

BOPP Polypropylene film for type
M-PP/S-PP



■ Features

By adopting the imported super high-purity capacitor-grade home-polypropylene resin, the film is made by biaxial-orientation tenter process. The film features excellent profile evenness, high BDV and high mechanical strength. The winded capacitors take on the characteristics of low dielectric dissipation and high insulation resistance.

■ Application scope:

M-PP: Mainly for metallized-film capacitor.

S-PP: Mainly for foil-film capacitor.

■ Technical Characteristics (typical value)

		Unit	Typical Values	Test conditions
Tensile strength	MD	MPa	140	Stretching speed:100% /min @23°C, 50%r.h..
	TD	MPa	250	
Elongation at break	MD	%	100	
	TD	%	50	
Thermal shrinkage	MD	%	3.5	15 min @ 120°C
	TD	%	1.0	
Wetting tension [1]		mN/m	38	Corona-treated Side
Surface roughness		μm	0.1	23°C
BDV X		V/μm	550	at 23°C air
Relative permittivity			2.2	50Hz or 1kHz @ 23°C
Volume resistivity		Ω·m	5.0×10 ¹⁵	23°C
Dielectric dissipation factor(tan delta)			2×10 ⁻⁴	50Hz or 1kHz @23°C

* Reference Specification: IEC60674-2

* Values above are reference only , not for contracting.

* Note:Uncorona-treated for Type SPP

■ Film thickness code:

The nominal film thickness is indicated by its central value (integer value, e.g. 5,6,7 the first figure after decimal or its codes. The nominal film thickness of this company is the Mechanical Method Value (MMV) under 10 layers testing.

Number	Letter	Number	Letter
-0.4	B	+0.1	V
-0.3	C	+0.2	W
-0.2	D	+0.3	X

-0.1	E	+0.4	Y
0	L	+0.5	Z

Example:

8D indicates 7.8 um in MMV; thickness; 12X indicates 12.3 um .

Remarks: The film of 3L.4E.5E.6E.7E.8D.9D and 10D etc. are recommended.

			3L	4E	5E	6E	7E	8D	9D	10D	12D
Thickness	WMV	μm	2.8	3.7	4.7	5.6	6.6	7.5	8.5	9.5	11.5
	MMV	μm	3.0	3.9	4.9	5.9	6.9	7.8	8.8	9.8	11.8
Tolerance	Average	%	±3								
	Individual	%	±9				±7			±5	
Final film roll width		mm	500 , 620								
Inner diameter		mm	76.2 , 152.4								
Net weight		kg	62, 80								

Note: Unusual specifications can be negotiated and specified additionally.

Capacitor Polypropylene Rough film type RPP/RRPP



■ Features

By adopting the imported super high-purity capacitor-grade homo-polypropylene resin, the rough film is produced by biaxial-orientation tenter process. The film features excellent physical and electrical properties, such as good profile evenness, high electric strength, low dielectric dissipation and good windability etc. The film can company with a good many kinds of capacitor impregnation oil well. According to the authentication from National Power Capacitor Test Center, the product conforms to all the requirements of capacitor insulation materials.

■ Application range:

Mainly for power, electrothermal and other relevant kinds of high voltage capacitors designed as foil-film or foil-film & paper with oil-impregnation.

■ Technical Characteristics (typical value)

		Unit	Typical Values	Test conditions
Tensile strength	TD	Mpa	140	Stretching speed 100mm/min @23°C, 50%r.h.
	TD	Mpa	200	
Elongation at break	MD	%	150	
	TD	%	50	
	MD	%	3.5	15 min @ 120°C

Thermal shrinkage	TD	%	1.5	
Space factor	Average	%	9.0 (6~9 μ m)	23 $^{\circ}$ C
	Limited	%	10.0 (10~18 μ m) Max 15 Min 6	
Surface roughness		μ m	0.25—0.65	23 $^{\circ}$ C
BDV X(DC)		V/ μ m	520	at 23 $^{\circ}$ C air
Relative permittivity			2.2	50Hz or 1kHz @23 $^{\circ}$ C
Volume resistivity		Ω .m	5.0×10^{15}	23 $^{\circ}$ C
Dielectric dissipation factor(tan delta)			2×10^{-4}	50Hz or 1kHz @23 $^{\circ}$ C

*Reference Specification: IEC60674-2

**Values above are reference only , not for contracting.

■ Film thickness code

The nominal film thickness of this company is the Mechanical Method Value (MMV) under 10 layers testing.

■ Dimensions & specifications:

Thickness	MMV	μ m	6	8	9	10	11	12	13	14	15	18
	WMV	μ m	5.5	7.4	8.3	9.2	10.2	11.0	11.9	12.8	13.7	16.5
Tolerance	Average	%	± 3									
	Individual	%	± 9			± 7				± 5		
Final film roll width	mm	40~700 or to slit according to customers' request										
Inner diameter	mm	76.2 , 152.4										

Note: nusual specifications can be negotiated and specified additionally

Al Metallized film

1. Property

1.1 Advantages

Better electrical conductivity, compared with Zn/Al film

Considerable good self-healing performance

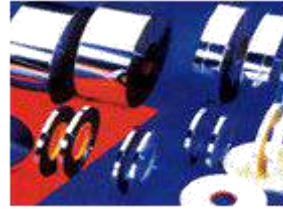
Good performance of anti-air-corrosion. Convenience for reserve and long storage time

1.2 Disadvantage

1.2.1 higher capacitance loss than Al/Zn film

1.2.2 coated lay is very thin, so metallikon is difficult.

1.2.3 In time of metal spraying, alumina will increase the resistivity.

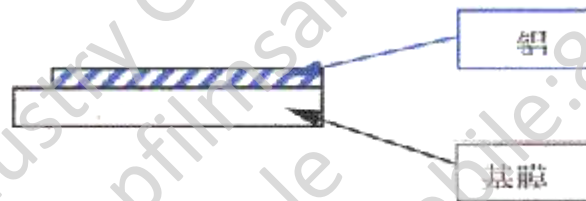


with

2. Application

Applied to capacitors for power system, refrigerators, air conditioners and so on.

3. Construction type



4. Specification

item	unit	nominal value	
roll	mm	roll diameter	75
		inner diameter	
		outer diameter	150~300(The specific diameters can be customized.)
thickness	μm	4、5、6、7、8、9、10、12	
width×margin value	mm	6X1.5 8X1.5 10X1 10X1.5 20X1 14X1.5 15X1.5 7X2.5 9.5X2.5 5.5X2.5 12X2.5 10X2.5 15X2.5 12X3 9.5X3 30X1.5 7.5X1.5 18X1.5 28X1.5 20X1.5 23X1.5 60X5 7X1 8X1 12X1 15X1 25X1 30X1 7X1.5 12X1.5 25X1.5 35X1.5 10X2 15X2 12.5X1.5	
		5X2.5 10X2.5 15X2.5 20X2.5 25X2.5 30X2.5 35X2.5 37.5X2.5 40X2.5 45X2.5 50X2.5 55X2.5 60X2.5 65X2.5 65X2.5 70X2.5	

		75X2.5 80X2.5 85X2.5 90X2.5 95X2.5 100X2.5 115X2.5 120X2.5 125X2.5 13s0X2.5
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Al/Zn Metallized film



1. Property

Advantage:

1 Small capacitance loss over long service time.

1.1.2 Thick coated lay facilitates metallikon, compared with Al film.

1.1.3 In time metal spraying zinc oxide makes the low resistivity

1.1.4 High dielectric strength

Disadvantage

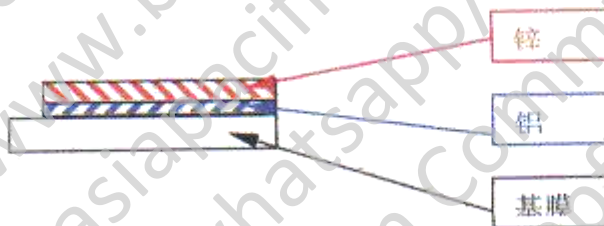
Poor anti-air-corrosion performance, short storage time

Application

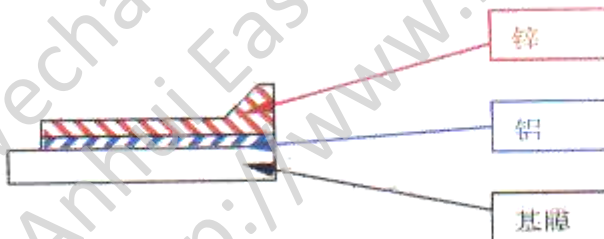
Applied to capacitors for power system, refrigerators and air conditioners

Construction

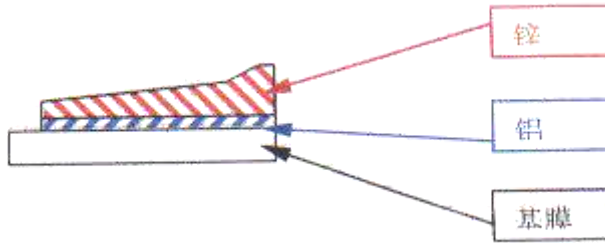
3.1 Aluminum/Zinc film sine heavy edge



3.2. Aluminum/Zinc film with reinforced edge



3.3.Gradient resistance Aluminum/Zinc film with reinforced edge



4. Specification

item	unit	nominal value	
roll	mm	roll diameter	75
		inner diameter	
		outer diameter	150~300 (The specific diameters customized.)
thickness	μm	4、5、6、7、8、9、10、12	
width×margin value		14X2 21X2 26X2.5 17.5X1.5	
	mmXmm	30X2.5 35X2.5 37.5X2.5 40X2.5 45X2.5 50X2.5 55X2.5 60X2.5 65X2.5 70X2.5 75X2.5 80X2.5 85X2.5 90X2.5 95X2.5 100X2.5 115X2.5 120X2.5 125X2.5 130X2.5	

Asia Pacific Industry Group Co., Limited
 http://www.boppfilmsales.com
 Skype: asiapacificsales
 Wechat/whatsapp: 06128919654871
 Anhui Eastern Chemicals
 http://www.boppfilmsale.com

Safety Anti-explosion Film

1. Property

1.1 Advantage:

Flame retardant, anti-explosion, high dielectric strength, good safety performance, reliable electrical property, economization of anti-explosion cost



1.2 Disadvantage

Quite high cost

Application

Applied to capacitors for power system, refrigerators and air conditioners

Construction



4. Specification

item	unit	nominal value	
roll	mm	diameter inner diameter	75
		outer diameter	150~300 (The specific diameters can be customized.)
thickness	μm	4、 5、 6、 7、 8、 9、 10、 12	
width×margi	mm	25X2.5	

n value		30X2.5 35X2.5 37.5X2.5 40X2.5 45X2.5 50X2.5 55X2.5 60X2.5 65X2.5 70X2.5 75X2.5 80X2.5 85X2.5 90X2.5 95X2.5 100X2.5 115X2.5 120X2.5 125X2.5 130X2.5
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