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A MEMBER OF ZTELEC GROUP











Who are We

ZTELEC Group is an enterprise that has 60 years history of insulation materials production, whose subsidiary company, XJ Insulation Materials CO., LTD is the earliest professional electrical insulation materials R&D (research and development) and production company in China. Now, we trial standards. In Asia, the products of ZT are the pronouns of reliable are still the wholly owned sponsor of Xuchang Insulation Materials Research Institute, which has the most perfect laboratory and R&D system in this field. We have built close cooperation relationship with more than 30 sales agents, logistics centers and service centers all over the world, devoting to providing our customers with complete electrical insulation system solutions and trustworthy and qualified products.

The Product Scope of ZTELEC Group

After 60 years' development, our group has become a comprehensive company with 160 products in the power industry.

- (1) Enameled Copper Wire Product, Super-Fine Wire, and Special Aerospace Non-magnetic Wire
- (2) Electrical Insulation Composite Material
- (3) Electrical Insulation Laminated Material
- (4) Electrical Insulation Winding Material
- (5) Electrical Woven Tape
- (6) Transformer
- (7) Porcelain Insulator, Changers and other transformer accessories
- (8) Electronic Copper-clad Laminated Plate, and 5G High Frequency Board



Production

We adhere to the concept of smart factory, emphasize the humanmachine combination, and accelerate the transformation from the production mode to an intelligent manner. We abide by international and indusquality and innovation.

We have customized production according to the customer's demand, and we are able to achieve rapid delivery. All these abilities are originated from our decades' practice of TPS and continuous improvement of production equipment. We need to meet or exceed our customers' requirements, and our products can meet the requirements of ISO, DIN, IEC and GB. We have a benchmarking laboratory in this field(Our Chengdu laboratory in China was once a national testing center).

Customer First

We cordially welcome our customers to participate in our joint-effort of R&D. We are not only concerned about the products, but also the application and efficiency of the products. We adopt flat list prices and follow the strict quality standards, committing ourselves to providing cost-effective and reliable products to our customers.



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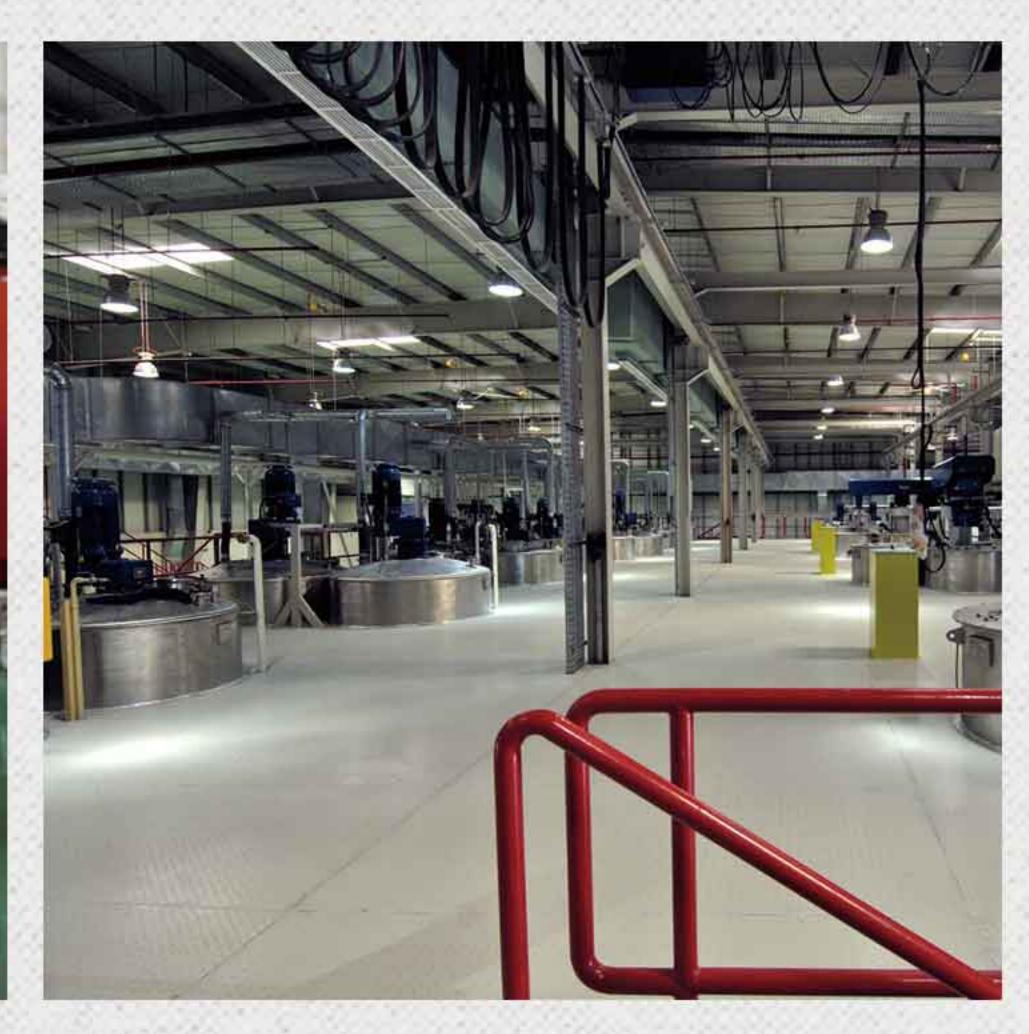
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Insulation Impregnated Varnish Insulation Impregnated Varnish







Insulation Impregnated Varnish

Melamine alkyd impregnating varnish	1032	Class B
Environmental friendly melamine alkyd impregnating varnish	1033	Class E
Epoxy resin iron core cover paint	133A/B	Class F
Epoxy casting resin	901A/B	Class H

1032: This product is mainly comprised of modified melamine resin and it is mainly used for impregnating the coil of motor and electrical equipment so as to fill their gaps and micropores. The surface of the impregnated material can form a continuous flat film of solidified varnish. 1032 is easy to dry, and has high oil resistance and dielectric properties.

1033: This product mainly consists of modified epoxy resin, modified melamine resin and fast drying agent. It is characterized by high dielectric properties, smooth paint film, light odor and fast curing. Temperature tolerance is grade B.

133A/B: This product has good surface luster, excellent insulation property and process performance.

901A/B: It is a kind of epoxy resin with two components and the addition of fillers, which has the high strength glass structure formed by casting and solidifying together with glass yarn mesh fabric in vacuum. It has good mechanical and electrical properties, and high lightning impulse resistance.

- 1032/1033:
- Used for impregnating insulation of motor and transformer winding.
- 133A/B:

It is always used as a optimized paint for iron core of the dry type transformer.

• 901A/B

An ideal material for the dry type transformer and reactor.

NO.	NO. Project		Unit	1032	1033	133A/B
			On the	Index		
1	Appearance		= 1	Uniform dissolution,	, no turbidity, impurities, smoo	oth after drying paint film
2	Viscosity cup	no.4(23±1)℃	S	40±8	40±8	45±5(A) 300±50(B)
3	Solid content((105±2)℃2h	%	50±2	50±2	60±3
4	Drying time(1	20±2)℃	h	≤2	≤2	≤24(25°C)
5	Stability of pa	int in an open bottle	-	The viscosity increase value	e is no more than 4 times of initial viscos	sity -
6	Acid value		mgKOH/g	≤6	≤6	≤18
7	Effect of lacqu	uer on enameled wire	-	Pencil hardness>H		
8	Elastic/axis di	ameter 3 mm		No cracking of paint	film	
	Floatrical	Normal		≥70	≥70	-
9	Electrical strength	(130±2)℃	MV/m	≥30	≥30	-
		After soaking 24h		≥60	≥60	
	Volume	Normal		1*10 ¹²	1*10 ¹²	1*10 ¹²
10	resistivity	(130±2)℃	Ω·m	1*10′	1*10 ⁸	
		After soaking 7d		1*10 ⁸	1*10 ⁸	
11	Temperature	Index(11)	*	≥130		≥155
	1A/B			Unit	901A	901B
Co	lor			14	Red/red-brown	White
Vi	scosity 25℃			mpa.s	3500-6000	60-80
De	ensity 20°C			g/cm³	1.1-1.2	1.1-1.2
Te	chnical indexes a	fter curing				
De	ensity			g/cm³	2.3-2.7	2.3-2.7
Ве	nding strength			MPa	1.0×10 ⁶	1.0×10 ⁶
Su	rface resistivity			Ω	1.3×10 ¹³	1.3×10 ¹³
Vo	lume resistivity			Ω.m	4.4×10 ¹⁴	4.4×10 ¹⁴
Po	wer frequency die	electric loss factor			0.05	0.05
Po	wer frequency rel	ative permittivity		7 <u>=</u>	3.3	3.3
Co	mparative trackin	ig index(CTI)		14	600	600
Ele	ectrical strength(in	20°C transformer oil, rapid bo	ost mode)	MV/m	27.8	27.8
Ar	c resistance			S	100	100
	sting technology				emperature: 70°C Viscosity: 6 eture: 75-80°C Pressure: 5-10	
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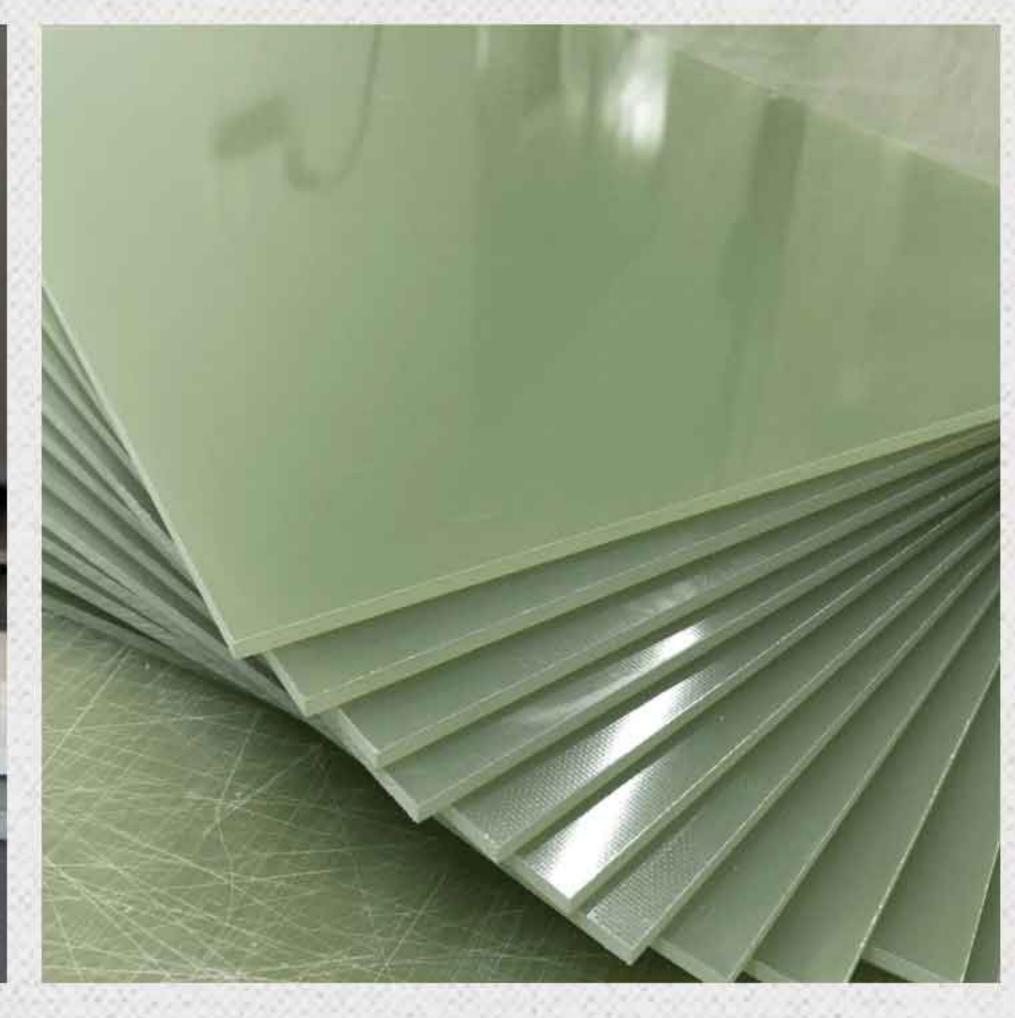
Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: 1032/1033 17kg/paint barrel 180kg/paint barrel 133A/B A: 24kg/paint barrel B: 6kg/paint barrel

Keep in clean, dry and well ventilated room at temperature below 35℃; avoid sunlight and keep fire off. The storage period is 6 months.







Laminated Sheet

Epoxy glass fiber sheet	3240	EPGC201/202/203/204/306/308	Class B/F/H
Silicone laminated glass fiber sheet	3250	SIGC202(IEC)/G7(NEMA)	Class H
Modified diphenyl ether laminated glass fiber sheet	350	DPOGC301	Class H
Polyester imide laminated glass cloth board	352		Class H
Bismaleimide laminated glass fiber sheet		BMI GC301	Class H
Modified bismaleimide laminated glass fiber sheet		BMI GC302	Class H
Polyamideimide glass fiber sheet	3253	PAIGC301	Class H
Semiconductor glass fiber sheet	3241		Class B
Magnetic glass fiber sheet			Class F
Phenolic laminated paper-base sheet	3021	PFCP 202	Class E
Phenolic laminated cotton cloth sheet		PFCC201/202/203/305	Class E
Laminated wood		DLW101/201/202/301	
FR4 copper clad laminated sheet			

Epoxy glass fiber sheet

EPGC201/202/203/204/306/308

The product adopts 7628 glass fiber cloth impregnated with epoxy resin by hot pressing. It has high mechanical and electrical properties, good heat resistance and humidity resistance. Products are widely used in mechanical, electronic and electrical equipment as components of insulation parts. The products have higher mechanical properties, electrical properties and high thermal mechanical strength.

IEC	Characteristic
EPGC201	High mechanical and electrical properties, good heat resistance property, moisture resistance products.
EPGC202	Performance is similar to EPGC201; the flame retardance level is improved to UL F-V0.
EPGC203	Performance is similar to EPGC201 and it has advanced heat resistance, high mechanical strength at high temperatures, excellent electrical and anti-static properties.
EPGC204	Performance is similar to EPGC203; the flame retardance level is improved to UL F-V0.
EPGC306	Performance is similar to EPGC203 and its proof tracking index is improved.
EPGC308	Performance is similar to EPGC203, improved heat resistance, mechanical stability at high temperatures.



SIGC202、350、352、

BMIGC301/302、PAIGC301

The product has the temperature grade of class H. It has higher mechanical strength, heat resistance, dielectric properties, permeability, radiation resistance and flame resistance, which can be used for H-class motor and electrical appliance as components of insulation parts.

PFCP 202

This product is made of insulating paper impregnated with phenolic resin and is formed by baking and hot pressing. It has high mechanical and electrical properties. This product can be used as components of insulation parts of motors with higher mechanical performance and electrical equipment. It can also be used in the oil of trans-

PFCC201/202/203/305

The product is made of cotton impregnated with phenolic resin and is formed by hot pressing, which has strong mechanical and electrical properties.

Semiconductor laminated glass fiber sheet

This product has high mechanical and semiconductor properties and good heat resistance, and it is suitable for middle and large motor slot wedge as anti-corona material.

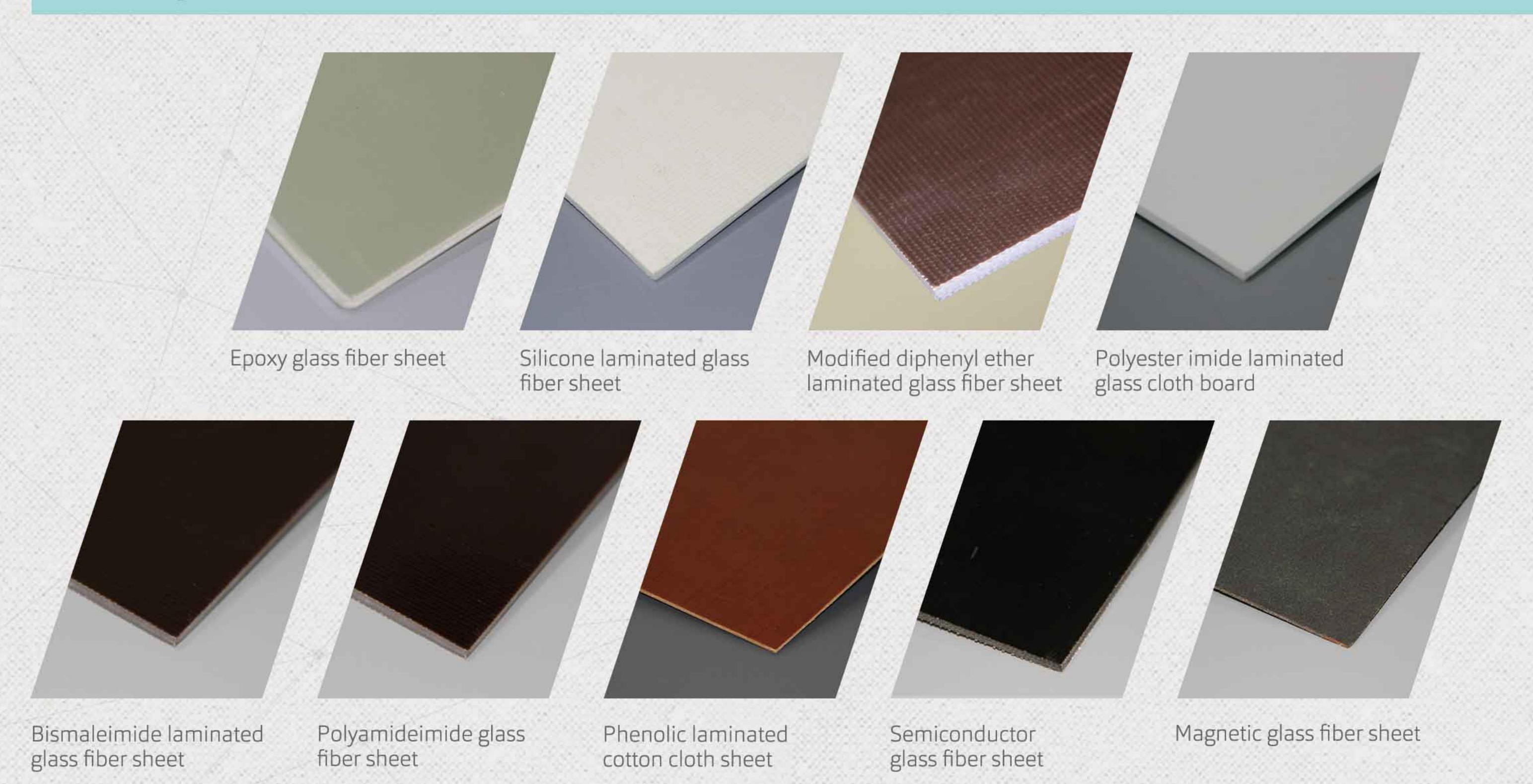
Magnetic laminated glass fiber sheet

Temperature grade: Class F. This product has high mechanical property, heat resistance and permeability, which is used as the raw material of magnetic slot wedge and widely used on large motors and wind turbines. Density: 2.4 ~ 2.5g / m³. Relative permeability: (80KA / m) ≥3.0

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Standard		GB/T 1303-2009 /	/ IEC60893	-2004															
Chinese name		3240						3250	350	352	-	-	3253	3021	3025	3025A	3026	3027	3241
IEC		EPGC201	EPGC20	2 EPGC20	EPGC20	4 EPGC306	EPGC308	SIGC202	DPOGC301		BMI GC301	BMI GC302	PAIGC301	PFCP202	PFCC201	PFCC202	PFCC203	PFCC305	
NEMA		_	FR4	G10	FR5	G11	-	G7	4	_	-	14	=	=:	-	40	:=	-	-
Basic material		Glass fiber cloth	Electron	ic grade gla	ss fiber cloth				Glass fiber clot	h/electronic grad	e glass fiber c	loth		Paper		C	oth		Glass fiber clo
Resin		Ероху	Heat-res	istant epox	y resin			Organic silicone resin	Diphenyl ether	Polyetherimide	Bismaleimi	de	Polyamide-imide	Phenolic					Ероху
Color		Natural	Natural/	green				White/light green	Dark brown	White	Brownish re	ed	Dark brown	Red brown		Br	own		Black
Test item	Unit									Value									
Density	g/m³							1.8~1.95						1.25~1.4		1.3	~1.4		1.75~1.90
Vertical layer bending strength (normal)	MPa			≥3	40			≥320	≥300	≥300	≥350	≥380	≥400	≥120	≥100	≥90	≥110	≥125	≥300
Parallel layer impact strength (simply supported beam method)	KJ/m²			≥3	88			≥45	≥42	≥38	≥60	≥60	≥60	**)		≥	7.8		≥50
Vertical layer electrical strength (90℃ transformer oil) (1mm thickness)	KV/mm			≥1	4.2			≥8.0	≥8.0	≥14.0	≥14.0	≥14.0	≥14.0	≥15.8	≥5.1	≥5.1	≥5.1	≥5.1	≥8.0
Parallel layer breakdown voltage (90℃ transformer oil)	KV	≥35	≥35	≥40	≥35	≥40	≥35	≥35	≥35	≥40	≥35	≥40	≥40	≥35	≥20				≥35
Dielectric constant (50Hz)				≤5	.5			≤4.5	≤5.5	≤5.5	≤5.5	≤5.5	≤5.5		•	≤5.5(1MHz	2)		
Dielectric loss factor (50Hz)				≤0.	04			≤0.02	≤0.05	≤0.05	≤0.05	≤0.05	≤0.03						
Insulation resistance after immersion	Ω			≥5.0*	10 ¹⁰			≥1.0*10 ¹⁰	≥1.0*10 ¹⁰	≥1.0*10 ¹⁰	≥1.0*10 ⁸	≥1.0*10 ⁸	≥1.0*10 ⁸	_:	≥5*10 ⁷				≥1.0*10 ⁸
Proof tracking index(PTI)			-	:		≥200			₩ :	≥300	≥280	≥280	≥500			≥100			
Combustibility	-		V-0	_	V-0	2:	-	V-0			HB40			-:		4	::-	-	HB40
Temperature index	-	130	130	155	155	155	180	180	180	180	180	180	200	120			120		155
Water absorption ①(1-20mm thickness)	mg			17~	73			32~125	64~200	64~193	64~193	64~193	64~227	180~970		206~406		136~277	64~193

Note: ①Range values are measured for different thicknesses

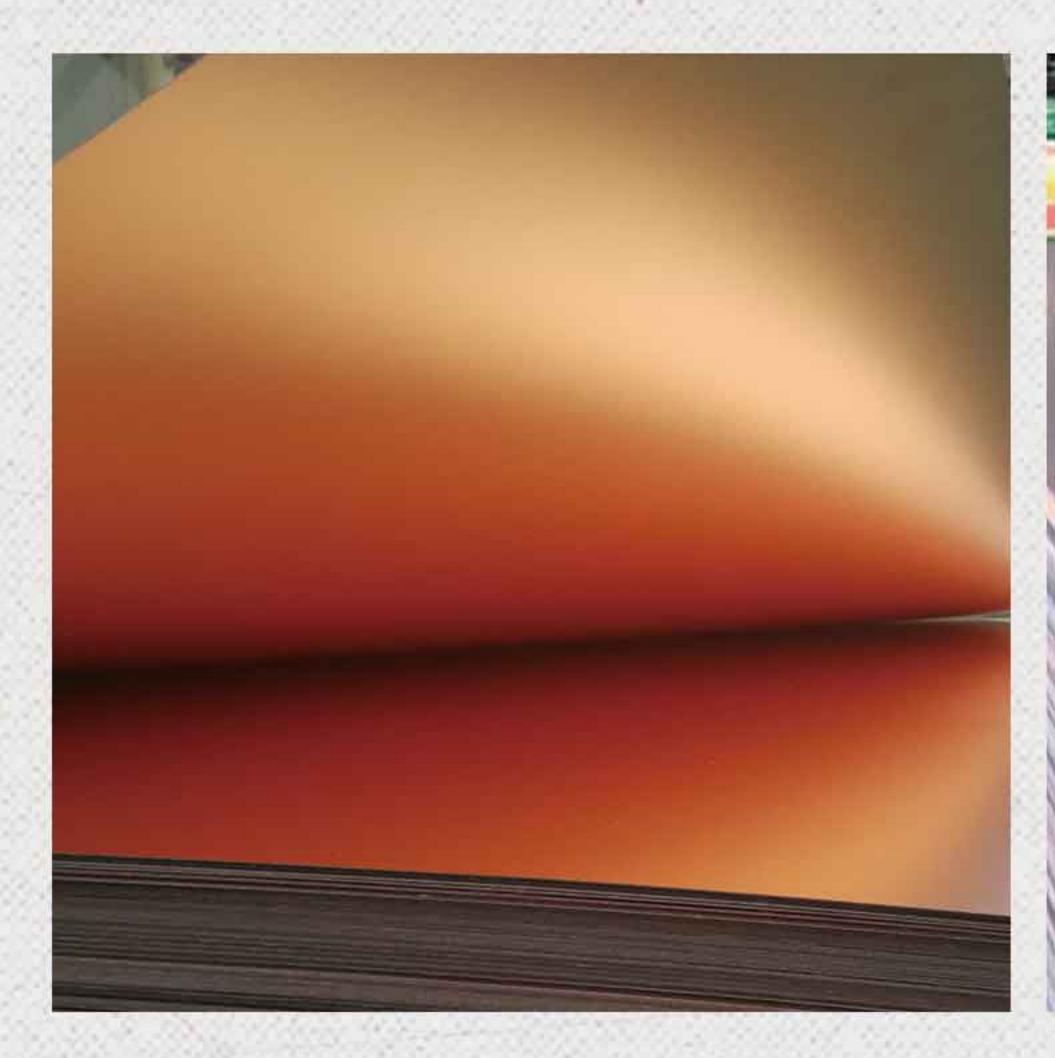


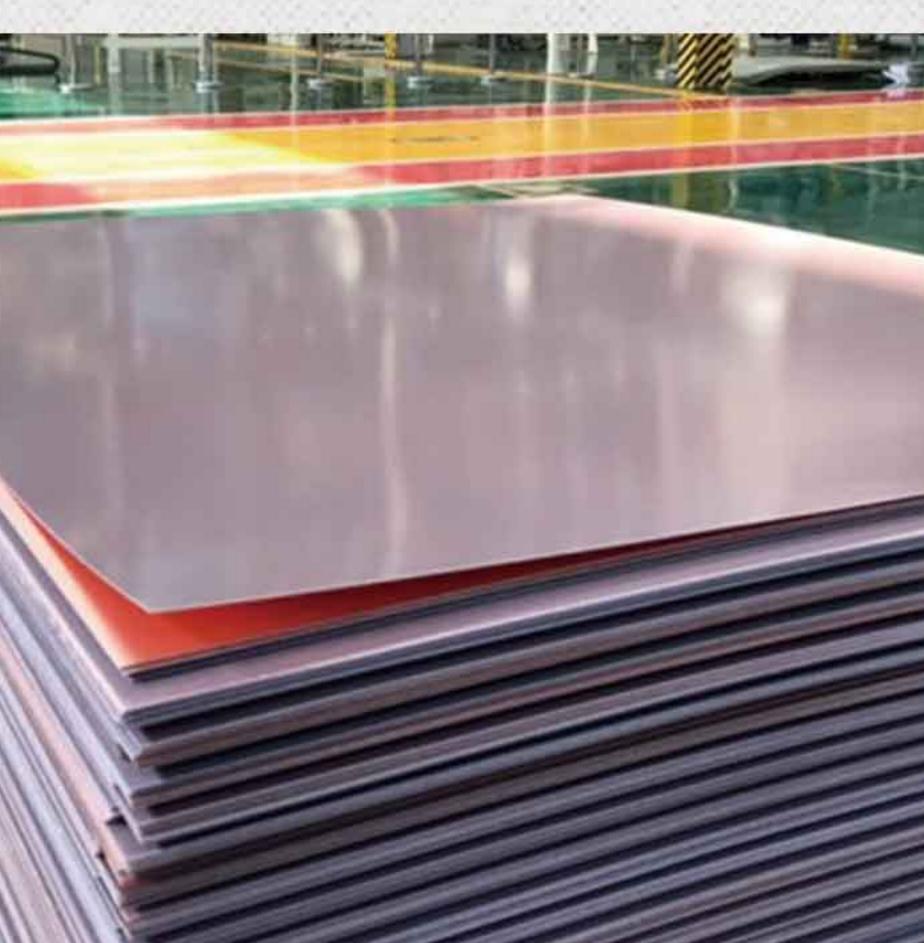
A: (EPGC201/202/203/204/306/308、SIGC202、350、352、BMIGC301/302、PAIGC301) L*W(mm): 2000*1000/1020*2020 (±20) 1000*1000(±10)(Magnetic laminated glass fiber sheet) EPGC202/203/204/306: (2000*1000/1020*2020/1020*1220)

Thickness (mm) Tolerance (±mm)		0.5	0.8	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	60.0	70.0	80.0	90.0	100.0
A	0.02	0.03	0.05	0.13	0.18	0.20	0.30	0.36	0.40	0.45	0.55	0.63	0.70	0.80	0.85	0.95	1.15	1.50	1.90	2.10	2.30	2.40	2.50	2.80	-		=
3025/3025-A	/ E.	0.08	-	0.20	0.24	0.26	0.31	0.36	0.42	0.46	0.55	0.63	0.70	0.78	0.85	0.95	1.10	1.22	1.34	1.45	1.55	1.65	2.00	2.00	2.00	2.00	2.00
3026/3027	-	0.05		0.16	0.19	0.21	0.26	0.32	0.36	0.40	0.49	0.56	0.64	0.70	0.76	0.87	1.02	1.12	1.24	1.35	1.45	1.55	2.00	2.00	2.00	2.00	2.00
3241	1	0.03	-	0.13	0.18	0.20	0.30	0.36	0.40	0.45	0.55	0.63	0.70	0.80	0.85	0.95	1.15	1.50	1.90	2.10	2.30	2.40	_		_	3	-
Magnetic laminat- ed glass fiber sheet				0.13	-	0.20	0.30	0.36	0.40	0.45	0.55	0.63		=	-		-	=)	-	-	-	= /	-	#	-	-	-

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Package & Storage: Wrapped with packaging film and packed in pallet; horizontally placed in dry and clean room at room temperature; keep it away from moisture and fire. The storage period is 12 months.







PCB Board -- CCL (FR-4/CEM-3)

FR-4 copper clad laminated sheet uses glass fiber cloth as base material. After being immersed with epoxy resin and then baked into prepreg sheet, several prepreg sheets are then coated with copper foil on one side or double sides, and CCL is finally formed by hot pressing and curing.

FR-4 copper clad laminated sheet has excellent thermal stability and machinability, widely used in the manufacture of printed circuit board (PCB) for television sets, computers, communication equipment and other electronic products.

Technical Data

			FR-4	CEM-3
Test item	Unit	Test condition	Specification(IPC-4101C)	
Peel strength(1 oz.)	N/mm	125℃	≥0.7	AABUS
1 001 011011601111		Float 288°C/10 Sec	≥1.05	AABUS
Thermal stress	Sec	Float 288℃/unetched	≥10	≥10
Bow / twist	%	A	≤1.0	≤1.0
Flexural strength	N/mm²	Warp	≥415	≥276
riexulai stieligtii	Rating	Fill	≥345	≥186
Flammability	°C	UL94	UL94 V-0	UL94 V-0
Glass transition(Tg)	ΜΩ	E-2/105(DSC)	≥130	≥120
Surface resistivity	MΩ-cm	C-96/35/90	≥1.0X10 ⁴	≥1.0X10 ⁴
Volume resistivity	=)	C-96/35/90	≥1.0X10 ⁶	≥1.0X10 ⁶
Dielectric constant	#:	Etched/@1 MHZ	≤5.4	≤5.4
Loss tangent	Sec	Etched/@1 MHZ	≤0.035	≤0.035
Arc resistance	%	D-48/50+D-0.5/23	≥60	≥60
Moisture absorption	%	D-24/23	≤0.35(min 0.51mm)	≤0.5
1.1013tare absorbitori	70	E-2/105 TMA	≤0.80(max 0.51mm)	20.0
Comparative tracking index	V	Etched/0.1% HN4CL	≥150	≥175
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Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Sealed packaging with plastic cloth. Avoid direct sunlight, rain, high temperature, humidity, and bending. Keep it at room temperature and the relative humidity of 70%. The storage period is 12 months.

Specification

Base color	Thickness	Copper foil thickness	Regular size
Yellow/nature/gold	0 F ~ . 2 F mm	12/18/35/70/105 um	915*1220 mm(36"*48") 1020*1220 mm(40"*48")
renow/nature/gold	0.5~3.5 mm	½ oz./1 oz./2 oz./3 oz.	1040*1240 mm(41"*49")







Electrical Laminated Wood Board

This product is made of good birch that is rotarily cut into thin wood layer and then dried, laminated and hot pressed. It has moderate density and high mechanical strength and it is easy to be dried in vacuum and to be processed. The dielectric constant is close to the transformer oil.

It can be used for the production of coil plate, core pad, lead bracket and other insulation/support components in transformers or mutual inductor.

Product Specification

Thickness(mm)	Length*width(mm)
12-1000	3500X1500 / 2000X1000 / 2000X4000
Chi, anno allegati delle si completa di completa di completa di completa di completa di completa di completa d	

Technical Data

NO.	Item		Unit	Value						
NO.	нет		UIIIL	DLW101	DLW201	DLW202	DLW301			
1	Appearance		ATT (Smooth surface, neat edge cutting, no layered cross-section						
2	Density		g/cm³	1.2-1.3	1.1-1.2	1.1-1.2	1.0-1.1			
7	Vertical layer	A direction	MPa	≥80	≥65	≥65	≥55			
٦	bending strength	B direction	IVII a	≥80	≥65	≥65	≥55			
4	Impact strength	A direction	KJ/m ²	≥15	≥13	≥13	≥10			
-1	Impactisticingti	B direction	NJ/111	≥15	≥13	≥13	≥10			
5	Interlayer shear strength		MPa	≥9	≥8	≥8	≥7			
6	Vertical layer electrical strength (90℃ transformer oil)		KV/mm	≥9	≥8	≥7	≥7			
7	Parallel layer breakdown voltage (90°C transformer oil)		KV	≥50	≥50	≥50	≥50			
8	Pollution to liquid dielectric		-	≤0.1	≤0.1	≤0.1	≤0.1			
		A direction		≤0.3	≤0.3	≤0.3	≤0.3			
9	Shrinkage after drying	B direction	%	≤0.3	≤0.3	≤0.3	≤0.3			
		Thickness direction		≤3	≤3	≤3	≤3			
10	Water content		%	≤6	≤6	≤6	≤6			
11	Oil absorption		%	≥5	≥8	≥8	≥10			
Lamin	ated wood insulating parts in the transtion	sformer using range	Transformer	≤110 KV	≥110 KV	66-35 KV	≥35 KV			

Standard: GB/T 20634.3-2008 /IEC61061-2:1998

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Package & Storage: Wrapped with packaging film and packed in pallet; horizontally placed in dry and clean room at room temperature; keep it away from moisture and fire. The storage period is 12 months.







Laminated Tube

Phenolic paper laminated tube	3520	PFCP22A(IEC)	Class E
Phenolic cotton cloth laminated tube	380/380A	PFCC21A/24A	Class E
Epoxy laminated glass cloth tube	3640/3641	EPGC21/22	Class B/F
Modified diphenyl ether laminated glass cloth tube	355		Class H
Polyester imide laminated glass cloth tube	356		Class H
Silicone laminated glass tube	3652	SIGC21	Class H
Bismaleimide laminated glass cloth tube	364	BMIGC21	Class H
Epoxy glass fiber winding tube	360	EPGF51/52/53	Class H

3520

This product has good mechanical and electrical properties. It can be used for motor and electrical equipment.

380/380A

The product has higher radial tensile strength. It can be used as support structure and wear-resistance parts of seals or bearings.

EPGC21/22、355、356、SIGC21、BMIGC21

Non-circular tube (square tube, oval tube)

Has good dielectric properties and machinability. Can be made into a dry-type transformer coil insulation tube and transformer insulation end ring.

JB/T3172-1999

- 3520
- Can be used in transformer oil.
- EPGC21/22, 355, 356, SIGC21, BMIGC21

The product can be used as components of insulation structure of electrical equipment

Technical Data

Standard: JB/T3172-1999(3520), GB/T 5132-2009, IEC61212-2006 Chinese name 3520 380 380A 3640/3641 355 356 3652 364 IEC PFCP22 PFCC21 PFCC24 EPGC21/22 - - SIGC21 BMIGC21 NEMA - - - - - - - - - Base material Paper Cloth Fiberglass Fiberglass												
	Chinese name		3520	380	380A	3640/3641	355	356	3652	364		
			PFCP22	FCP22 PFCC21 PFCC24		EPGC21/22	-	-	SIGC21	BMIGC21		
			-	-	-	-	-	-	-	-		
			Paper	Cloth		Fiberglass cloth						
			Phenolic			Ероху	Diphenyl ether	Polyetherimide	Organosilicone	Polyamide- imide		
	Color		Brown			Yellow	Dark brown	White	White	Dark brown		
	Item Unit		Value									
	Density	g/m³	1.0-1.1	1.2-1.3	1.2-1.3	1.7-1.8	1.7-1.8	1.7-1.8	1.7-1.8	1.7-1.8		
	Vertical layer bending strength (normal)	MPa	≥90	≥138	≥150	≥70	≥80	≥80	≥80	≥80		
	Axial compressive strength	MPa	≥60	≥118	≥118	≥60	≥70	≥70	≥70	≥70		
	Parallel layer breakdown voltage(90 °C transformer oil)	KV	≥25	-	-	≥35	≥25	≥25	≥25	≥25		
	Vertical electrical strength (90 ℃ transformer oil) KV			≥3.5 nickness: 3 liameter: 2		≥6-14						
	Dielectric loss factor (50Hz)	-	≤0.03	-	-	≤0.03	≤0.03	≤0.03	≤0.03	≤0.03		
	Water Absorption	%	≤8(3mm)	≤5(3mm)	≤4(3mm)	≤1	≤1	≤1	≤1	≤1		
	Temperature Index	-	120	120	120	130/155	180	180	180	180		



Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packaging film wrapped and packed in carton. Store it in dry and clean room at room temperature and keep it from moisture. The storage period is 12 months.







Epoxy Glass Fber Winding Tube 360 EPGF51/52/53

This product adopts fiber glass yarn that is impregnated with insulation jelly made of epoxy resin and other resins by certain proportion, and then it is rolled in wet method, and dried and finally consolidated by baking. Its heat resistance level is up to class H, and it also has excellent electrical and mechanical properties, chemical resistance (SF6), low dielectric loss, no deformation or delamination.

Non-Circular Tube (Square Tube, Oval Tube)

Non-circular tube is made of high temperature resistant resin and fiber glass cloth or yarn that are rolled in wet method, and then dried and finally consolidated by baking. It has excellent mechanical, dielectric and mechanical properties.



- Epoxy glass fiber winding tube
 - It can be used as main insulator on H grade dry-type transformer, load tap changer, electric reactor, lightning arrestor, SF6 inductor, etc.
- Non-circular tube

It can be used as components of insulating structure of electrical equipment, and can be also used in transformer oil and in wet environment. It is suitable for transformer, reactor, etc.

Technical Data

NO.	Project	Unit	Value 360/EPGF52
1	Density	g/m³	1.85-2.00
2	Vertical bending strength(normal)	MPa	400
3	Axial compressive strength	MPa	≥150
4	Parallel layer breakdown voltage(90 °C transformer oil)	KV	≥40
5	Vertical layer electrical strength(90 ℃ transformer oil)1mm	KV/mm	≥11.6
6	Surface voltage resistance after wetting	KV	≥12
7	Insulating electrical resistance after wetting	Ω	≥1.0*10 ⁹
8	Dielectric loss factor(50Hz)		≤0.05
9	Water absorption	%	≤1
10	Partial discharge	PC	≤5
11	Temperature index		180

Standard: GB/T 23100-2008 IEC61212-2006

Product Specification

Product specification	3520	380/380A	3640/3641	355	356	3652	364	360
Fioduct specification	PFCP22	PFCC21/24	EPGC21/22	_		SIGC21	BMIGC21	EPGF51/52/53
Min wall thickness(mm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
Max wall thickness(mm)	80	200	200	200	200	200	200	-
Max inside diameter(mm)	10	10	6	6	6	10	10	30
Max inside diameter(mm)	1200	1200	1200	1200	1200	1200	1200	600
Length(mm)	1000	1000			1000/1200			1000-3000

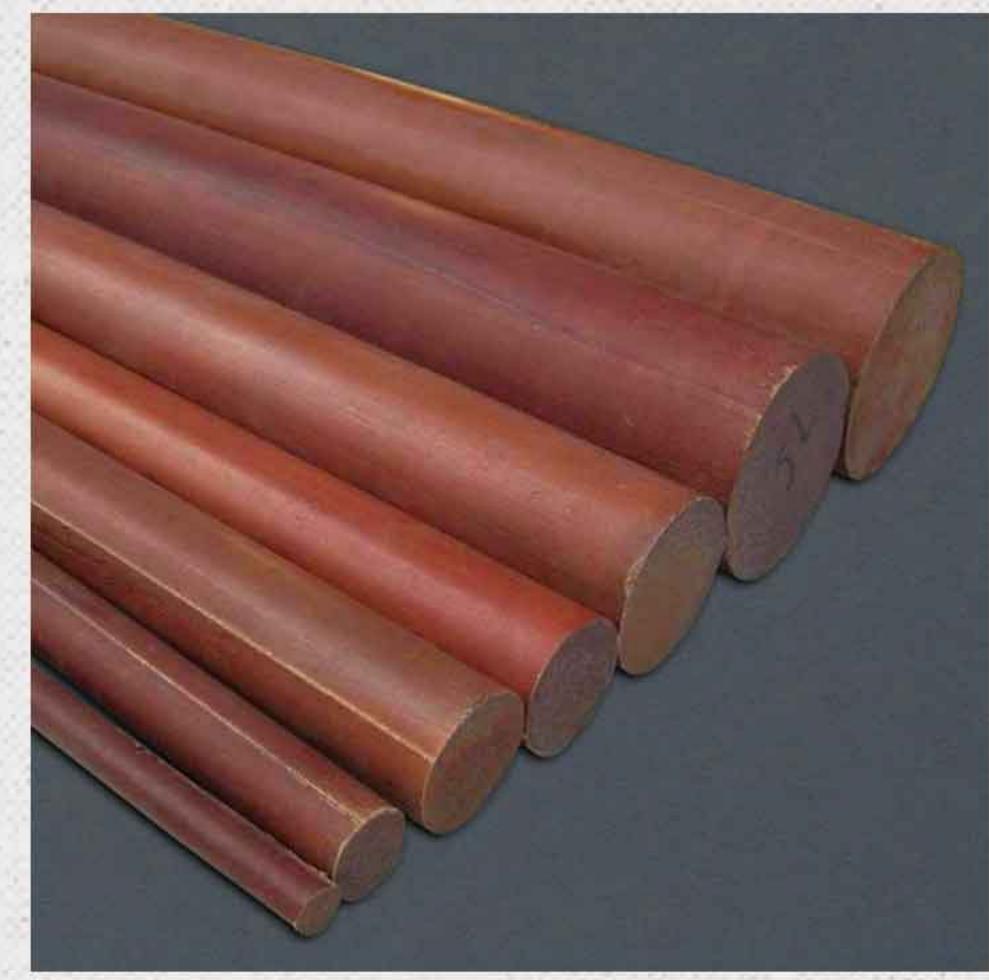
Technical Data

NO.	Item name	Unit	Value
1	Apperance		White, shadow green, brown, dark brown
2	Density	g/cm ³	1.621.85
3	Bending strength	MPa	≥150
4	Volume resistivity	MΩ.m	≥108
5	Vertical layer withstand voltage	V/mm	≥6000

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packaging film wrapped and packed in carton. Store it in dry and clean room at room temperature and keep it from moisture. The storage period is 12 months.







Laminated Rod

Phenolic cotton cloth laminated rod	3725	PFCC41	Class E
Epoxy glass fiber cloth laminated rod	3840	EPGC41	Class F
Diphenyl ether glass fiber cloth laminated rod	3851		Class H
Polyimide glass fiber cloth laminated rod	3850	BMIGC41	Class H
Organic glass fiber cloth laminated rod	850	SIGC41	Class H

• 3725

It is mainly used as insulating machine parts of electrical equipment, screw and wear resistant component of machinery, etc.

• EPGC41、3851、BMIGC41、 SIGC41

They are mainly used as insulating structural components of electrical equipment and machined parts of screw.

Technical Data

		3725	3840	3850	3851	850			
		PFCC41	EPGC41	BMIGC41	<u>s</u>	SIGC41			
NEMA			-	**	: -	-			
Base material		Cotton cloth	on cloth Glass fiber cloth						
Resin		Phenolic	Ероху	Polyamide imide	Diphenyl ether	Organic silicon			
Color		Coffee	Yellow	Deep brown	Deep brown	White			
Item	Unit	Value							
Density	g/m³	1.2-1.3	1.7-1.8	1.7-1.8	1.7-1.8	1.6-1.75			
Vertical flexural strength (normal)	MPa	≥125	≥220	≥220	≥220	≥220			
Axial compressive strength	MPa	≥90	≥175	≥175	≥175	≥175			
Parallel layer breakdown voltage (90 °C transformer oil)	KV	≥10	≥40	≥40	≥40	≥40			
Insulating electrical resistance after soaking	ΜΩ	≥5	≥1000	≥1000	≥1000	≥1000			
Dielectric loss factor (50Hz)		≤0.03	≤0.03	≤0.03	≤0.03	≤0.03			
Water absorption	mg/cm ²	≤5	≤3	≤3	≤3	≤3			
Temperature degree		120	155	180	180	180			
C+	2006								

Standard: GB/T 5132-2009 IEC61212-2006

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Size of laminated rod: Diameter 8-200 mm; length 1,000 mm

Package & Storage: Packed in carton and stored in dry and clean room at normal temperature. The storage period is 12 months.

Glass Fiber Pultrusion Products Glass Fiber Pultrusion Products







Pultrusion Structural Material

830 Class B

(Unsaturated Polyester Resin)

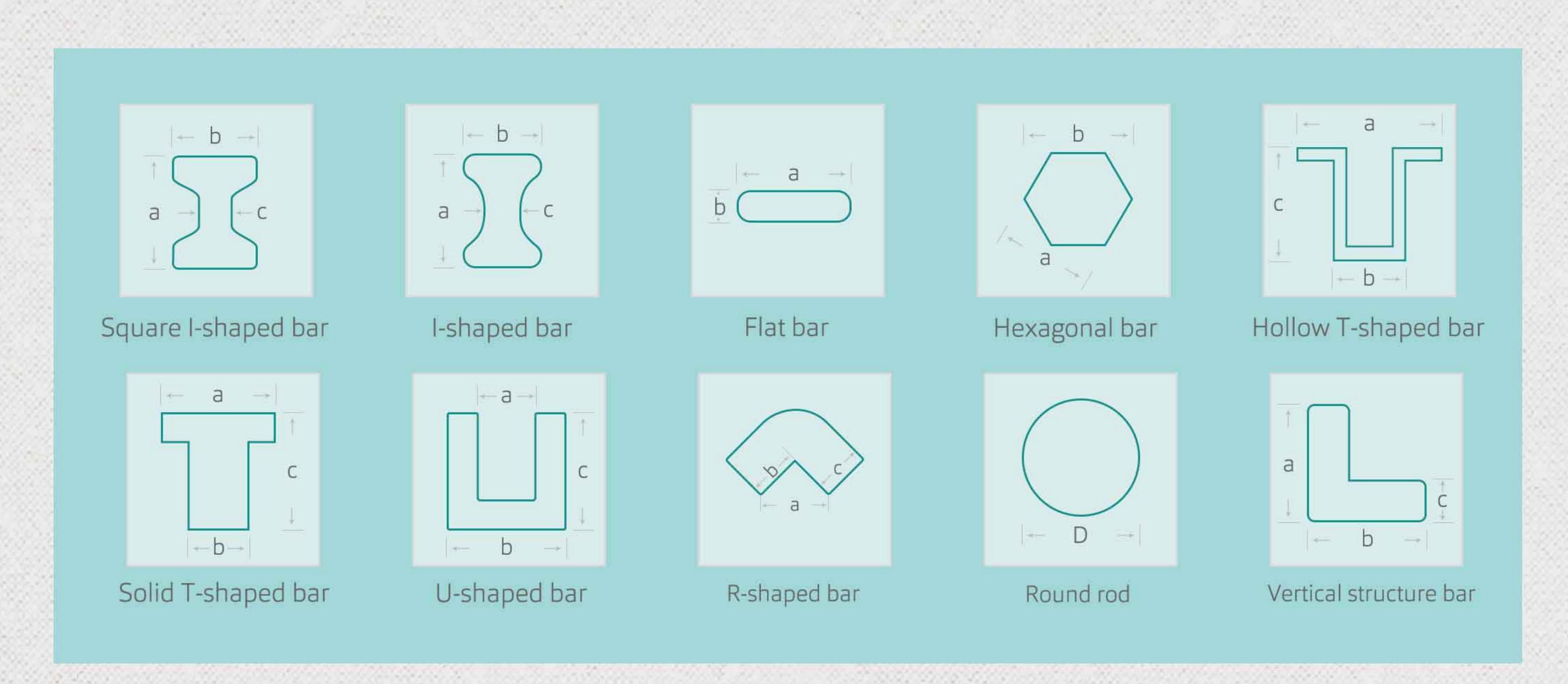
This product is made of non-alkali glass fiber yarn impregnated with unsaturated polyester resin by the traction force and finally pultruded and solidified in hot mold. It is mainly used as insulation components of electrical equipment. The product can be rectangular, I-shaped, angular, T-shaped, groove-shaped, tubular and cylindrical, etc.

Pultrusion Structural Material

350 Class F/H

(Epoxy Resin)

This product is made of non-alkali glass fiber yarn impregnated with unsaturated polyester resin by the traction force and finally solidified in hot mold. It is mainly used as insulation components of electrical equipment, screw machining parts and high voltage isolation switch. The product can be rectangular, I-shaped, angular, T-shaped, groove-shaped, cylindrical and other shapes.



Technical Data

GB/JB			830	850
Base material			Glass fiber yarn	Glass fiber yarn
Resin			Unsaturated polyester	Ероху
Color			White	Green
Properties		Unit	Index	
Density		g/m ²	1.8-2.0	1.9-2.1
Water absorption		%	≤0.5	≤0.5
Barcol hardness		: 	≥50	≥65
Tensile strength (parallel fiber direction)		MPa	≥100	≥500
Tensile modulus (parallel fiber direction)		MPa	≥1.0*10 ⁴	≥1.0*10 ⁴
Bending strength (vertical fiber direction)	23±2℃	MPa	≥150	≥340
	130℃	D. 10. 150	≥70	≥180
Bending modulus (vertical fiber direction)		MPa	≥0.6*10 ⁴	≥0.6*10 ⁴
Compressive Strength	Parallel fiber direction	MPa	≥250	≥380
	Vertical fiber direction		≥150	≥180
Shear strength		MPa	≥70	≥70
Insulation resistance		Ω	≥1.0*10 ¹²	≥1.0*10 ¹²
Surface resistivity		Ω	≥1.0*10 ¹¹	≥1.0*10 ¹¹
Breakdown voltage in the fiber direction (in air)		KV	≥45	≥50
Arc resistance		S	≥182	≥300
Flammability		: #	FVO	FVO
Standard: JB/T 10943-2010				

Mould Table

Item	Specification (a*b*c		ltem			
Square I-shaped bar	10*12*5	10*14*5	U-shaped bar	10*8*2	6*10*4	
I-shaped bar	6*6	6*7	R-shaped bar	17*17*7	19*19*7	
I-Silaped Dai	10*14	10*15	ivesita ped pai			
Flat bar	5*22 14*16		Hexagonal bar	14*14	12*12	
Hollow T-shaped bar	18*12*12	18*16*12	Round rod	6	8	
Solid T-shaped bar	18*12*12	18*16*12	Vertical structure bar	75*75*5	40*40*4.6	

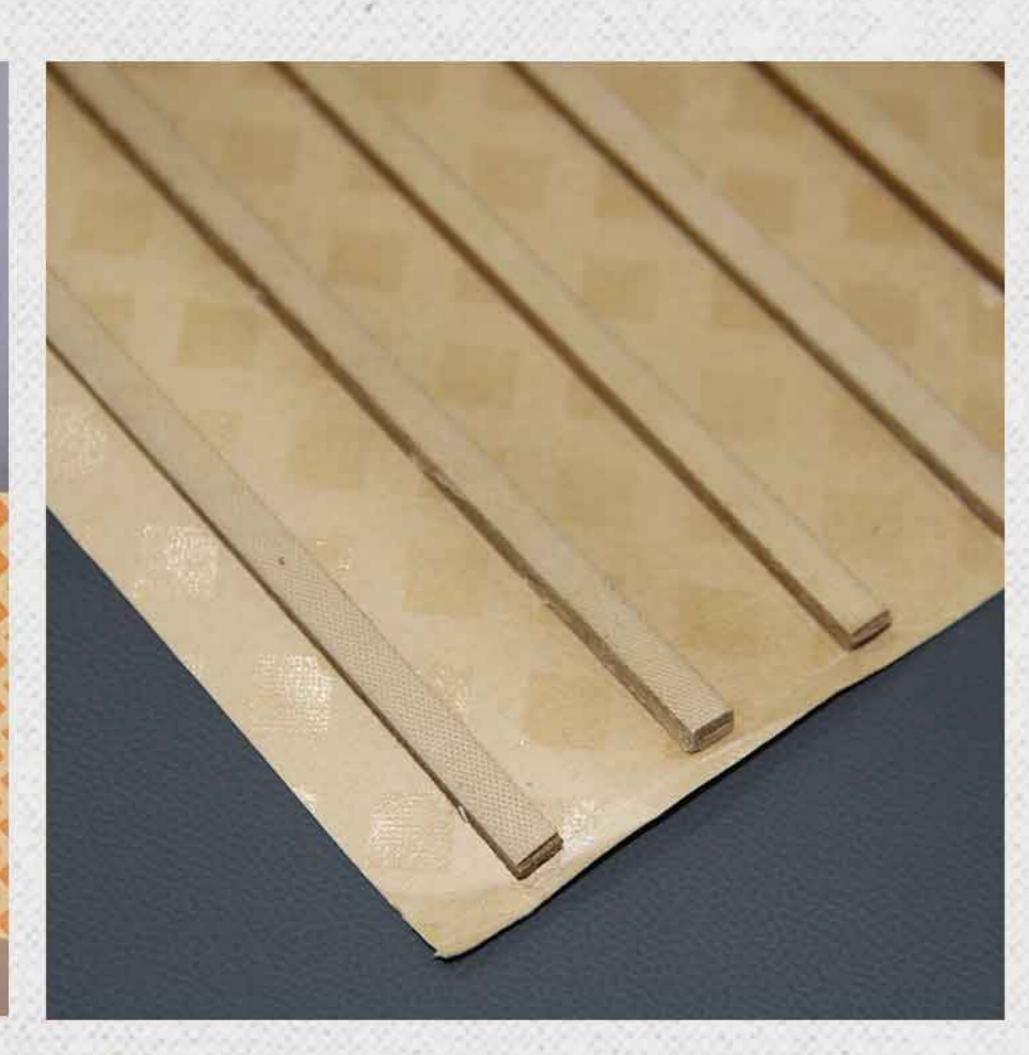
Available shapes are not limited to this table only.

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in paper carton. Store in dry and clean room at normal temperature. The storage period is 12 months.







Insulating Paper

Cable paper / Diamond dotted paper (DDP)

Electrical paper board / Oil strut belt

Crepe paper / Crepe paper pipe / Semiconductor crepe paper

Cable paper(insulating kraft paper)

Cable paper is made of 100% purity sulfate insulating wood pulp.

Specifications: Thickness: 50um, 70um, 75um, 80um, 130um, 170um, 200um

Width: 625 mm/980 mm/1920 mm(Ribbon is available)

Roll diameter: 650~1000 mm

Weight of each roll: 220~350 Kg

Diamond dotted paper (DDP)

This product is made of insulation paper coated by modified epoxy resin in the shape of rhombus. In the process of coil drying, the agglutinating and solidifying of DDP can bond the coil into a fixed unit. The bonding strength of epoxy resin is sufficient to prevent the displacement of the various layers of the winding in short circuit condition and further ensure the long-term mechanical and electrical properties of insulation structure.

Specifications: Thickness: 80um, 130um, 180um, 200um, 250um, 300um, 380um

Width: 625 mm/980 mm (Ribbon is available)

Roll diameter: 250~300 mm Weight of each roll: 45~60 Kg

Oil strut belt

This product is made of electrical board in the shape of stripe adhered to DDP. It can be combined closely with transformer coil and make coil possess more excellent mechanical and electrical properties.

Cable paper

It is widely used in HV cable, signal cable, electromagnetic wire, transformer, mutual inductor, electric reactor, etc.

DDP

It is widely used for interlayer and turn insulation of oil-immersed transformer and reactors.

Oil strut belt

It is widely used in oil-immersed transformers.

Technical Data

		Diamond dotted paper(DDP)									
-				Diamond dotted p	aper(DDP)						
NO.	Project		Unit	0.08	0.13	0.18	0.2	0.25			
1	Thickness & tolera	nce	mm	0.080±0.005	0.130±0.007	0.180±0.010	0.200±0.010	0.250±0.010			
2	Density		g/m²	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1	0.85-1.1			
3	Moisture content		%	4.0-8.0	4.0-8.0	4.0-8.0	4.0-8.0	4.0-8.0			
4	Water extract PH		-	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5			
5	Ash content		%	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0			
6	Adhesive thicknes	S	μm	6-12	6-12	6-12	6-12	6-12			
7	Oil absorbency		%	≥20	≥20	≥20	≥20	≥20			
8	Contamination to	transformer oil	-	No contamination							
9	Bond strength	Normal	KPa	≥650	≥650	≥650	≥650	≥650			
		100°C±2°C		≥400	≥400	≥400	≥400	≥400			
10	Tensile strength	MD	N/10 mm	≥60	≥110	≥160	≥180	≥230			
10	Terisine strength	TD	14/ 10 111111	≥30	≥50	≥70	≥80	≥100			
11	Florigation	MD	n/	≥2.0	≥2.0	≥2.0	≥2.0	≥2.0			
1.11	Liuligation	TD	%	≥4.0	≥4.0	≥4.0	≥4.0	≥4.0			
1 7	Toar etropath	MD	NANI	≥450	≥900	≥1350	≥1500	≥2000			
12	Elongation Tear strength	TD	MN	≥500	≥1000	≥1500	≥1700	≥2300			
10	Broakdownwoltago	In air	10.7	≥0.8	≥1.37	≥2.00	≥2.10	≥2.25			
13	Breakdown voltage	In oil	KV	≥4.00	≥7.00	≥9.00	≥9.80	≥11.50			

Diamond dotted paper (DDP) standard: JB/T1004.3-2004

Specification

Thickness (mm)	Width (mm)						
0.08	1000	1070	1120	1200	1220	1320	1900
0.13	1000	1100	1120	1200	1220	1320	1920
0.18	1000	1100	1200	1210	1990	= :	-
0.25	980	1000	1100	1200	1220	1450	1990
0.38	1000	1100	1200	1990			-

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Palletizing and 500 Kg per pallet. Store at normal temperature. Keep away from sunlight, moisture and fire. The storage period is 12 months.







Electrical Paper Pressboard / T4 Paperboard

Electrical paperboard is made of sulfate wood pulp with 100% purity processed by high-pressure. It has high mechanical strength, and high compatibility with the transformer oil.

T4 cardboard has high density, higher tightness, lower shrinkage and good flatness. It is mainly used on equipment such as transformers, capacitors, mutual inductor, etc.(namely oil clearance pad of pie winding, partition board, cardboard tube, corrugated paper, iron yoke insulation, clip insulation, end insulation, winding plate, etc.)

Specifications: Thickness: 5/1/2/3/4/5 mm

Weight for each package: 500 Kg Long * wide: 1000*2000 4200*2100

4200*3200

Electrical paper pressboard /
T4 paperboard

It is widely used in oil-immersed transformers and reactors, capacitors, switches, etc.

Technical Data

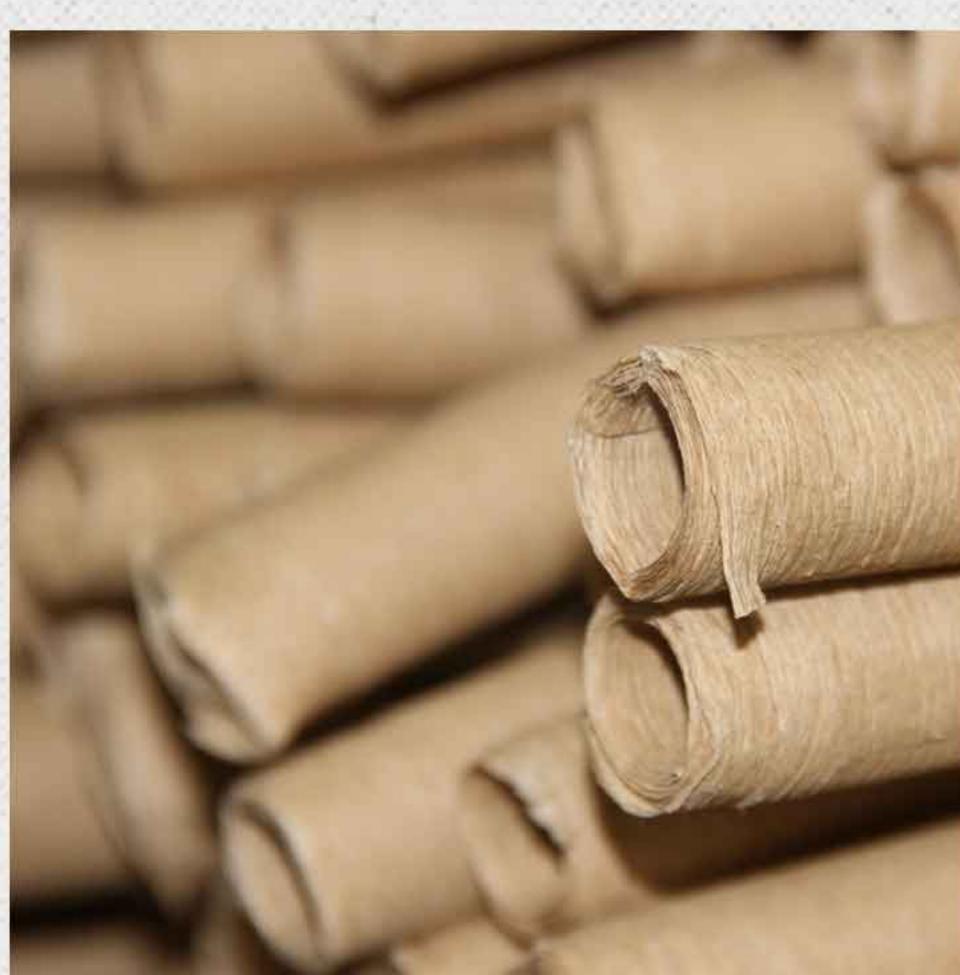
	NO. Projects			Electrical	paperboa	ard			T4 paperbo	oard				
	NO.	Proj	ects	Unit	1 mm	2 mm	3 mm	4 mm	5 mm	≤1.6 mm	>1.6~3.0 mm	>3~6.0 mm	>6~8.0 mm	
						Values								
	1	Thickness &	tolerance	%	±7.5	±5.0	±5.0	±5.0	±5.0	±7.5	±5.0	±5.0	±5.0	
	2	Apparent de	nsity	g/m²		1	.0~1.2			1.0~1.2	1.10~1.25	1.15~1.30	1.20~1.30	
	3	Moisture cor	ntent	%	≤8	≤8	≤8	≤8	≤8	≤6.0	≤6.0	≤6.0	≤6.0	
	4	Water extrac	t PH	*	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	
	5	Ash content		%	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	
	6	Oil absorbe	псу	%	≥10	≥10	≥10	≥10	≥10	≥11	≥9	≥7	≥7	
	7	Transformer		_					Ν	o contamina	ition			
	0	Tensile	MD	Man	≥110	≥110	≥110	≥110	≥110	≥100	≥105	≥110	≥110	
	8	strength	CD	Мра	≥80	≥85	≥80	≥80	≥80	≥75	≥80	≥85	≥85	
		Elongation	MD	0./	≥7.0	≥7.0	≥7.0	≥7.0	≥7.0	≥3.0	≥3.0	≥3.0	≥3.0	
	9	Elongation	CD	%	≥9.0	≥9.0	≥9.0	≥9.0	≥9.0	≥4.0	≥4.0	≥4.0	≥4.0	
			MD		≤0.7	≤0.7	≤0.7	≤0.7	≤0.7	≤0.5	≤0.5	≤0.5	≤0.5	
	10	Shrinkage	CD	%	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤0.7	≤0.7	≤0.7	≤0.7	
			Thickness		≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	≤5.0	
	11	Compressibi	lity ,C	%	~	-	**	**	~	≤10.0	≤7.5	≤5.0	≤4.0	
	12	Crve peversil compressibil		%	**				*	≥45	≥50	≥50	≥50	
	13	Conductivity extract	of aqueous	mS/m		-			=:	≤5.0	≤6.0	≤8.0	≤10.0	
	14	Electric	In air In Oil	KV/mm	≥10 ≥40	≥10 ≥30	≥10 ≥25	≥10 ≥25	≥10 ≥25	≥12 ≥40	≥11 ≥35	≥10 ≥30	≥9	
The state of				1				H-		N.	di .			

Standard: GB/T19264.3-2003 & IEC60641-3-1992

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in plastic bag and corrugated paper; store at room temperature; avoid sunlight, moisture and fire. The storage period is 12 months.







Crepe Paper

Electrical insulation crepe paper

Electrical insulation crepe paper pipe

Semiconductor crepe paper

This product is made of insulating kraft paper processed by crinkling. It has high compatibility with the transformer oil, which can be used in oil-immersed transformer, mutual inductor and electric reactor.

Electrical insulation crepe paper is made by a special process. Pipe diameters: Φ4*Φ8*1000/Φ8*Φ14*1000/Φ10*Φ20*1000 (The diameter is negotiable.)

The electric conductivity of the product is between that of the conductor and the semiconductor, and it is used in mutual inductor, transformer, power cable, partial discharge control component of switchboard at the high voltage of below 750 kV.

- Electrical insulation crepe paper Crepe paper is widely used in oil-immersed transformers, instrument transformers, reactors and other parts of package insulation, especially as lead parts of the insulation wraping.
- Electrical insulation crepe paper pipe It is mainly used in oil-immersed transformer insulation wrapping material.

Electrical Insulation Crepe Paper Technical Data

A STATE OF									
NO.	Projects		Unit	Base paper thickness	Base paper thickness				
NU.	i i ojecus		UTITE	0.05 mm	0.075 mm	0.13 mm			
1	Thickness of crepe paper		mm	0.35±0.05	0.38±0.08	0.70-0.90			
2	Ash content		%	≤0.7	≤0.7	≤0.8			
3	Moisture content		%	≤7.0	≤7.0	≤8.0			
4	Water extraction PH			6.0-8.0	6.0-8.0	6.0-8.0			
5	Oil contamination		%	< 0.1	<0.1	<0.1			
6	Tensile strength	MD	NI	30	40	50			
O	Terione outenger	CD	N	20	30	40			
		CD	mm/10 min	≥7.0	≥7.0	≥7.0			
7	Counting baimbt	CD	mm/60 min	≥30.0	≥30.0	≥30.0			
/	Suction height	MD	mm/10 min	≥20.0	≥20.0	≥20.0			
		MD	mm/60 min	≥50.0	≥50.0	≥50.0			
8	Crepe ratio		%	50	50	50			
9	Power frequency breakdown voltage Conductivity		V/layer	≥950	≥1000	≥1000			
10			ms/m	-		≤10			
11	Appearance density	g/m ²	60±10%	110±10%	120-150				
Stand	ard: IB/T 10441.3-2004								

Standard: JD/1 10771.5 2007

Semiconductor Crepe Paper Technical Data

NO.	Item	Unit	Index value	Typical value
1	Gram weight	g/m²	105120	110
2	Drawing index	Nm/g	≥28	42
3	Drawing intension	KN/m	≥2.1	3.0
4	Break elongation	%	≥45	50
5	Resistivity	kΩ	110	2.5
6	Test climate	Temperature:23℃±2℃	, Humidity 40%±5%RH	

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in plastic bag and carton. Store at room temperature. Keep away from sunlight, moisture and fire. The storage period is 12 months.

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Film Products

PET	6020	Class
(PI) Polyimide film	6050	Class
Diamond glue film		Class
Polyimide film stripe / tape		Class

PET

6020 & 6021 is a biaxial oriented polyethylene terephthalate(PET) film made through melting, casting and stretching. This product has good dielectric and high mechanical properties. It is widely used for electrical insulation, such as slot insulation, interphase insulation and liner insulation in electric motors, and also used to produce insulating flexible laminates.

(PI) Polyimide film

H class Polyimide film is a common polyimide film condensed with 4- formic acid-2- anhydride of benzene, and 4.4-diamino-biphenyl-ether oxide. This product has excellent mechanical capability, favorable electric insulation at temperature from -269°C to +260°C. It can be used in compound insulation material, adhesive tape, electric wire and motor industry, etc.

Diamond glue film

This product is made by coating electrical insulation resin in the shape of diamond on single side or double side of polyester film which is then baked into a diamond glue film in the status of semi-curing. It is mainly used for layer and turn insulation of mutual inductor and transformer.

Polyimide film stripe / tape

Polyimide film adhesive tape is made of polyimide film coated with heat resistant adhesive. It is an ideal insulating product for H class electrical equipment.

6020/6050 Technical Data

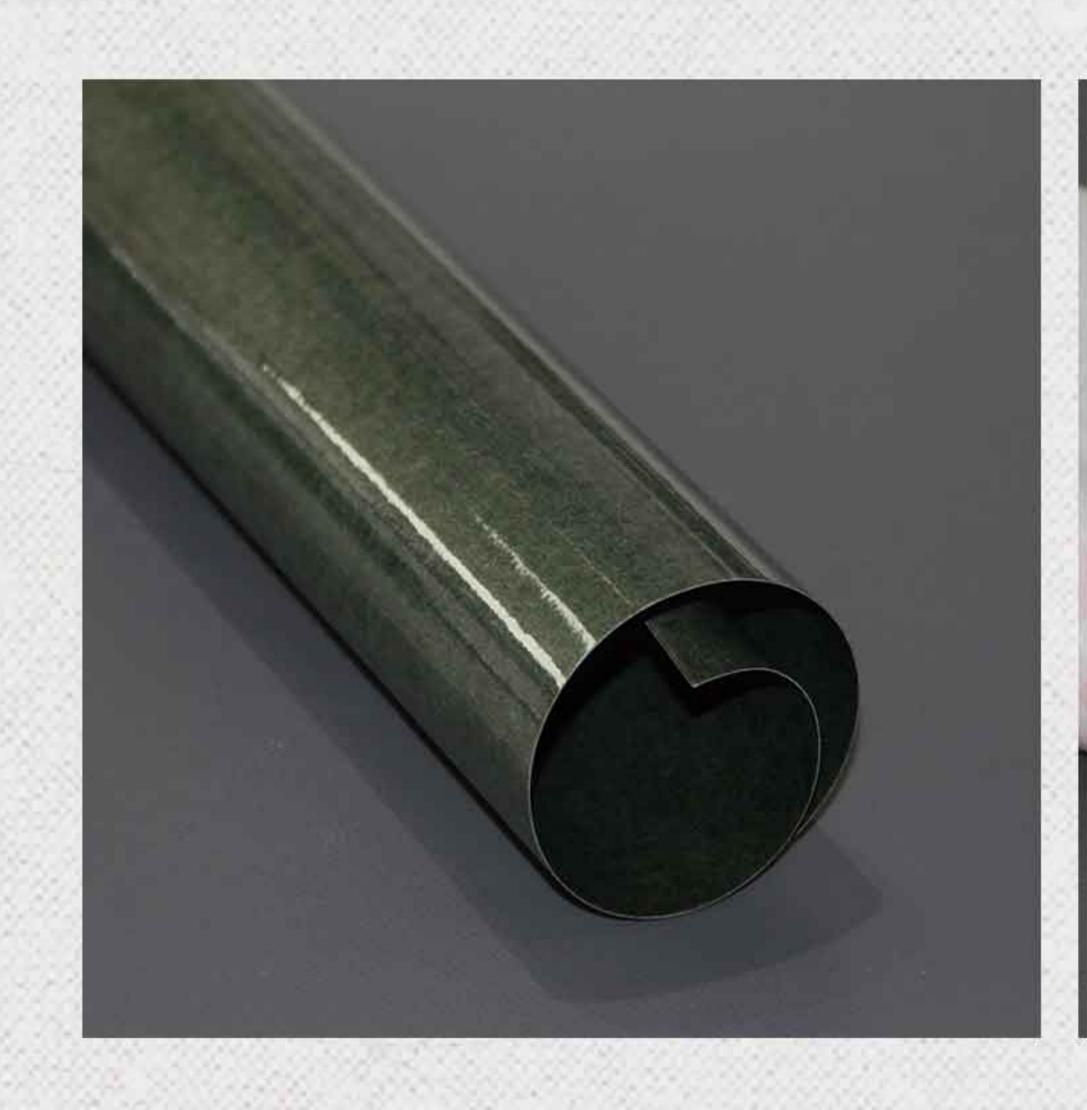
Item		Unit																		
Thickness		um	25	50	75	100	125	150	188	200	250	300	350	20 25	30	40	50	75	100	125
Tolerance		<u>+</u>	5%				4%						6%	3.0 um		4.0um	5.0um	7.5um	10um	12.5ur
Density		g/cm³					1.	39-1.4	-0					1.42-1.4	9					
Tensile strength	MD	MPa	≥150	٦					≥140			≥14(1	≥150					≥120)
Teribile strength	TD	IMILIA	2130	J					2140			2150		≥120						
Elongation		%	≥80					≥120				≥50					≥60			
Electric strength		V/um	170	130	105	90	80	75	65	65	60	55	50	200		180		130	110	95
Volume resistivity		Ω.Μ					≥	1.0*10	14							≥	1.0*10	13		
Surface resistivity		Ω					≥	1.0*10	13					≥1.0*10)*10 ¹⁵				
Shrinkage (150°C)		%				≤3	3.0				≤2.0			-		≤0.2				
Dielectric loss facto	r (50Hz)	30					<	≤0.003	3								≤0.004	+		
6020 standard: GE	3/T13542.2-	2009 IEC6	1074:1	1991			6050	stand	dard:	GB/T1	3542.	6-200	6 IEC6	51074-2:	1988	8				

Diamond Glue Film Technical Data

No	0	Properties	Unit	Requirements		
1		Base material thickness	mm	0.05±0.005	0.07±0.007	0.10±0.010
2		Single-sided plastic grid thickness	μm	17.5±2.5	17.5±2.5	17.5±2.5
3		Thermal shrinkage rate	%	≤3	≤3	≤3
4		Adhesive strength	kPa	≥350	≥350	≥350
5		Tensile strength	MPa	≥150	≥150	≥150
6		Elongation at rupture	%	≥80	≥80	≥80
7		Power frequency breakdown voltage	KV	≥6.0	≥7.0	≥9.0
8		Temperature index(TI)		≥130	≥130	≥130
St	tanda	rd: JB/T10714-2007				

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in rolls and in carton; store at room temperature; avoid fire. The storage period is 12 months.







Composite Products

Polyester film insulation paper soft flexible composite material (fish paper composite)	6520	Class E
DMD	6630/6641	Class B/F
Diamond dotted DMD		Class B/F
DMD epoxy prepreg material	6440	Class F
NMN	6640	Class H
NHN	6650	Class H
PMP capacitor paper		Class E
Polyester film composite film		Class E

6520 F-PET/P-C

This product is made of both green electric kraft paper and polyester film adhered together by heating adhesive. It has good mechanical strength, high electrical strength, smooth surface and toughness. It is widely used for slot insulation, gasket insulation and inter insulation for electrical machinery and appliances.

DMD P-PET/F-PET/P-PET 6630 / 6641 This product is a kind of composite product that is made of two layers of polyester fiber non-woven cloth adhered to one layer of polyester film in between by heating adhesive. It is widely used for slot and gasket insulation of motor, and layer insulation of transformer.

Standard size: Thickness: 0.10/0.13/0.15/0.18/0.20//0.22/0.25/0.30/0.35 Width: 980

Diamond dotted DMD

This product is made of DMD coated by modified epoxy resin in diamond shape. Compared with diamond dotted paper, it has higher mechanical and electric properties. It is widely used for layer insulation of transformer. The gap between dotted adhesive is helpful for the emission of resin air in the process of coil drying so as to form integral insulation coating. In this way, it is able to prevent corona and partial discharge effectively. The product can be also used as cable shielding isolation layer and anti-corona material of high-voltage electric motors and appliances.

Standard size: Thickness: 0.10/0.13/0.15/0.18/0.20//0.22/0.25/0.30/0.35 Width: 980

DMD Epoxy prepreg material

This product is made of DMD coated with F-class modified epoxy resin in semi-solidified state by heating. It can quickly solidify at a certain temperature and adhere firmly to copper foil, and thus form insulation structure layer with much lower shrinkage. It is widely used for layer insulation of dry-type transformer coil, slot insulation and phase insulation of class F motor.

Technical Data

	Item			Unit	Value							
1	Standard thickness		6630/6641	mm	0.13	0.15	0.18	0.20	0.23	0.25	0.30	0.35
2	Thickness tolerance		6630/6641	mm	±0.02	±0.02	±0.02	±0.02	±0.02	±0.02	±0.03	±0.03
3	Basic weight		6630/6641	g/m²	130±15	145±20	180±20	220±20	255±30	285±30	350±30	425±40
4	Film nominal thickne	ess	6630/6641	um	36	50	75	100	125	150	188	250
5	Tensile strength	Horizontal direction	6630/6641	N/10	≥60	≥90	≥120	≥140	≥180	≥190	≥270	≥320
)	Telisile strength	Vertical direction	0030/0041	mm	≥40	≥80	≥105	≥120	≥150	≥170	≥200	≥300
6	Extensibility	Horizontal direction	6630/6641	%	≥15	≥15	≥15	≥15	≥15	≥15	≥5	≥5
6	LAterisibility	Vertical direction	0030/0041	90	≥20	≥20	≥20	≥20	≥20	≥20	≥5	≥5
		Not bended	6630		≥4.0	≥6.0	≥7.0	≥9.0	≥10	≥12	≥15	≥18
7	Breakdown voltage	Not bended	6641	KV	≥5.0	≥7.0	≥8.0	≥10	≥11	≥13	≥16	≥19
1	Dieakdowii voitage	Pandad	6630	IVV	≥3.0	≥5.0	≥6.0	≥8.0	≥9.0	≥11	≥13	≥18
		Bended	6641		≥3.5	≥6.0	≥7.0	≥9.0	≥10	≥11	≥14	≥18
8	Temperature index		6630/6641	w:	130(6630	0)	155(6640))				
9	Bonding strength in normal temperature		6630/6641	=:	Non laye	red						
10	Bonding strength in	hot temperature	6630/6641	3)	n adhesiv	ve-flowing		G. 16		ered, non b		

Standard: GB/T5591.3-2008 IEC60626-3:2002

Note: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in rolls and in paper carton. Store at room temperature. Keep away from fire and sunlight. The storage period is 12 months.







NMN 6640 P-PAa/F-PET/P-PAa This product is a kind of three- layer composite material with NOMEX paper adhered to both sides of polyester film. It has excellent heat resistance and tear resistance by its paper and good dielectric strength and mechanical strength by its film. The product is used as insulation material for F/H class electric machines.

NHN 6650 P-PAa/F-PI/P-PAa

This product is a kind of three-layer composite material made of NOMEX paper that adhered to polyimide film on its both sides. The product not only has excellent dielectric and mechanical strength by its polyimide ide film, but also has great tear resistance and varnish absorption by its NOMEX Amide paper, so it is a reliable insulation material at class H(180℃).

PMP capacitor paper P-C/F-PET/P-C This product is a kind of composite material made of two-layer electrical insulation fiber paper adhered to one-layer polyester film in between. It has excellent dielectric and mechanical properties. It is mainly used for casting voltage mutual inductor, special E-class electrical motor and other electrical equipment.

Polyester film composite film F-PET/F-PET/F-PET

This product is a kind of composite material made of 2 or more layers of polyester film adhered together by F-class adhesive. It has good dielectric and mechanical properties. And it is mainly used for sleeve tubes between HV and LV coils of dry-type transformers.

Standard width: 1000 mm, 1200 mm, 1400 mm, 1600 mm. Customized size is available.

Technical Data

			NMN	NHN	NMN	NHN	NMN	NHN	NMN	NHN	NMN	NHN	NMN	NHN
Standard thickness		mm	0.15	0.15	0.17	0.17	0.2	0.2	0.25	0.25	0.3	0.3	0.35	0.35
Thickness tolerance		±mm	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Basic weight		g/m²	150	140	170	170	210	190	280	250	350	300	440	350
	MD		≥150	≥140	≥160	≥160	≥170	≥160	≥220	≥200	≥260	≥270	≥300	≥300
Toncilo etropath	MD after bending	N1/10 mm	≥80	≥70	≥90	≥90	≥100	≥90	≥130	≥160	≥200	≥140	≥180	≥180
Tensile strength	TD	N/10 mm	≥90	≥80	≥90	≥90	≥100	≥100	≥150	≥180	≥200	≥150	≥250	≥260
	TD after bending		≥70	≥50	≥70	≥70	≥90	≥60	≥120	≥100	≥150	≥90	≥180	≥130
Elongation	MD	0/-	≥15	≥15	≥15	≥17	≥15	≥15	≥20	≥17	≥20	≥15	≥20	≥17
Liongation	TD	%	≥20	≥15	≥20	≥17	≥20	≥15	≥20	≥17	≥25	≥15	≥25	≥17
Broakdown voltago	No bending	1/1/	≥7.0	≥7.0	≥8.0	≥9.0	≥11.0	≥10.0	≥13.0	≥10.0	≥15.0	≥10.0	≥20.0	≥10.0
breakdown voitage	After bending	KV	≥6.0	≥6.0	≥7.0	≥8.0	≥9.0	≥8.0	≥12.0	≥8.0	≥13.0	≥8.0	≥16.0	≥8.0
Tensile strength Elongation Breakdown voltage Adhesion	As received		No del	aminatio	n									
Adriesion	180±2℃/10 min		No del	aminatio	n, no blo	lder, no	gel							

NMN/NHN standard: GB/T5591.3-2008, IEC60626-3:2002

N1		It a ma				
IN	10.	Item	Unit		Value	
1		Nominal thickness	mm	0.05	0.075	0.10
2		Thickness tolerance	mm	±0.005	±0.007	±0.01
3		Grammage and deviation	g/m ²	65±7	90±9	140±14
4		Tensile strength(lengthwise)	N/10 mm	≥50	≥70	≥100
5		Breakdown voltage	KV	≥5	≥7	≥10
6		Normal bonding strength			No delamination	
7		Thermal bonding strength	130±2℃/10 min	Noc	lelamination, no bladde	r, no gel
8		Shrinkage	%		≤3	

Standard: GB/T5591.3-2008, IEC60626-3:2002

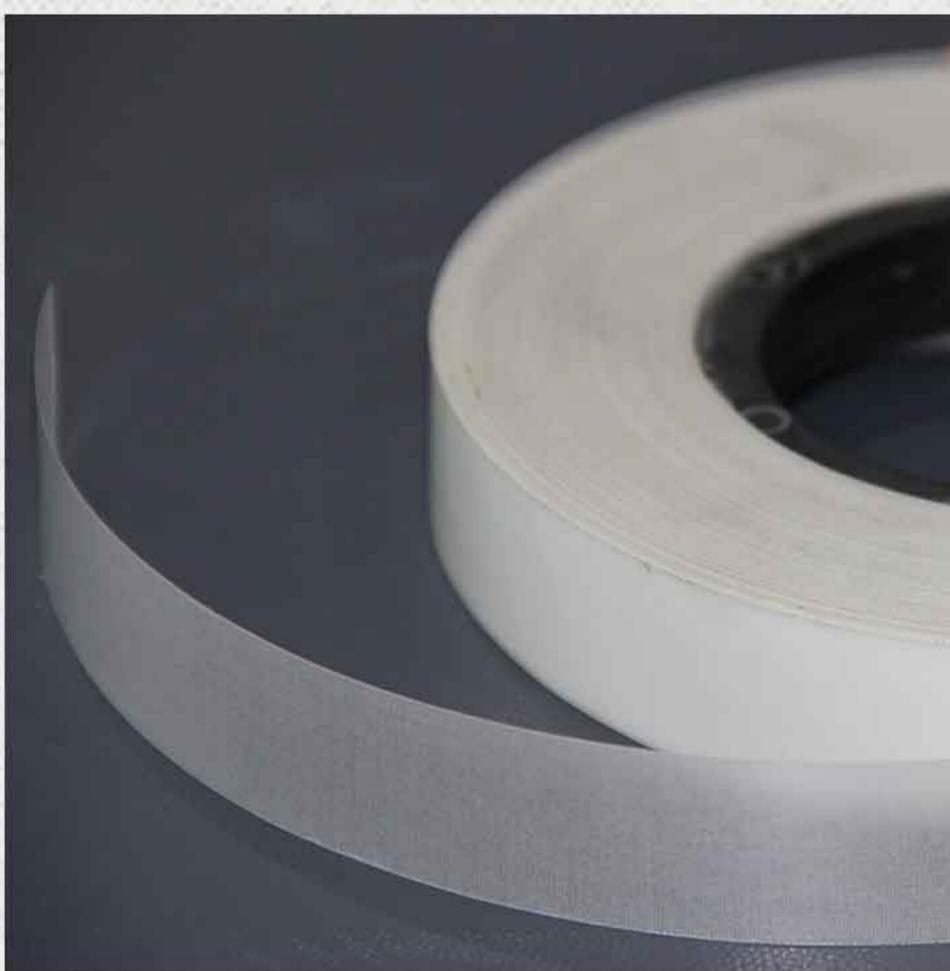
NO.	Performance	Unit	Value		
1	Thickness	mm	0.5	1.1	1.4
2	Thickness tolerance	mm	±0.045	±0.11	±0.14
3	Appearance density	g/m ²	700±70	1480±148	2000±220
4	Breakdown voltage	KV	≥25	≥30	≥35
5	Monolayer film thickness	μm	250	350	350
Stand	ard: GB/T5591.3-2008, IEC60626-3:2002				

Notes: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in rolls and in paper carton. Store at room temperature. Keep away from fire and sunlight. The storage period is 12 months.

Insulation Impregnated Products Insulation Impregnated Products I







Varnished Cloth

Oil varnished silk	2210	Class A
Oil synthetic fiber varnished silk	2310	Class A
Alcohol acid glass varnished cloth	2432	Class B
Polyester glass varnished cloth	2440	Class F
Silicone glass varnished cloth	2450	Class H

Description

Item	Model	Main components	Main components	Characteristics	Heat resist- ance class
Oil varnished silk	2210	Silkworm silk	Oily insulating varnish	Used as the binding and liner insulation in	A
Oil synthetic fiber varnished silk	2310	Synthetic fiber silk	Oily insulating varnish	motor and mutual inductor.	A
Alcohol acid glass varnished cloth	2432	Alkali-free glass cloth	Alkyd insulating varnish	Has good dielectric property, mechanical property and heat resistance, oil resistance,	В
Modified polyester glass varnished cloth	2440	Alkali-free glass cloth	Modified polyester insulating varnish	and humidity resistance. Can be used as coil insulation, motor banding and liner insulation in oil-immersed transformers, oil	F
Silicone glass varnished cloth	2450	Alkali-free glass cloth	Silicone insulating varnish	circuit breakers and other electrical equip-	Н

Technical Data

Performance Thickness										
Performance			Unit							
Thickness			mm	0.08	0.1	0.12	0.15	0.18	0.2	0.25
		Warp direction(min value)		≥16	≥18	≥20	≥24		E	9)
	2210/2310	Weft direction(min value)		≥10	≥12	≥14	≥18	-		
		45°Angle(min value)	N1/10 mm	≥10	≥12	≥14	≥18	2770		
strength		Warp direction(min value)	N/10 mm	-	≥65	≥85	≥105	≥111	≥118	≥131
	2432	Weft direction(min value)		意	≥45	≥52	≥65	≥78	≥85	≥98
		45°Angle(min value)		:#:	≥40	≥60	≥65	≥65	≥70	≥80
	2210/2310	23±2℃(median)		≥4.8	≥5.8	≥7.2	≥8.7	-	-	-
	2432	23±2℃(median)		-	≥5.0	≥6.0	≥7.0	≥8.0	≥9.0	≥10.0
	2210/2310	In wetting state at 23±2℃		≥2.3	≥3.5	≥4.1	≥4.7	-	=	-
	2440	In wetting state at 23±2℃		-	≥2.5	≥3.0	≥3.5	≥4.0	≥4.0	≥4.5
	2450	In wetting state at 23±2℃			≥2.0	≥2.2	≥2.8	≥2.8	≥2.8	≥3.0
Breakdown voltage	2210/2310	105±2℃(median)	KV	≥3.0	≥4.3	≥5.2	≥5.8	: = :	 :	-
	2440	155±2℃		-	≥2.5	≥3.0	≥3.5	≥3.8	≥4.0	≥4.5
	2450	180±2°C		-	≥2.0	≥2.5	≥3.0	≥3.0	≥3.0	≥3.5
	2210/2310	6% extension at 45° angle		≥2.7	≥4.1	≥5.0	≥6.1	-	-	_
	2440	6% extension at 45° angle		(=)	≥3.0	≥3.0	≥3.5	≥4.0	≥4.0	≥4.5
	2450	6% extension at 45° angle			≥2.5	≥2.5	≥3.5	≥3.5	≥3.5	≥3.5
	2210/2310	Thermoplasticity	_			reatment f id no fall-o			between t	he var-
	2210/2310	Influence of oil on glass varnish cloth	-			transform , and no fa			ding betwe	een the

2210/2310 Standard: JB/T 8147-1999 2432/2440/2450 Standard: JB/T 8148-1999

Note: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Packed in rolls, avoid fire and store at room temperature. The storage periodis 12 months.

Insulation Impregnated Products Insulation Impregnated Products









Insulation Fiber Products

Alkali-free glass fiber tape / Alkali-free waxless glass fiber tape

Electrical polyester shrinkable tape

Electrical white cloth tape

Unidirectional binding tape

Alkali-free glass fiber tape
GB/T20627.1-2006 IEC61067-2:1992
/ Alkali-free waxless glass fiber tape
GB/T20627.1-2006 IEC61067-2:1992

It is a kind of banded-shaped insulation product woven by alkali-free glass fiber. It is flame retardant, high temperature resistant and well insulated, which is suitable for insulation binding on transformers, reactors, electrical motor.

It is made from impregnating treated alkali-free glass fiber yarn; it can be well combined with insulating paint and resin. Mainly used for insulation binding on dry-type transformers and high standard electrical appliances. Structure: Plain weave

Electrical polyester shrinkable tape GB/T20630.2-2006 /IEC61068-2:1991 It is a kind of banded-shaped insulation material woven by polyester fiber. It is used for coil binding and fastening on transformers, reactors, electric motors and other products. Structure: Plain weave According to different shrinkage rates, it is divided into: electrical polyester high shrinkage tape(shrinkage rate $40\% \sim 45\%$) / electrical polyester low shrinkage tape(shrinkage rate $18\% \sim 23\%$).

Electrical white cloth tape

It is woven from pure cotton yarn. Widely used as insulating coil binding on motor, electrical equipment, and transformers.

Unidirectional binding tape Class B/F/H

It has good electrical insulation properties, good flexibility and high tensile strength, which can work continuously at 130 $^{\circ}$ C, 155 $^{\circ}$ C and 200 $^{\circ}$ C according to different heat-resistance classes. It's the most suitable banding material for large motor, transformer, lightning arrestor and inductor.

Product Specification

	Alkali-free glass fiber tape	Alkali-free waxless glass fiber tape	Electrical polyester shrinkable tape	
Thickness mm	0.10/0.13/0.15/0.20	0.10/0.15	0.20/0.25/0.35	0.30/0.35
Width mm	20/25/30/50	20/25/30	10/15/20/25/30/40	15/20/25/30
Length m (roll)	30/50	30/50	30/50	30/50

		Non-alkali fiberglass yarn thermosetting resin
	Items	Specification
	2830(B class)/2841(F class) parallel unidirectional binding tape	Thickness 0.17×25 mm, 0.17×50 mm
	2841(F class)/2851(H class) parallel unidirectional binding tape	Thickness 0.3×25 mm, 0.3×50 mm

Technical Data

99							
	NO.	Properties	Unit	2830	2840	2841	2851
	1	Thickness and tolerance	mm	0.17±0.03	0.17±0.03	0.30±0.03	0.30±0.03
	2	Width	mm	25/50	25/50	25/50	25/50
	3	Volatile content	%	≤5.0	≤5.0	≤5.0	≤5.0
	4	Resin content	%	≤27±2	≤27±2	≤27±2	≤27±2
	5	Soluble resin content	%	≥90	≥90	≥90	≥90
	6	Ring sample normal tensile strength	MPa	≥8.00*10 ²	≥8.00*10 ²	≥9.0*10 ²	≥9.0*10 ²
	7	Ring sample thermal tensile strength	MPa	≥5.00*10 ²	≥5.00*10 ²	≥5.00*10 ²	≥5.00*10 ²
	8	Ring sample elongation at break	%	≤4.0	≤4.0	≤4.0	≤4.0
0.000	9	Temperature index	#-:	130	155	155	180
	Standard: GB/T22471.2-2008 JB/6236.3-1992						

Storage: Dry and ventilated rooms, avoid high temperature and direct sunlight, storage period of one year.

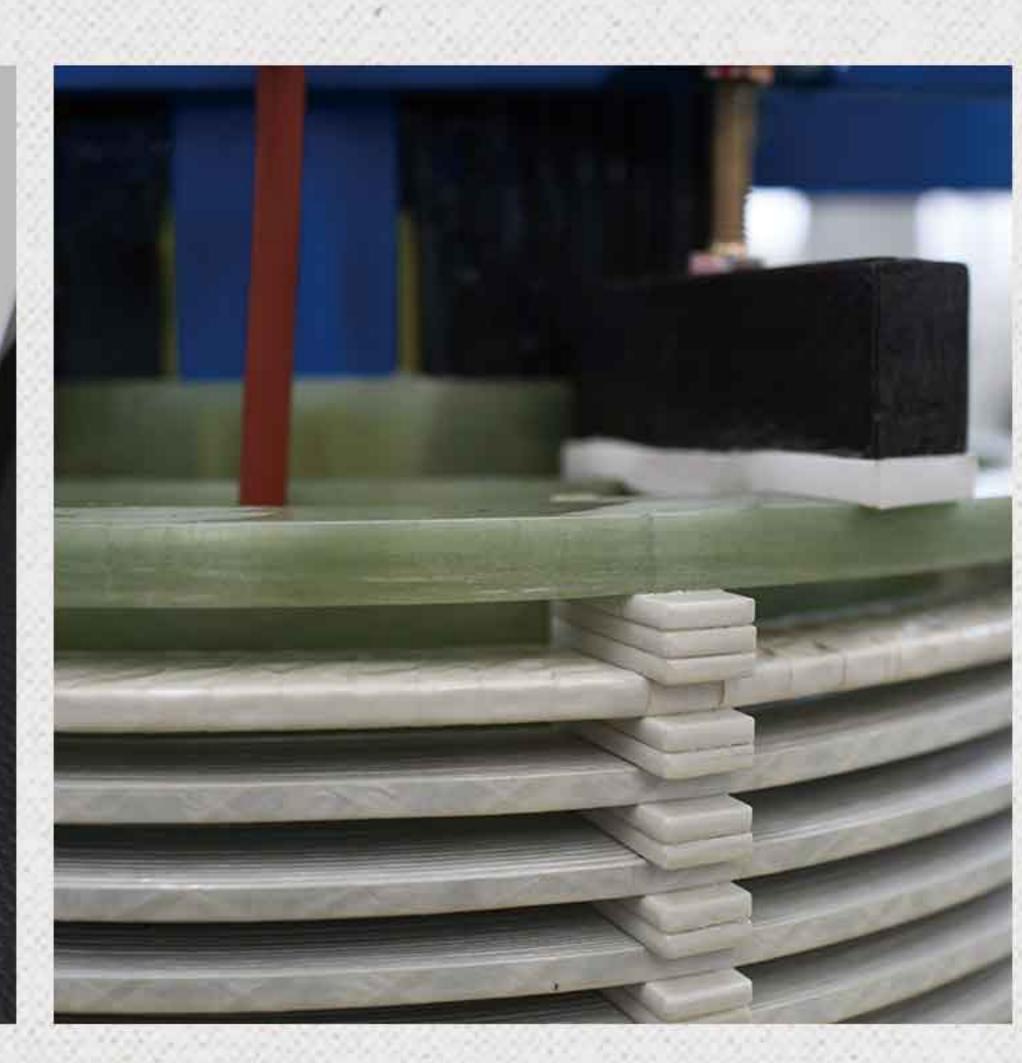
Unidirectional binding tape store in room temperature < 10 °C.

Packing: Moisture-proof plastic bags packaging and then loaded into the box.

Mould Plastic、SMC ■ Mould Plastic、SMC ■







SMC

It is mainly electrical type and widely used in switchgear and electrical products accessories.

The color is white or orange, but it is also possible to produce the other colors according to the customer's requirements.

Size specification: 1000*2000 mm

SMC

It's widely used in switchgear and electrical products accessories.

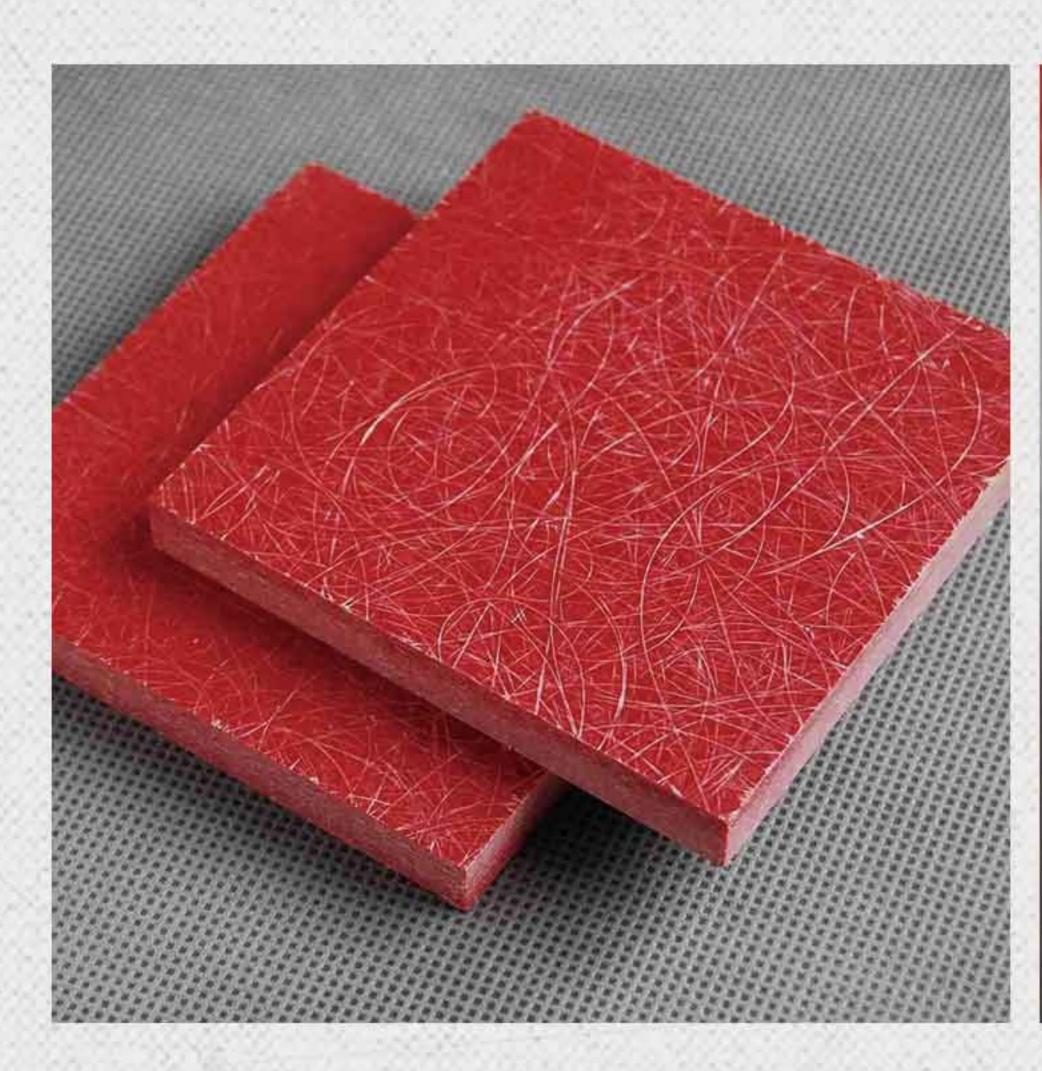
Technical Data

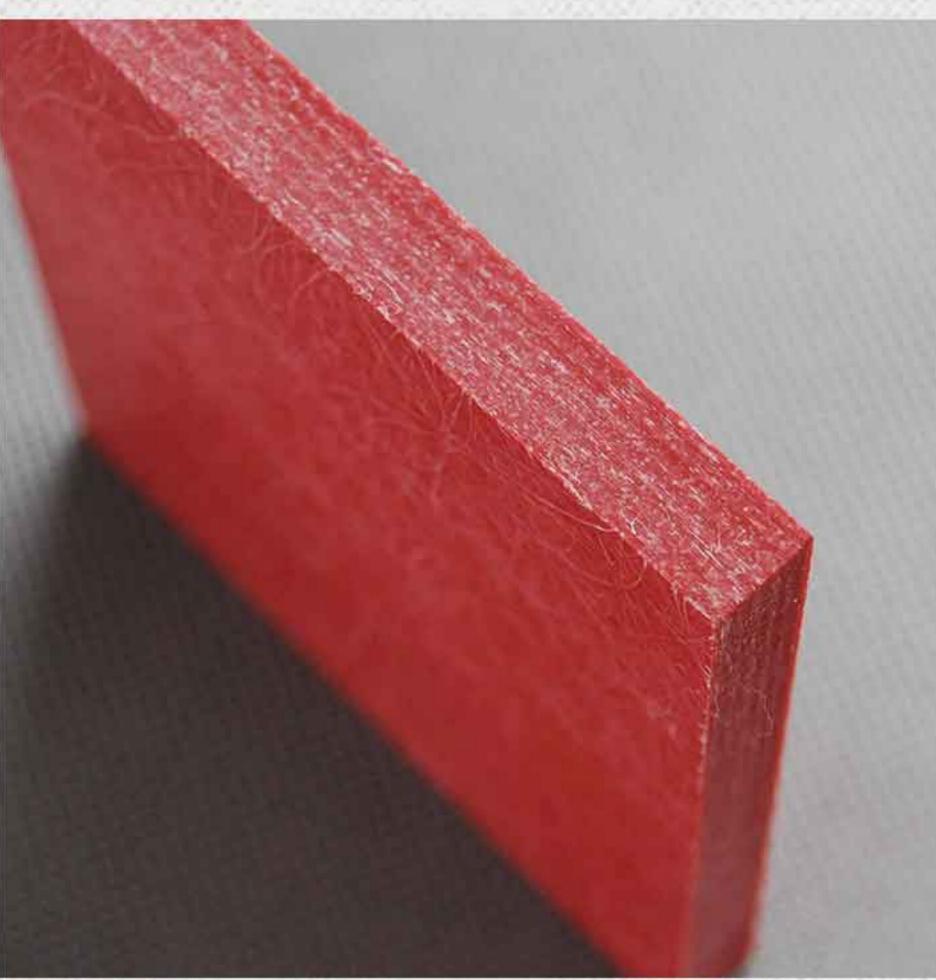
No	Performance	Unit	Test outcome
1	Stretch(elastic) modulus	Мра	1.62*104
2	Bending strength(normal 130 °C)	Мра	190/122
3	Bending(elastic) modulus	Мра	9.80*10 ³
4	Compressive strength	Mpa	165
5	Impact strength(simple beam, no gap)	kJ/m²	86
6	Impact strength(cantilever)	kJ/m²	79
7	Shear strength	Мра	47
8	Flame retardant(FV)	class	V-0
9	Hot bar	class	Bh2-8 mm
10	Electrical strength(normal oil, Φ20mm Ball electrode)	MV/m	20.4
1 1	Parallel to the breakdown voltage	KV	78.6
12	Relative permittivity(1MHZ)		4.03
13	Dielectric loss factor(1MHZ)	:=:	9.27*10 ⁻³
14	Insulation resistance(Normal)		8.9*10 ¹⁴
14	Insulation resistance(soaking 24 h)	77	3.0*1014
15	Proof tracking index(PTI)	<u>-</u> :	600
16	Comparative tracking index(CTI)		600
17	Resistance to tracking(2.5 KV, 360 min)	:=:	1B2.5pass
18	Maximum erosion depth	mm	0.7
19	Resistance to tracking(2.5 KV, 300 min)		1A2.5pass
20	Maximum erosion depth	mm	0.3
21	Water absorption	mg	25.8
22	Density	g/cm³	1.70
Standar	d: JB/T 10946-2010		

Notice: The above table reflects only typical or average data, just for providing practical advice in practical application as far as possible, the data does not assume any responsibility for the use of the product or legal liability.

Package & Storage: Tray packaging. Keep at room temperature; avoid moisture and sunlight; avoid being stored in bending state.

Mould Plastic、SMC Mould Plastic、SMC







GPO-3 / UPGM-203 Insulation Plate

It is a kind of hard insulation plate made by impregnating alkali-free fiber mat with unsaturated polyester resin paste, and being laminated with appropriate additives under high temperature, which can be used for mechanical and electrical insulation. It has high electrical performance under high humidity, good mechanical properties at moderate temperatures, also properties such as flame resistance, arc resistance and tracking resistance.

Size specification: 1000*2000mm

- Application in circuit breaker: frame type circuit breaker: safety baffle, safety cover board, spacer liner, interphase partition board and so on.
- The application of the plastic shell type circuit breaker: the interphase partition board, the arc extinguishing chamber arc plate and so on.

Technical Data

NO.	Item	Unit	Item data	
1	Bending strength	Мра	≥180 (normal) ≥90(130°C/1h)	
2	Impact strength(notch)	kJ/m²	≥60	
3	Adhesive strength	N	≥3800	
4	Dielectric strength(90 ℃±2℃ oil)	MV/m	≥12	
5	Arc resistant	S	≥180	
6	Proof tracking index(PTI)	V	≥600	
7	Impact voltage(90 °C±2°C oil)	KV	>42	
8	Density	g/cm³	1.85-2.10	
9	Dielectric loss factor(1MHZ, 24 hours dipping in 23 ℃ water)	=	≤0.06	
10	Relative permittivity(1MHZ, 24 hours dipping in 23 °C water)		≤4.5	
11	Insulation resistivity(24h soaking in water after)	Ω	≥1.0*10 ¹²	
12	Heat distortion temperature	°C	≥240	
13	Water absorptionD-24/23	=	≤0.15	
14	Barcol	8	≥50	
15	Flammability	Class	UL940 Fire time≥75 s Burning time≤85 s	
Stand	Standard: GB/T 1303.3-2008			

Note: The data in the above table only represents typical or average data, just for reference in practical application. It does not bear any responsibility for the use of the product or related legal liability.

Package & Storage: Tray packaging. Keep at room temperature; avoid moisture and sunlight; avoid being stored in bending state.

PREFERRED CHOICE OF INSULATION MATERIALS

With the commitment to R&D of insulation materials for 60 years, products cover 7 major categories.

Application: electric machinery, transformer by transmission and distribution, electronic communication.

Advantage

- Fully meeting the design requirements of insulation system
- Perfect TQM system
- Professional customized services, a rapid response to customers' needs
- Superior insulation performance
- Professional solution provider

Case:

XJ Electrical has had over 500 clients specializing in electrical equipment manufacturing both at home and abroad over the past 60 years. It is the first choice in insulation materials for more than 30% of top transformer manufacturers in China, and the most reliable supplier for France Schneider Electric and British Electric Industry Company in China.

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