable wrap

Label: Magnetic

After test

Label: Vinyl
Duration: 48 hours

Label: Vinyl
Duration: 120 hours

Label: Heat shrink tube
Duration: 24 hours

Label: Heat shrink tube
Duration: 120 hours

Label: Vinyl self laminating cable wrap
Duration: 48 hours

Label: Vinyl self laminating cable wrap
Duration: 120 hours

Label: Magnetic
Duration: 48 hours

Label: Magnetic
Duration: 120 hours

Number of years of weather resistance Update

EPSON white vinyl labels are weather resistant for approximately 12 years.
Weather resistance differs with color.
Actual weather resistance depends on the conditions in which the product is used.
This chart is a comparison between EPSON PET and Vinyl.

	Years
PET (White)	2
Vinyl (White)	12
Vinyl (Yellow)	7

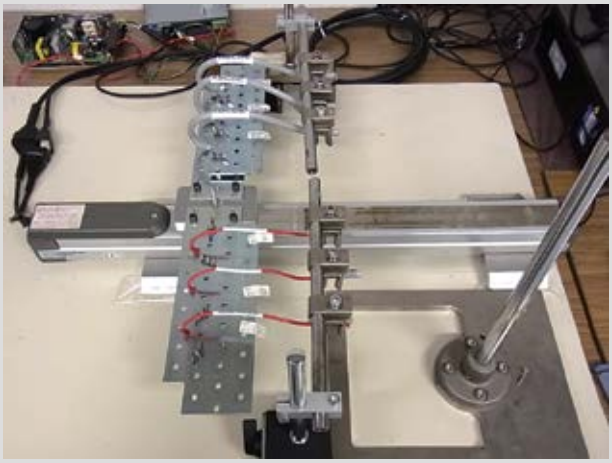
*The tests noted above were conducted by an independent third-party in Japan named Farstar Corporation
http://www.farstar.co.jp (Japanese version only) Address: 6531-26 Sasaga, Matsumoto, Nagano, 399-0033 Japan
Telephone: +81-263-85-7855

Flex Resistance

Flex resistance test

Tests were conducted to confirm the durability of tape materials when flexed.
Tape materials were applied to actual cable and flexed 10,000 times by flex resistance testing machine.

Heat shrink tube: Shrunk on ø3mm and ø8mm cable
PET Self laminating cable wrap**: Placed and wrapped around ø3mm and ø8mm cable.



	ø3mm cable Flexed 10,000 times	ø8mm cable Flexed 10,000 times
Heat shrink tube (After shrinking)	✔	✔
PET Self laminating cable wrap** (After laminating)	✔	✔

✔ : No noticeable change in tape and text

Before test

Labels: Heat shrink tube

Labels: PET Self laminating cable wrap**

After test

Flexing 10,000 times (ø8 cable)
Labels: Heat shrink tube

Flexing 10,000 times (ø8 cable)
Labels: PET Self laminating cable wrap**

*The tests noted above were conducted by an independent third-party in Japan named Farstar Corporation
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**PET Self Laminating tape has been replaced by vinyl self laminating tape.

Ribbon: Fastness to Washing, Dry-Cleaning and Ironing

1 Color & printed text fastness to washing

Tests were conducted to confirm the fastness of color and printed text of ribbon to washing.

Standard
JIS-L-0844 method A-3
* JIS: Japanese Industrial Standards
* Equivalent ISO standard: ISO 105-C10

Test method
- Washed ribbon with printed text together with white cotton cloth and white nylon cloth
- Washed with sodium carbonate aqueous solution
- Water temperature: 60°C
- Washing time: 30 minutes

	Color of ribbon / Color of text					
	Pink / Black	Blue / Black	Gold / Black	Beige / Black	Navy / Gold	Brown / Gold
Color degradation of ribbon	✔	✔	✔	✔	✔	✔
Color contamination of cotton cloth	✔	✔	✔	✔	✔	✔
Color contamination of nylon cloth	✔	✔	✔	✔	✔	✔
Printed text	✔	✔	✔	✔	✔	✔

✔: No noticeable change

2 Color & printed text fastness to dry-cleaning

Tests were conducted to confirm the fastness of color and printed text of ribbon to dry-cleaning

Standard
JIS-L-0861
* JIS: Japanese Industrial Standards
* Equivalent ISO standard: ISO 105-D01

Test method
Washed with tetrachloroethylene together with white cotton cloth

	Color of ribbon / Color of text					
	Pink / Black	Blue / Black	Gold / Black	Beige / Black	Navy / Gold	Brown / Gold
Color degradation of ribbon	✔	✔	✔	✔	✔	✔
Color contamination of cotton cloth	✔	✔	✔	✔	✔	✔
Printed text	▲	▲	▲	▲	✕	✕

✔: No noticeable change
▲: Text became slightly unreadable
✕: Text became unreadable

* The tests (No.1&2) noted above were conducted by an independent third-party in Japan named BOKEN QUALITY EVALUATION INSTITUTE. http://www.boken.or.jp/languages/english.html
Test No. 009178
Issue date of the test result 22-Sep-15

3 Fastness to ironing

Tests were conducted to confirm the fastness of ribbon to ironing.

Standard

Original testing method by SEIKO EPSON Corp.

Test method

- Iron directly on ribbon
- Iron on ribbon with a thin blanket between ribbon and iron

Ironing temperature	Ironing method	Ironing time	Color of ribbon / Color of text					
			Pink / Black	Blue / Black	Gold / Black	Beige / Black	Navy / Gold	Brown / Gold
High (180 - 210°C)	Direct	5 seconds	✕	—	—	—	✕	—
	from above thin blanket	5 seconds	✔	✔	✔	✔	✔	✔
Middle (140 - 160°C)	Direct	5 seconds	✕	—	—	—	✕	—
	from above thin blanket	5 seconds	✔	✔	✔	✔	✔	✔
Low (80 - 120°C)	Direct	5 seconds	✕	—	—	—	✕	—
	from above thin blanket	5 seconds	✔	✔	✔	✔	✔	✔

✔: No noticeable change
✕: Ribbon is slightly melted from the heat
—: No test due to same material as Pink and Navy ribbon

Iron-On: Fastness to Washing

1 Adhesiveness & printed text fastness to washing

Tests were conducted to confirm the fastness of adhesiveness and printed text of Iron-on tape to washing.

Standard

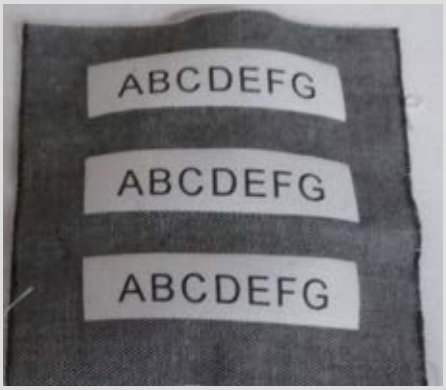
JIS-L-0217 method 103

* JIS: Japanese Industrial Standards
* Equivalent ISO standard: ISO 3758

Test method

- Iron-on tape with text was applied to a cloth and washed by washing machine with detergent
- Check if Iron-on tape remained on cloth and the text was readable after every 10 cycles
- 1 washing cycle

1. Washing for 5 minutes with 40°C water with detergent x 1 time
2. Rinsing for 2 minutes with 30°C or below clear water x 2 times
3. Dewatering and hanging out to dry



Washing cycle	Adhesiveness of Iron-on tape	Printed text
10 cycles	✔	✔
50 cycles	✔	✔
100 cycles	✔	✔
150 cycles	✔	✔

✔: No noticeable change

2 Printed text fastness to washing

Tests were conducted to confirm the fastness of the printed text on Iron-on tape to washing.

Standard

JIS-L-0844 method A-2

* JIS: Japanese Industrial Standards
* Equivalent ISO standard: ISO 105-C10

Test method

- Iron-on tape with text was applied to a cloth and washed by washing machine with detergent and cotton cloth
- Check the change of color degradation of printed text and color contamination of cotton cloth after every 10 cycles
- 1 washing cycle

1. Washing for 30 minutes with 50°C water with detergent x 1 time
2. Rinsing
3. Dewatering and hanging out to dry

Washing cycle	Color degradation of printed text
10 cycles	✔
50 cycles	✔
100 cycles	✔
150 cycles	✔

✔: No noticeable change

Washing cycle	Color contamination of cotton cloth
10 cycles	✔
50 cycles	✔
100 cycles	✔
150 cycles	✔

✔: No noticeable change

* The tests (No.1&2) noted above were conducted by an independent third-party in Japan named BOKEN QUALITY EVALUATION INSTITUTE. http://www.boken.or.jp/languages/english.html

Test No. 014718-1

Issue date of the test result 26-Mar-13

Frequently Asked Questions

1. Which Epson LabelWorks printers use PX tapes?

Any LabelWorks models featuring the PX tape logo is compatible with PX tapes.
K-Sun® LabelShop models are also compatible with PX tapes.

Detailed information about PX tape compatibility with LabelWorks models can be checked at labelworks.epson.com

2. How should I store PX tape?

PX tape should be stored in a cool environment, and avoid high temperatures, high humidity and direct sunlight.

The recommended storing environment is:
Temperature: -10°C to 40°C
Humidity: 80%RH or less
Avoid direct sunlight

3. Does PX tape have an 'expiration date' or 'best used before date' ?

There is no expiration date for these tapes. We do recommend you store them in a clean, indoor environment and use the tape immediately after opening the pack to ensure good quality and reliability during printing.

4. Will colored labels fade over time?

As with all color prints, colors may slightly fade over time. You may notice some colors discolor a little quicker, in comparison to others, due to material and color. However, test results have shown that PX tape is very durable, resisting water and withstanding hot and cold conditions.
All test results are not guaranteed for actual use.

For any concern about actual use, please contact the Epson sales company in your region.

5. How thick is each tape?

Standard PX tape is 70µm, without backing paper

Tape	Thickness
PET (Polyester) Standard Adhesive	70µm
PET (Polyester) Strong Adhesive	160µm
Matte paper	140µm
Ribbon	180µm
Iron-on	200µm
Reflective	220µm
Cable wrap	100µm

Tape	Thickness
Vinyl Self-Laminating	75µm
Vinyl	100µm
Heat Resistant	160µm
Decorative masking tape (Washi)	170µm
Die-cut	160µm
Magnetic	290µm

6. Is PX tape resistant to alcohol?

Yes. Contact with alcohol will not cause significant change to the printed text or tape.

7. What are precautions when the tape is used for a circuit board?

If it is to be processed in a reflow oven, use a heat-resistant tape.

8. What is the difference between PET Self-Laminating Cable Wrap and Vinyl Self-Laminating Cable Wrap?

The vinyl tape is naturally a more flexible material than its PET counterpart, which makes the vinyl ideal for labeling curved surfaces like wires and cables. For this reason we have updated all our self-laminating supplies to the vinyl material.

LABELWORKS
Technical Specifications
for Tape Label Materials

Better Products for a Better Future

At Epson, we know that planning for the future requires a strong commitment to the environment. That is why we strive to create innovative products that are reliable, recyclable, and energy efficient.
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