君华股份
JUNHUA PEEK

Fiber Reinforced Thermoplastic Composites

JH®FRTP
PEEK®FRTP

www.ChinaPEEK.com

COMPANY PROFILE

8000+
Industry Elite Customers

15000+
Square Meters of Standardized Plant

20000+
PEEK Product Application Cases

Established 2007, JunHua ChinaPEEK in now a company with a full industrial chain of PEEK including PEEK resin polymerization, extrusion, and components processing. We are offering our PEEK solutions globally.

Changzhou Junhang High Performance Composite Material Co., Ltd. is a wholly-owned subsidiary of Junhua ChinaPEEK, focusing on the R&D, production, processing and sales of thermoplastic composite materials such as CF, GF reinforced PEEK, PPS, PEI, PPSU. The products mainly include thermoplastic composite prepregs and profiles, which are widely used in high-end fields such as aerospace,medical equipment and nuclear power.

Quality System Certification

Intellectual Property

NO.	Patent Number	Application Date	Name	Type	State
1	ZL201910443696.8	2019/05/27	A continuous CF/PEEK thermoplastic composite material and its preparation method	Invention	Grant
2	ZL202010420353.2	2020/05/18	CF/PEEK composite material with excellent high temperature mechanical properties and a preparation method thereof	Invention	Grant
3	ZL202022410490.6	2020/10/27	A processing tool for a transverse targeting bracket of femoral intramedullary nails	Utility model	Grant
4	ZL202011514390.6	2020/12/21	High-temperature, wear-resistant PEEK matrix composite material and preparation method thereof	Invention	Grant
5	ZL202011546384.9	2020/12/24	The invention relates to a continuous fiber reinforced thermoplastic material3D printing filament preparation device and process	Invention	Grant
6	ZL202211246821.4	2022/10/12	Continuous carbon fiber CF/PAEK thermoplastic composite femur bone plate and a preparation method thereof	Invention	Grant
7	ZL202211627469.9	2022/12/16	Forming method of unidirectional continuous fiber reinforced thermoplastic resin matrix composite products	Invention	Grant
8	ZL202310210897.X	2023/03/07	The invention relates to a preparation method of high-performance carbon fiber reinforced PEEK prepreg material and a PEEK base plate	Invention	Grant

TESTING EQUIPMENTS

Ultrasonic Detector

It is mainly used to detect defects such as inclusions, looseness, cracks and pores inside the product.

Thermal Gravimetric Analyzer

The use of heat loss of weight to detect the temperature-mass change relationship of a substance.

Density Detector

Mainly used to detect the actual density of the product

FTIR Spectrometer

FTIR is mainly used for material identification. It has an automatic identification and matching function and can distinguish materials with different group structures such as PEEK, PPS, PPSU, and PI.

Differential Scanning Calorimeter

Differential scanning calorimetry is a technique that measures the energy difference (or power difference) per unit time between a substance and a reference as a function of temperature under programmed temperature control.

FD5000-P Pneumatic Fatigue Tester

Used to simulate and test the fatigue performance of materials or components under repeated pneumatic stress.

Hardness Tester

mainly used to test Rockwell hardness of product

Universal Testing Machine

Mainly used to test the general mechanical properties such as tensile strength and modulus of the product. (can be tested at -100-200 °C)

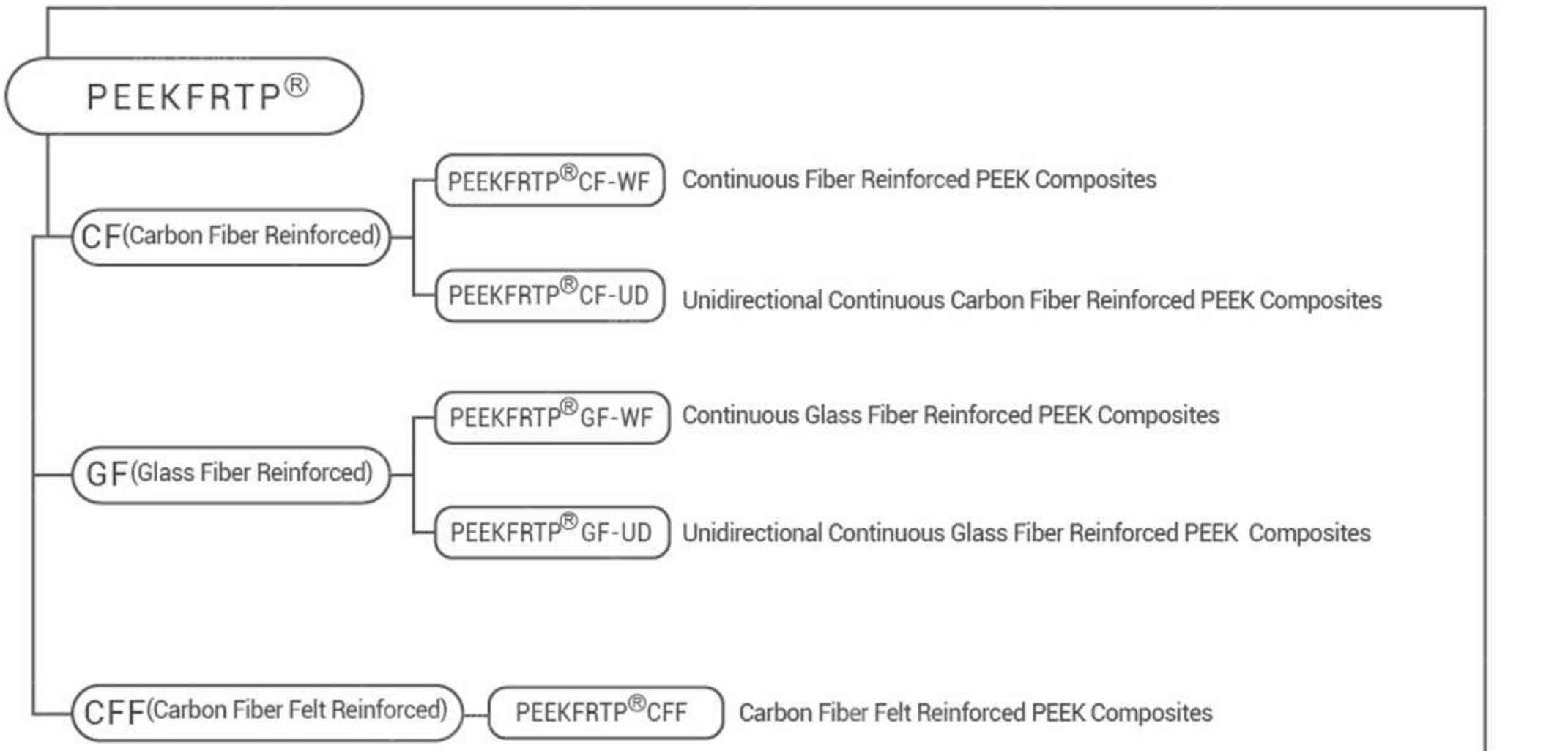
Impact Tester

Mainly used for material impact strength testing.

X-ray Foreign Matter Detection Equipment

Mainly used to detect whether the product is brought into the foreign material during the production process, such as metal cutting.

PRODUCT SERIES



PEEKFRTP® CF-WF

Continuous Fiber Reinforced PEEK Composites

Product Overview

PEEKFRTP® CF-WF is an advanced high-performance thermoplastic composite material. It utilizes T300-3K satin carbon fiber fabric as the reinforcing material and semi-crystalline thermoplastic polymer PEEK as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance, Corrosion resistance and Biocompatibility. The long-term use temperature reaches 280 ℃. It is widely used in aerospace, medical devices, petroleum and petrochemical industry, automobile industry and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value
Resin Properties			
Density	ISO 1183	g/cm³	1.3
Glass Transition Temperature (T_g)	ISO 11357.2	℃	143
Melting Temperature (T_m)	ISO 11357.3	℃	343
Processing Temperature (T_p)	-	℃	360-400
Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m²	285
Prepreg Areal Density	HB7736.2-2004	g/m²	485
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.3±0.02
Density (Plywood)	ASTM D792	g/cm³	1.55
Mechanical Properties			
Tensile Strength (Meridional)	ASTM D3039	MPa	740
Stretch Modulus (Meridional)	ASTM D3039	GPa	60
Bending Strength (Meridional)	ASTM D7264	MPa	950
Bending Modulus (Meridional)	ASTM D7264	GPa	58
Compress Strength (Meridional)	ASTM D6641	MPa	620
Compression Modulus (Meridional)	ASTM D6641	GPa	58
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	82
In-Plane Shear Strength	ASTM D3518	MPa	146
In-Plane Shear Modulus	ASTM D3518	GPa	4.5
Open-Hole Tensile Strength (OHT)	ASTM D5766	MPa	250
Open-Hole Compressive Strength (OHC)	ASTM D6484	MPa	330
Bearing strength	ASTM D5961	MPa	810
Compressive After impact strength (CAI, -6.67J/mm)	ASTM D7137	MPa	295

PEEKFRTP® CF-WF

Continuous Fiber Reinforced PEEK Composites

Prepreg, Laminates, Rods, Insert molding, CNC machining, Custom Profiles or Special-Shaped Components, etc.

Laminate Conventional Size

Size Can Be Customized

Length * Width	380*240mm / 440*330mm / 1000*600mm / 1200*600mm / 1100*900mm
Thickness	0.5mm-70mm

Typical Applications

▲ Aircraft Angle Brackets

▲ Continuous Supports

Aerospace

Aircraft angle brackets, continuous supports, retaining clips, fuselage panels, window frames, and other products. These are used to replace metal materials such as aluminum alloy and stainless steel, as well as traditional thermoset composites.

Medical

External fixation brackets, intramedullary nail targeting devices, and other products.These can replace metal materials such as cobalt-chromium alloys and titanium alloys.

▲ Intertan Femoral Surgical Instruments

▲ Proximal Humerus Nail Targeting

▲ PEEK Thrust Wear Block

▲ Single Screw Compressor Star Wheel Plate

Other Areas

Products such as hydrodynamic bearing thrust pads for high-speed mechanical devices and oil thrust plates for axial piston pumps. These can replace materials like metals, carbon, ceramics, and bronze.

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PEEKFRTP® CF-UD

Unidirectional Continuous Carbon Fiber Reinforced PEEK Composites

Product Overview

PEEKFRTP®CF-UD is an advanced high-performance thermoplastic composite material. It uses T700-12K or T800-12K unidirectional carbon fiber as the reinforcing materials and semi-crystalline thermoplastic polymer PEEK as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance, Corrosion resistance and Biocompatibility. The long-term use temperature reaches 280 ℃.

Technical Data Sheet

Items	Standard	Unit	Typical Value	
Resin Properties				
Density	ISO 1183	g/cm³	1.3	
Glass Transition Temperature (T_g)	ISO 11357.2	℃	143	
Melting Temperature (T_m)	ISO 11357.3	℃	343	
Processing Temperature (T_p)	-	℃	370-400	
Physical Properties				
Fiber Areal Density	HB7736.3-2004	g/m²	145	
Prepreg Areal Density	HB7736.2-2004	g/m²	220	
Resin Content	HB7736.5-2004	%	34±3	
Single Ply Cured Thickness	-	mm	0.14±0.02	
Density (Plywood)	ASTM D792	g/cm³	1.58	
Mechanical Properties			T700-12K UD	T800-12K UD
Tensile Strength (0°)	ASTM D3039	MPa	2200	2700
Tensile Modulus (0°)	ASTM D3039	GPa	130	160
Tensile Strength (90°)	ASTM D3039	MPa	82	-
Tensile Modulus (90°)	ASTM D3039	GPa	9.2	-
Tensile Strength (0°/90°)	ASTM D3039	MPa	880	-
Tensile Modulus (0°/90°)	ASTM D3039	GPa	73	-
Bending Strength (0°)	ASTM D7264	MPa	1900	2900
Bending Modulus (0°)	ASTM D7264	GPa	116	185
Bending Strength (90°)	ASTM D7264	MPa	140	-
Bending Modulus (90°)	ASTM D7264	GPa	8.1	-
Compression Strength (0°)	ASTM D6641	MPa	1200	1250
Compression Strength (0°)	ASTM D6641	GPa	120	160
Interlayer Shear Strength (0°)	ASTM D2344	MPa	110	125
In-Plane Shear Strength(± 45°)	ASTM D3518	MPa	148	-
In-Plane Shear Modulus(± 45°)	ASTM D3518	GPa	4.8	-
Open-Hole Tensile Strength	ASTM D5766	MPa	355	-
Open-Hole Compressive Strength	ASTM D6484	MPa	295	-

PEEKFRTP® CF-UD

Unidirectional Continuous Carbon Fiber Reinforced PEEK Composites

Prepreg, Laminates, Rods, Insert molding, CNC machining,
Custom Profiles or Special-Shaped Components, etc.

Product Size

Size Can Be Customized

Prepreg: Standard widths include 300mm and 600mm, with narrow tape widths available in 6.35mm, 12.7mm, and 25.4mm. Other widths can be customized.

Laminates: Standard sizes include 440292mm and 500380mm, with thicknesses ranging from 0.5mm to 40mm. Other sizes can be customized. Layup angles such as 0°, 90°, and ±45° can be tailored as needed.

Rods: Standard lengths include 440mm and 500mm, with customizable diameter sizes.

Typical Applications

▲ Aircraft Angle Brackets

Aerospace

Connection brackets, fuselage panels, fuselage frame beams and ribs, window frames, and other products. These are used to replace metal materials such as aluminum alloy and stainless steel, as well as traditional thermoset composites.

Medical

Bone plates, bone screws, and other products. These can replace metal materials such as pure titanium, cobalt-chromium alloys, and titanium alloys.

▲ PEEK Bone Plate

▲ Analytical Instrument Infrared Cover Plate

Other Areas

New energy motor rotor sheath, automotive steering device, magnetic pump isolation sleeve, bushing, impeller wear ring and other products.

◀ New Energy Motor Rotor Sheath

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PEEKFRTP® GF-WF

Continuous Glass Fiber Reinforced PEEK Composites

Product Overview

PEEKFRTP® GF-WF is an advanced high-performance thermoplastic composite material. It utilizes electronic grade or high-strength glass fiber fabric as the reinforcing material and semi-crystalline thermoplastic polymer PEEK as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Damp heat resistance, Corrosion resistance, Electrical insulation, etc. The long-term use temperature reaches 240 ℃. It is widely used in aerospace, petroleum and petrochemical industry, automobile industry, electronic semiconductor and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value	
Resin Properties				
Density	ISO 1183	g/cm³	1.3	
Glass Transition Temperature (T_g)	ISO 11357.2	℃	143	
Melting Temperature (T_m)	ISO 11357.3	℃	343	
Processing Temperature (T_p)	-	℃	360-400	
Physical Properties			Electronic Grade	High Strength
Fiber Surface Density	HB7736.3-2004	g/m²	310	280
Prepreg Areal Density	HB7736.2-2004	g/m²	510	480
Resin Content	HB7736.5-2004	%	42±3	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.25±0.02	0.25±0.02
Density (Plywood)	ASTM D792	g/cm³	1.88	1.88
Hardness	ISO 2039-2	HRE	90	-
Thermal conductivity (25℃)	GB/T 22588	W/(m·K)	0.445	-
Mechanical Properties				
Tensile Strength	ASTM D3039	MPa	340	480
Stretch Modulus	ASTM D3039	GPa	21	23
Bending Strength	ASTM D7264	MPa	420	560
Bending Modulus	ASTM D7264	GPa	20	24
Compressive Strength	ASTM D6641	MPa	350	410
Compression Modulus	ASTM D6641	GPa	21	22
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	35	45
In-Plane Shear Strength	ASTM D3518	MPa	70	-
In-Plane Shear Modulus	ASTM D3518	GPa	0.7	-
Charpy Impact Strength (Notched)	ISO 179	MPa	50	-
Charpy Impact Strength (Un-Notched)	ISO 179	MPa	130	-
Double V-Notch Shear Strength	ASTM D5359	MPa	160	-

PEEKFRTP® GF-WF

Continuous Glass Fiber Reinforced PEEK Composites

Prepreg, Laminates, Rods, Insert molding, CNC machining,
Custom Profiles or Special-Shaped Components, etc.

Laminate Conventional Size

Size Can Be Customized

Length * Width	380*240mm / 440*330mm / 1000*600mm / 1200*600mm / 1100*900mm
Thickness	0.5mm-70mm

Typical Applications

Aerospace

Connection brackets, antenna radomes, and other products. These are used to replace insulating metal materials and traditional thermoset composites.

▲ High Transmittance Radar Radome

▲ Aircraft Angle Brackets

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PEEKFRTP® CFF

Carbon Fiber Felt Reinforced PEEK Composites

Product Overview

PEEKFRTP® CFF is an advanced high-performance thermoplastic composite material. It uses needled carbon fiber felt as the reinforcing material and semi-crystalline thermoplastic polymer PEEK as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance, Corrosion resistance and Biocompatibility. The long-term use temperature reaches 280 ℃. It is widely used in medical devices, petroleum and petrochemical industry, automobile industry and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value	
Resin Properties				
Density	ISO 1183	g/cm^3	1.3	
Glass Transition Temperature (T_g)	ISO 11357.2	℃	143	
Melting Temperature (T_m)	ISO 11357.3	℃	343	
Processing Temperature (T_p)	-	℃	360-400	
Physical Properties				
Fiber Areal Density	HB7736.3-2004	g/m^2	50	120
Resin Content	HB7736.5-2004	%	68±3	62±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.15±0.02	0.22±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.41	1.45
Mechanical Properties				
Tensile Strength	ASTM D3039	MPa	360	370
Tensile Modulus	ASTM D3039	GPa	21	32
Bending Strength	ASTM D7264	MPa	440	490
Bending Modulus	ASTM D7264	GPa	19	27
Compressive Strength	ASTM D6641	MPa	330	380
Compression Modulus	ASTM D6641	GPa	22	31
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	65	74

PEEKFRTP® CFF

Carbon Fiber Felt Reinforced PEEK Composites

Laminates, Rods, Insert molding, CNC machining, Custom Profiles or Special-Shaped Components, etc.

Laminate Conventional Size

Size Can Be Customized

Length * Width	380*240mm / 440*330mm / 1000*600mm / 1200*600mm / 1100*900mm
Thickness	0.5mm-40mm

Cut Carbon Fiber Mesh Tire

Short-cut carbon fiber mesh tires usually refer to a network structure composed of short-cut carbon fiber materials, which is often used to enhance the mechanical properties of composite materials, especially in the fields of aviation, automotive and sports equipment. This mesh structure can effectively improve the strength, rigidity and impact resistance of the material, while maintaining a low weight.

High Temperature Press Mouldina Machine

High Temperature Press Mouldina Machine is widely used in the manufacture of composite materials, especially in the molding process of carbon fiber, glass fiber and other materials. Under high temperature and high pressure conditions, the machine is able to evenly heat and apply pressure to these materials to achieve the best mechanical properties and surface quality.

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JHFRTP® PPS

Fiber Reinforced PPS Composites

Product Overview

JHFRTP® PPS series is a class of advanced high-performance thermoplastic composites, with T300-3K satin carbon fiber fabric, electronic-grade glass fiber fabric, needle-punched carbon fiber felt and other fiber forms as the reinforcing material and semi-crystalline thermoplastic polymer PPS as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance and Corrosion resistance. The long-term use temperature reaches 200℃. It is widely used in aerospace, petroleum petrochemical industry, automobile industry, electronic semiconductor and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value
Resin Properties			
Density	ISO 1183	g/cm^3	1.3
Glass Transition Temperature (T_g)	ISO 11357.2	℃	90
Melting Temperature (T_m)	ISO 11357.3	℃	280
Processing Temperature (T_p)	-	℃	300-330

JHFRTP® CF/PPS-WF (Continuous Carbon Fiber Fabric Reinforced PPS Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m^2	285
Prepreg Areal Density	HB7736.2-2004	g/m^2	485
Resin Content	HB7736.5-2004	%	38±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.3±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.55
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	730
Stretch Modulus	ASTM D3039	GPa	58
Bending Strength	ASTM D7264	MPa	880
Bending Modulus	ASTM D7264	GPa	58
Compress Strength	ASTM D6641	MPa	550
Compression Modulus	ASTM D6641	GPa	55
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	78

JHFRTP® GF/PPS-WF (Continuous Glass Fiber Fabric Reinforced PPS Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m^2	310
Prepreg Areal Density	HB7736.2-2004	g/m^2	510
Resin Content	HB7736.5-2004	%	38±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.25±0.02
Density (Plywood)	ASTM D792	g/cm^3	2.10
Hardness	ISO 2039-2	HRE	76
Thermal Conductivity (23℃)	GB/T 22588	W/(m·K)	0.441
Thermal Conductivity (260℃)	GB/T 22588	W/(m·K)	0.475

JHFRTP® PPS
Fiber Reinforced PPS Composites

Brought forward

Items	Standard	Unit	Typical Value
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	450
Stretch Modulus	ASTM D3039	GPa	26
Bending Strength	ASTM D7264	MPa	350
Bending Modulus	ASTM D7264	GPa	25
Compress Strength	ASTM D6641	MPa	300
Compression Modulus	ASTM D6641	GPa	25
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	38
In-Plane Shear Strength	ASTM D3518	MPa	67
In-Plane Shear Modulus	ASTM D3518	GPa	1.09
Charpy Impact Strength (Notched)	ISO 179	MPa	54
Charpy Impact Strength (Un-Notched)	ISO 179	MPa	243
Double V-Notch Shear Strength	ASTM D5359	MPa	91

JHFRTP® CFF/PPS (Carbon Fiber Felt Reinforced PPS Composites)

Physical Properties				
Fiber Surface Density	HB7736.3-2004	g/m^2	50	120
Resin Content	HB7736.5-2004	%	68±3	58±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.15±0.02	0.16±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.41	1.45
Mechanical Properties				
Tensile Strength	ASTM D3039	MPa	266	230
Stretch Modulus	ASTM D3039	GPa	23	25
Bending Strength	ASTM D7264	MPa	453	388
Bending Modulus	ASTM D7264	GPa	23	22
Compress Strength	ASTM D6641	MPa	292	238
Compression Modulus	ASTM D6641	GPa	29	31
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	55	35

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JHFRTP® PPSU

Fiber Reinforced PPSU Composites

Product Overview

JHFRTP® PPSU series is a class of advanced high-performance thermoplastic composites, with T300-3K satin carbon fiber fabric, electronic-grade glass fiber fabric, needle-punched carbon fiber felt and other fiber forms as the reinforcing material, and amorphous thermoplastic polymer PPSU as the prepreg resin. The material is formed through high-temperature press moulding. Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance and Corrosion resistance. The long-term use temperature reaches 250℃. It is widely used in aerospace, medical equipment, petroleum and petrochemical industry, automobile industry, electronic semiconductor and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value
Resin Properties			
Density	ISO 1183	g/cm³	1.3
Glass Transition Temperature (T_g)	ISO 11357.2	℃	220
Processing Temperature (T_p)	-	℃	350-390

JHFRTP® CF/PPSU-WF (Continuous Carbon Fiber Fabric Reinforced PPSU Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m²	285
Prepreg Areal Density	HB7736.2-2004	g/m²	485
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.3±0.02
Density (Plywood)	ASTM D792	g/cm³	1.55
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	660
Stretch Modulus	ASTM D3039	GPa	50
Bending Strength	ASTM D7264	MPa	860
Bending Modulus	ASTM D7264	GPa	48
Compress Strength	ASTM D6641	MPa	550
Compression Modulus	ASTM D6641	GPa	55
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	78

JHFRTP® GF/PPSU-WF (Continuous Glass Fiber Fabric Reinforced PPSU Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m²	310
Prepreg Areal Density	HB7736.2-2004	g/m²	510
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.25±0.02
Density (Plywood)	ASTM D792	g/cm³	1.85
Hardness	ISO 2039-2	HRE	77
Thermal conductivity (25℃)	GB/T 22588	W/(m·K)	0.400
Thermal conductivity (260℃)	GB/T 22588	W/(m·K)	0.274

JHFRTP® PPSU

Fiber Reinforced PPSU Composites

Brought forward

Items	Standard	Unit	Typical Value
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	370
Stretch Modulus	ASTM D3039	GPa	24
Bending Strength	ASTM D7264	MPa	485
Bending Modulus	ASTM D7264	GPa	23
Compress Strength	ASTM D6641	MPa	500
Compression Modulus	ASTM D6641	GPa	24
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	40
In-Plane Shear Strength	ASTM D3518	MPa	60
In-Plane Shear Modulus	ASTM D3518	GPa	1.05
Charpy Impact Strength (Notched)	ISO 179	MPa	69
Charpy Impact Strength (Un-Notched)	ISO 179	MPa	134
Double V-Notch Shear Strength	ASTM D5359	MPa	133

JHFRTP® CFF/PPSU (Carbon Fiber Felt Reinforced PPSU Composites)

Physical Properties				
Fiber Surface Density	HB7736.3-2004	g/m^2	50	120
Resin Content	HB7736.5-2004	%	68±3	58±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.15±0.02	0.16±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.41	1.45
Mechanical Properties				
Tensile Strength	ASTM D3039	MPa	278	365
Stretch Modulus	ASTM D3039	GPa	18	27
Bending Strength	ASTM D7264	MPa	383	493
Bending Modulus	ASTM D7264	GPa	17	22
Compress Strength	ASTM D6641	MPa	245	218
Compression Modulus	ASTM D6641	GPa	44	36
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	47	46

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JHFRTP® PEI

Fiber Reinforced PEI Composites

Product Overview

JHFRTP® PPS series is a class of advanced high-performance thermoplastic composites, with T300-3K satin carbon fiber fabric, electronic-grade glass fiber fabric, needle-punched carbon fiber felt and other fiber forms as the reinforcing materials and semi-crystalline thermoplastic polymer PEI as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance and Corrosion resistance. The long-term use temperature reaches 250℃. It is widely used in aerospace, petroleum petrochemical industry, automobile industry, electronic semiconductor and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value
Resin Properties			
Density	ISO 1183	g/cm³	1.3
Glass Transition Temperature (T_g)	ISO 11357.2	℃	215
Processing Temperature (T_p)	-	℃	320-360

JHFRTP® CF/PEI-WF (Continuous Carbon Fiber Fabric Reinforced PEI Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m²	285
Prepreg Areal Density	HB7736.2-2004	g/m²	485
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.3±0.02
Density (Plywood)	ASTM D792	g/cm³	1.55
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	680
Stretch Modulus	ASTM D3039	GPa	55
Bending Strength	ASTM D7264	MPa	880
Bending Modulus	ASTM D7264	GPa	50
Compress Strength	ASTM D6641	MPa	550
Compression Modulus	ASTM D6641	GPa	50
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	80

JHFRTP® GF/PEI-WF (Continuous Glass Fiber Fabric Reinforced PEI Composites)

Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m²	310
Prepreg Areal Density	HB7736.2-2004	g/m²	510
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.25±0.02
Density (Plywood)	ASTM D792	g/cm³	1.85
Hardness	ISO 2039-2	HRE	80
Thermal Conductivity (23℃)	GB/T 22588	W/(m·K)	0.368
Thermal Conductivity (260℃)	GB/T 22588	W/(m·K)	0.301

JHFRTP® PEI

Fiber Reinforced PEI Composites

Brought forward

Items	Standard	Unit	Typical Value
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	380
Stretch Modulus	ASTM D3039	GPa	25
Bending Strength	ASTM D7264	MPa	490
Bending Modulus	ASTM D7264	GPa	22
Compress Strength	ASTM D6641	MPa	510
Compression Modulus	ASTM D6641	GPa	24
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	40
In-Plane Shear Strength	ASTM D3518	MPa	110
In-Plane Shear Modulus	ASTM D3518	GPa	2.3
Charpy Impact Strength (Notched)	ISO 179	MPa	54
Charpy Impact Strength (Un-Notched)	ISO 179	MPa	143
Double V-Notch Shear Strength	ASTM D5359	MPa	158

JHFRTP® CFF/PEI (Carbon Fiber Mat Reinforced PEI Composites)

Physical Properties				
Fiber Surface Density	HB7736.3-2004	g/m^2	50	120
Resin Content	HB7736.5-2004	%	68±3	55±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.15±0.02	0.16±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.41	1.45
Mechanical Properties				
Tensile Strength	ASTM D3039	MPa	254	320
Stretch Modulus	ASTM D3039	GPa	18	25
Bending Strength	ASTM D7264	MPa	390	365
Bending Modulus	ASTM D7264	GPa	19	14
Compress Strength	ASTM D6641	MPa	280	250
Compression Modulus	ASTM D6641	GPa	38	22
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	42	46

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JHFRTP® TPI

Fiber Reinforced TPI Composites

Product Overview

JHFRTP® TPI series is a class of advanced high-performance thermoplastic composite materials. It uses T300- 3K satin carbon fiber fabric as the reinforcing material and amorphous thermoplastic polymer TPI as the prepreg resin. The material is formed through high-temperature press moulding.

Light weight, High strength, High toughness, High damage resistance, Fatigue resistance, Moisture heat resistance and Corrosion resistance. It can withstand long-term use at temperatures up to 300℃. It is widely used in aerospace, petroleum and petrochemical, medical, and other fields.

Technical Data Sheet

Items	Standard	Unit	Typical Value
Resin Properties			
Density	ISO 1183	g/cm^3	1.3
Glass Transition Temperature (T_g)	ISO 11357.2	℃	250
Processing Temperature (T_p)	-	℃	360-410
Physical Properties			
Fiber Areal Density	HB7736.3-2004	g/m^2	285
Prepreg Areal Density	HB7736.2-2004	g/m^2	485
Resin Content	HB7736.5-2004	%	42±3
Single Ply Cured Thickness	Laminate Thickness	mm	0.3±0.02
Density (Plywood)	ASTM D792	g/cm^3	1.55
Mechanical Properties			
Tensile Strength	ASTM D3039	MPa	650
Stretch Modulus	ASTM D3039	GPa	54
Bending Strength	ASTM D7264	MPa	806
Bending Modulus	ASTM D7264	GPa	48
Compress Strength	ASTM D6641	MPa	427
Compression Modulus	ASTM D6641	GPa	56
Interlaminar Shear Strength (ILSS)	ASTM D2344	MPa	67

Comparison of Thermosetting PI and Thermoplastic PI

Dominant Characteristic	Thermosetting PI	Thermoplastic PI
	Thermosetting PI has good electrical insulation, mechanical properties, chemical stability, aging resistance, radiation resistance. Low dielectric losses, and these properties do not change significantly over a wide temperature range (-196 ℃-300 ℃).	TPI retains the characteristics of thermosetting PI, such as high strength, high and low temperature resistance, good dielectric property and radiation resistance, and improves the processability. The continuous service temperature exceeds 240°C.
Forming Method	Won't melt and flow, or even soften, when heating to the decompositiontemperature. molding processing is difficult, the product form is single, can not be recycled and reshaped.	It has good melting performance, can be used in hot die molding, can also be extruded or injection molding, suitable for a single molding structure of complex products, no secondary processing.
Structural Feature	Physical polymer, through chemical crosslinking to form a rigid three-dimensional network structure, can not be repeated processing molding.	Linear polymer, can be machined repeatly.

PI (Polyimide) Performance Sheet

Items	Standard	Unit	JHPI-10	JHPI-10-21	JHPI-10-22	JHPI- HT	JHPI-YS	JSJHTPI-01	JSJHTPI-02
Density	ISO 1183	g/cm³	1.40	1.43	1.7	1.4	1.36	1.32	1.36
Tensile Strength	ISO 527	MPa	96	90	60	92	121	90	97
Elongation at Break	ISO 527	%	10	5	2.5	8	13	8	8
Bending Strength	ISO 178	MPa	148	126	90	140	171	130	138
Impact Strength of Simply Supported Beams	ISO 179	MPa	90	135	13	88	(No Break)	100	(No Break)
Thermal Deformation Temperature	ISO 75-1/-2	℃	>300	>300	>300	>320	255	230	250
Continuous Service Temperature	UL746B	℃	300	300	300	300	250	250	250

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