Exhibition

HAINING ANJIE COMPOSITE MATERIAL CO.,LTD
JIANGSU NONGCHAOER COMPOSITE MATERIAL CO., LTD

Address: 555 Jingwu Road, High Tech Zone, Jianhu County, Jiangsu Province, China

Professional manufacturer of high-tech fiber and composite material

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Company Profile

Haining ANJIE Composite Materials Co. Ltd,. is a reputable and established manufacturer of composite materials, specializing in the production of carbon fiber, basalt fiber, aramid fiber, and fiberglass products. With a strong presence in Leather capital – Haining City Zhejiang province, China since its establishment in 2004, ANJIE has built a robust brand known for its competitive pricing, superior quality, and exceptional customer service with 20 years of experience in composite materials industry.

Since Anjie’ s establishment, it has successively won honorary titles such as the "Jiaxing City Progressive Science and Technology Award", "National Chemical Fiber Industry Technology Innovation Enterprise", "Excellent Award for Composite Material Technology Innovation in the Transportation Field of the China Composite Materials Society", and "Top Ten Textile Technology Application Demonstration Awards in China". The company has owned more than 100 patents as of now.

Jiangsu NONGCHAOER Composite Materials Co. Ltd., is a dynamic and forward-thinking sister company of ANJIE Composite, established in 2019 and located in Jianhu High-tech Park, Yancheng City, Jiangsu Province with a total area of about 20,000 square meters. With a commitment to excellence and innovation, NONGCHAOER focuses on the manufacturing, development and application of advanced composite materials to meet the growing demand in the market worldwide. Equipped with large facilities and advanced machinery, it currently has more than 120 sets of various types of production equipment and laboratory equipment. In 2022, it successfully passed the certification of "National Science and Technology small and medium-sized enterprises", in 2023 it successfully passed the quality management system certification, environmental management system certification, occupational health and safety management system certification, SGS, TUV Rheinland certification, and selected as the first batch of Yancheng Engineering Technology Research Center.

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Corporate Honors

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1.Carbon Fiber Products (CFRP) for Structural Reinforcement and Construction

Carbon Fiber Reinforced Polymer (CFRP) is a composite material that combines carbon fibers and a polymer matrix, typically epoxy resin, to create a high-strength, lightweight material. CFRP has gained significant popularity in various industries, including structural reinforcement and construction, due to its exceptional mechanical properties.

Here are some common applications of CFRP in structural reinforcement and construction:

① Reinforcement of Concrete Structures
② Strengthening of Steel Structures:
③ Masonry Reinforcement
④ Strengthening of Timber Structures
⑤ Bridge Deck Strengthening
⑥ Prefabricated Structural Elements

A.Carbon fiber yarn

Carbon fiber yarn is a type of yarn made from thin and strong filaments composed mostly of carbon atoms. These filaments are known as carbon fibers and are produced through a chemical process involving precursor materials like polyacrylonitrile (PAN), rayon, or petroleum pitch. It is used in the manufacturing of composite materials, particularly those made with carbon fiber reinforced polymer (CFRP). It consists of a bundle of continuous, untwisted carbon fiber filaments, typically ranging from 1000 to 50,000 filaments per roving.

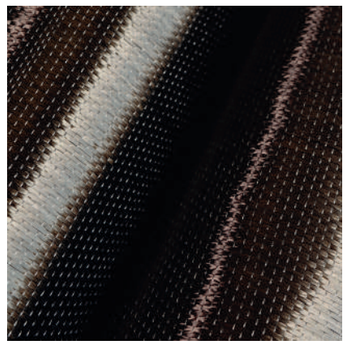
Items	Filaments Count	Tensile Strength	Tensile Modulus	Elongation
3k Carbon Fiber Yarn	3,000	4200 Mpa	⩾ 230 Gpa	⩾ 1.5%
12k Carbon Fiber Yarn	12,000	4900 Mpa	⩾ 230 Gpa	⩾ 1.5%
24k Carbon Fiber Yarn	24,000	4500 Mpa	⩾ 230 Gpa	⩾ 1.5 %
50k Carbon Fiber Yarn	50,000	4200 Mpa	⩾ 230 Gpa	⩾ 1.5%

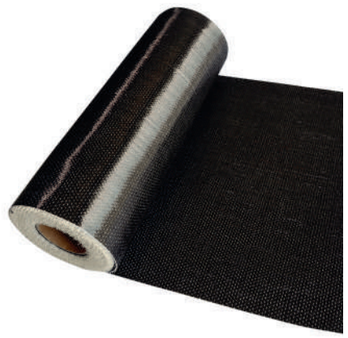
B.Unidirectional Carbon fiber fabric

Unidirectional (UD) Carbon fiber fabric, also known as carbon fiber wrap, is a type of textile material composed of carbon fibers arranged in a single direction. UD carbon fiber fabric provides exceptional strength and stiffness along the fiber direction, making it ideal for applications requiring high tensile or flexural strength in specific directions. It has become increasingly popular in the construction industry due to its unique properties and advantages.
One of the primary uses of carbon wrap in the construction industry is for structural reinforcement and repair. Carbon fabric can be used to strengthen and reinforce concrete, masonry, steel, and wood structures. It can also be used to repair and restore existing structures that have been damaged due to structural issues or natural disasters.

Product Data:

No.	Fiber Type	Tensile Strength (Mpa)	Weight (gsm)	Thickness (mm)	Width (mm)
CJ200T	12K	⩾ 3400	200	0.111	100-1500
CJ300T	12K	⩾ 3400	300	0.167	100-1500
CJ400T	12k	⩾ 3400	400	0.222	100-1500
CJ600T	12K	⩾ 3400	600	0.45	100-1500

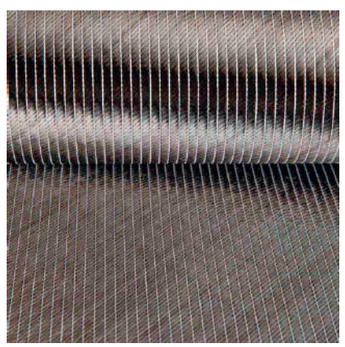
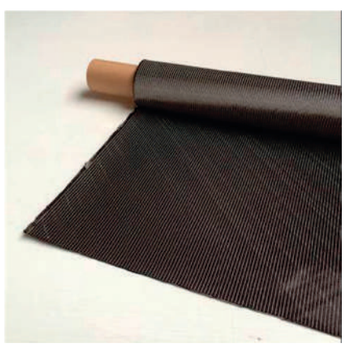
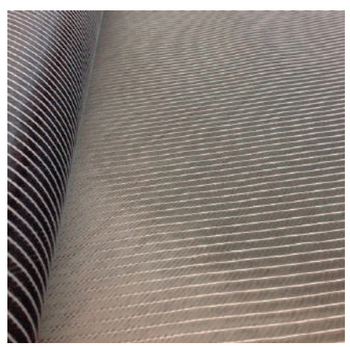




C.Bi-axial / Multi-axial Carbon Fiber Fabric

Biaxial or Multi-axial carbon fiber fabric is a type of composite material that is made from interlaced layers of carbon fibers that are woven in multiple directions. This type of fabric is known for its high strength-to-weight ratio, durability, and resistance to corrosion and fatigue.
The fabric is constructed by combining carbon fiber layers or unidirectional tapes, each oriented in a specific direction, and stitching or bonding them together. The fiber orientations can vary, with common configurations including 0 ° , 90 ° , ±45 ° , and even more complex combinations. This arrangement provides tailored reinforcement properties in different directions, enabling engineers to optimize the material for specific load requirements.

Item name	Fiber orientation	Each layer weight (g/m2)	Stitched fiber weight (g/m2)	Total fiber weight (g/m2)	Fabric width (cm)
CX150	+45/-45	75	7	157	127
CXT230	+45/90/-45	75	7	232	127
CX200	+45/-45	100	7	207	127
CXT300	+45/90/-45	100	7	307	127
CX250	+45/-45	125	7	257	127
CXT380	+45/90/-45	125	7	382	127
CX300	+45/-45	150	7	307	127
CXT450	+45/90/-45	150	7	457	127
CX400	+45/-45	200	7	407	127
CXT600	+45/90/-45	200	7	607	127
CLXT800	+45/90/-45	200	7	807	127
CX600	+45/-45	300	7	607	127
CXT900	+45/90/-45	300	7	907	127
CXLT1200	0/+45/90/-45	300	7	1207	127

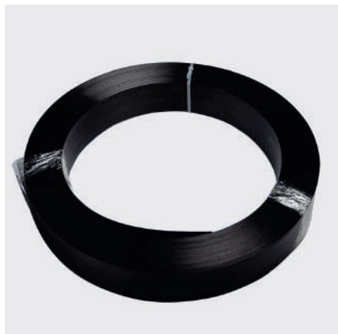




D.Carbon fiber Laminates / Plate

Carbon fiber laminates / Plate are typically made by pressing multiple layers of carbon fiber fabric or unidirectional carbon fiber together under high pressure and temperature using a high-strength epoxy resin. Carbon fiber laminates are increasingly being used in construction applications as a strengthening material due to their high strength-to-weight ratio, excellent stiffness, and durability. They are typically used to reinforce structures such as concrete, masonry, or steel that require additional support to withstand heavy loads, seismic forces, or other stresses.
In concrete structures, carbon fiber plates are commonly used to increase the flexural strength, shear strength and stiffness of beams, columns and slabs. In masonry structures, carbon fiber plates are used to reinforce walls and improve their resistance to seismic and wind loads. In steel structures, carbon fiber plates can be used to reinforce steel members and increase their load-carrying capacity. They can be anchored to the surface of the steel using mechanical fasteners, adhesive anchors, or a combination of both.

Product Data:

THICKNESS:	1.4 MM I 2 MM I 3 MM
TENSILE STRENGTH:	2400-2800Mpa
TENSILE MODULUS:	⩾ 200 GPA
ELONGATION:	⩾ 1.6%
WIDTH:	5 CM I 10 CM I 20 CM
LENGTH:	50 M I 100 M


E.Prestressed Carbon fiber plate reinforcement

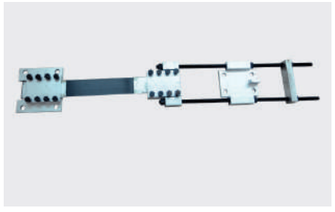
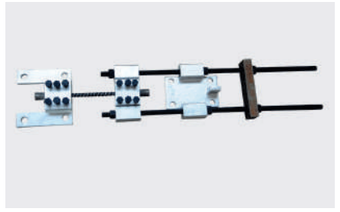
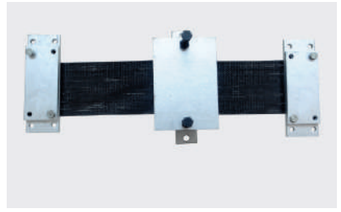
Prestressed carbon fiber plate reinforcement refers to the application of prestressing techniques using carbon fiber plates in structural strengthening and repair. It involves the installation of carbon fiber plates in a structure and applying tension to the plates before bonding them to the substrate. This pre-tensioning process allows the carbon fiber plates to exert compressive forces on the structure, enhancing its load-carrying capacity and durability.

Advantages of prestressed carbon fiber plate reinforcement:

- Increased strength and load-carrying capacity.
- Lightweight with a high strength-to-weight ratio.
- Corrosion-resistant.
- Customizable and flexible design options.
- Fast and efficient installation.
- Compatible with various substrates.
- Improved durability and extended service life.
- Enhances structural performance without adding significant weight.

F.Prestressed Fiber rebar reinforcement

The prestressed fiber rebar reinforcement system is a method used to strengthen and enhance the load-carrying capacity of structures using fiber-reinforced polymer (FRP) rebar. This system involves the installation of FRP rebar in a structure and applying pre-tensioning forces to the rebar before bonding them to the substrate. The FRP rebar, typically made of high-strength fibers such as Carbon, Basalt or Glass, is manufactured in various diameters and lengths to suit different applications.
During installation, the FRP rebar is placed in the desired location within the structure, such as in concrete or masonry elements. Tensioning devices, such as hydraulic jacks, are then used to apply an initial tension load to the rebar. This pre-tensioning process generates compressive forces within the rebar, allowing it to resist external loads and enhance the structural capacity.

G.Carbon fiber Rebar

Carbon fiber rebar, also known as carbon fiber reinforced polymer (CFRP) rebar, is a type of reinforcement material used in construction and civil engineering projects. It is a lightweight and high-strength alternative to traditional steel reinforcement which provides exceptional tensile strength, stiffness, and corrosion resistance. The combination of these properties makes carbon fiber rebar an attractive choice for applications where weight reduction, high strength, and durability are desired.

Advantages of carbon fiber rebar:

- High strength-to-weight ratio.
- Corrosion resistance.
- Excellent fatigue performance.
- Non-magnetic and non-conductive.
- Dimensional stability.
- Design flexibility.
- Easy installation.
- Longevity and durability

Product Data:

DIAMETER:	4-26 mm
TENSILE STRENGTH:	1800-2200 Mpa
ELASTIC MODULUS:	140-155 Gpa
ELONGATION:	1.3-1.5%
DENSITY:	1.6-1.8g/m^3
COEFFICIENT OF THERMAL EXPANSION	0 (x10-6/° C)
SURFACE:	Ribbed/wrapped/sand coated
MATERIAL:	Carbon Roving & Epoxy Additives



H.Carbon fiber Mesh

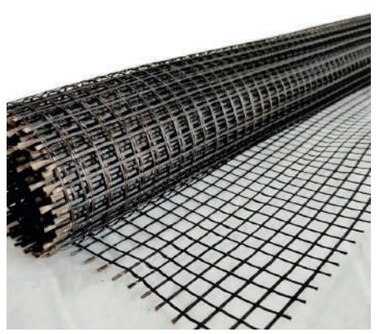
Carbon fiber mesh refers to a material made from intertwined carbon fiber strands in a grid-like pattern. It consists of high-strength carbon fibers that are tightly woven or knitted together, resulting in a strong and lightweight structure. The mesh can vary in thickness and density depending on the desired application.
Carbon fiber mesh is known for its exceptional mechanical properties, including high tensile strength, stiffness, and resistance to corrosion and temperature extremes. These characteristics make it a preferred material in various industries.

Product Data:

ITEM		DATA
Density		1.8 g/cm^3
Fiber density		1622 g/km
Tensile strength	warp	3630 Mpa
	weft	4230 Mpa
Tensile modulus	warp	230 Gpa
	weft	240 Gpa
Elongation	warp	1.57%
	weft	1.76%

I.Carbon fiber Geo Grid

Carbon fiber geo grid, also known as carbon grid, is a specialized form of geosynthetic material used in civil engineering and construction applications. It is a grid-like structure made from high-strength carbon fibers, similar to carbon fiber mesh, but specifically designed for soil reinforcement and stabilization purposes.
The primary function of carbon fiber geo grid is to enhance the mechanical properties of soil and increase its load-bearing capacity. It provides reinforcement by distributing applied loads more efficiently and reducing stress concentrations within the soil structure. The carbon fibers in the grid offer high tensile strength and stiffness, allowing them to withstand significant loads and limit deformations.



J.Carbon fiber Chopped Strands

Chopped carbon fiber is a form of carbon fiber that consists of small, chopped fibers of varying lengths. The fibers are typically cut to lengths ranging from a few millimeters to a few centimeters and are mixed with other materials to create composites or added to resins for reinforcement.
It is a promising material for concrete reinforcement due to its high strength, durability, and ease of use. Its use can help to create stronger and more resilient concrete structures that can withstand high levels of stress and maintain their structural integrity over time.

Product Data:

DETAIL	DATA
Filament Diameter	7 – 10 μm
Tensile Strength	3.6 - 3.8 GPa
Tensile Modulus	220 - 240 GPa
Carbon content	⩾ 95%
Elongation	1.5%
Density	1.76 g/ cm^3
Color	Black

K.Carbon fiber powder

Carbon fiber powder, also known as carbon fiber filler or carbon fiber dust, refers to a fine form of carbon fiber that is typically in powdered or particulate form. It is produced by grinding or milling carbon fiber strands or fabrics into small particles, resulting in a fine powder with varying particle sizes.
It is commonly used in the production of conductive coatings, electromagnetic shielding, conductive adhesives, battery electrodes, and conductive inks for printed electronics. It can also be incorporated into polymer composites to enhance their strength, electrical conductivity, and thermal stability.

Product Data:

NO	TEST ITEM	TEST DATA	RANGE
1	Carbon content(%)	98%	⩾ 95.0%
2	Cellosilk Diameter	7.0-15μm	7.0-15μm
3	Tensile Strength	3600Mpa	3000-3800Mpa
4	Stretch Modulus Resistance	2700Mpa	2200-2800Mpa
5	Density	1.76g/cm^3	1.6-1.76g/cm^3
6	Electric Conductivity	1.5*10-3	1.5*10-3

Product Portfolio

2. Basalt Fiber Products (BFRP) for Structural Reinforcement and Construction

Basalt Fiber Reinforced Polymer (BFRP) is a composite material that combines basalt fibers with a polymer matrix, typically epoxy resin, to create structural reinforcement products for construction. Basalt fiber is derived from natural volcanic rock known as basalt, which is melted and extruded into fibers.
Basalt Fiber Reinforced Polymer (BFRP) products offer a sustainable and efficient alternative to traditional reinforcement materials, providing improved strength, durability, and corrosion resistance in construction applications.

A.Unidirectional Basalt fiber fabric

Unidirectional basalt fiber fabric, also known as basalt UD fabric, is a type of reinforcement material made from continuous basalt fibers arranged in a single direction. Unlike woven fabrics that have fibers running in two perpendicular directions (warp and weft), unidirectional fabrics consist of fibers aligned in one primary direction.

Unidirectional basalt fiber fabric is commonly used in the construction, automotive, aerospace, and marine industries. It is employed in various applications, including:

- Strengthening and reinforcing concrete structures like beams, columns, and slabs.
- Manufacturing of composite parts for aircraft, such as wings, fuselage sections, and rotor blades.
- Production of lightweight, high-strength components in the automotive industry.
- Reinforcement of pipes, tanks, and other infrastructure elements.

Product Data:

Items	Tensile Strength (Mpa)	Tensile Modulus (Gpa)	Areal Weight (gsm)	Fabric Thickness (mm)
BJ20A	2100	90	200	0.11
BJ30A	2100	90	300	0.17
BJ40A	2100	90	400	0.28

B.Basalt fiber Rebar

Basalt fiber rebar is a composite material that is made from basalt fiber and resin. It is a strong and durable alternative to traditional steel rebar, with several advantages over steel, including better corrosion resistance and thermal stability.
Basalt fiber rebar is lightweight and easy to handle, making it an ideal choice for use in construction applications. It is used to reinforce concrete structures such as bridges, buildings, highways, and tunnels, and it can also be used in marine applications, where its superior corrosion resistance makes it an excellent choice for use in seawalls and docks. Compared to traditional steel rebar, basalt fiber rebar is less susceptible to corrosion, which can lead to structural damage and shorten the lifespan of the structure. It is also a more sustainable and environmentally friendly choice, as it does not rust or corrode, reducing the need for ongoing maintenance and repair.

Product Data:

Diameter:	4-26 mm
Tensile strength:	780-900 Mpa
Elastic modulus:	⩾ 58 Gpa
Elongation:	⩾ 2.6 %
Density:	1.9-2.1 g/m^3
Magnetic (cgsm)	< 5 × 10 ∧ - 7
Surface:	Ribbed/wrapped/sand coated
Material:	Basalt Roving & Epoxy Additives

C.Basalt fiber geo grid

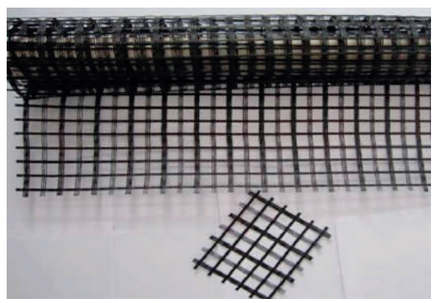
Basalt fiber geo grid is a geosynthetic material made of continuous basalt fibers arranged in a specific pattern to form a grid structure. Geo grids are used for soil reinforcement in civil engineering and construction applications. Basalt fiber geo grids provide excellent reinforcement for soil stabilization, slope stabilization, and other earthwork applications.

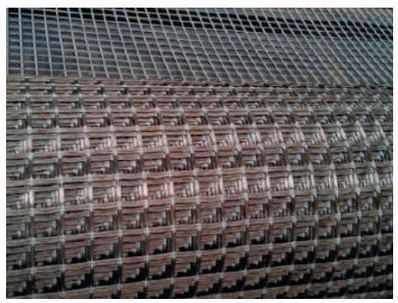
Basalt fiber geo grids have the following key features:

- High Tensile Strength: Provides strong reinforcement for soil stabilization and slope stability.
- High Modulus of Elasticity: Resists deformation under load, maintaining long-term stability.
- Corrosion Resistance: Does not rust or corrode, making it suitable for corrosive environments.
- Lightweight: Easy to handle and install, reducing installation costs.
- Customizable Design: Grid pattern, fiber orientation, and strength properties can be tailored to specific project requirements.
- Versatile Applications: Used in soil stabilization, retaining walls, slope stabilization, and various infrastructure projects.

Product Data:

Type	Breaking Strength (KN/m)		Elongation at Break (%)		Mesh Size (mm)	Width (m)
	Wrap	Weft	Wrap	Weft		
BG2525	⩾ 25	⩾ 25	⩽ 3	⩽ 3	12-50	1-6
BG3030	⩾ 30	⩾ 30	⩽ 3	⩽ 3	12-50	1-6
BG4040	⩾ 40	⩾ 40	⩽ 3	⩽ 3	12-50	1-6
BG5050	⩾ 50	⩾ 50	⩽ 3	⩽ 3	12-50	1-6
BG8080	⩾ 80	⩾ 80	⩽ 3	⩽ 3	12-50	1-6
BG100100	⩾ 100	⩾ 100	⩽ 3	⩽ 3	12-50	1-6
BG120120	⩾ 120	⩾ 120	⩽ 3	⩽ 3	12-50	1-6





D.Basalt fiber Chopped strands

Chopped Basalt fiber is a form of basalt fiber that consists of small, chopped fibers of varying lengths. The fibers are typically cut to lengths ranging from a few millimeters to a few centimeters and are mixed with other materials to create composites or added to resins for reinforcement. Basalt fiber chopped strands are a versatile and promising reinforcement material relatively more cost-effective, have lower environmental impact during production, and exhibit good thermal and electrical insulation properties.

Product Data:

Item	Performance Index	Value
1	Softening temperature(° c)	700
	Service temperature(° c)	-260~650
	Thermal-conductivity (W/m•k)	0.03~0.38
	Tensile strength retention after heat treatment (%)	
	20° c	100
	200° c	95
	400° c	82
2	Chemical Stability (lose weight after 3 hours boiled %)	
	2N HCl	2.2
	2N NaOH	3.0
	H2O	0.2

Product Portfolio

3.Glass Fiber Products (GFRP): for Structural Reinforcement and Construction

Glass Fiber Reinforced Polymer (GFRP) products are widely used in structural reinforcement and construction due to their high strength, lightweight nature, corrosion resistance, and durability. GFRP is a composite material made of glass fibers embedded in a polymer matrix, typically epoxy or polyester resin.
GFRP products have proven to be valuable assets in structural reinforcement and construction, providing enhanced performance, extended service life, and sustainable alternatives to traditional materials.

Benefits of GFRP in Structural Reinforcement and Construction:

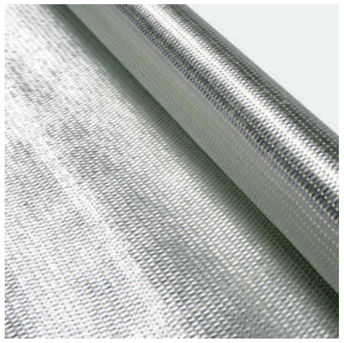
① High strength-to-weight ratio: GFRP products offer comparable or higher strength than traditional materials like steel while being significantly lighter, resulting in easier handling and reduced transportation costs.
② Corrosion resistance: Unlike steel, GFRP does not rust or corrode, making it suitable for applications in harsh environments, coastal areas, or chemically aggressive settings.
③ Durability: GFRP materials have a long service life, exhibiting excellent resistance to fatigue, creep, and environmental degradation.
④ Non-conductive: GFRP is non-conductive, providing electrical insulation and reducing the risk of electromagnetic interference in sensitive environments.
⑤ Design flexibility: GFRP products can be manufactured in various shapes and sizes to meet specific design requirements, allowing for customization and optimization of structural solutions.

A.Unidirectional Glass fiber fabric

Unidirectional glass fiber fabric is a type of reinforcement material widely used in composite applications. It consists of continuous glass fibers arranged in a single direction, typically oriented parallel to each other. The fibers are held together by a binder or resin, forming a flexible and lightweight fabric.
The unidirectional arrangement of fibers provides excellent tensile strength along the fiber direction, as well as low cost making it an ideal choice for applications where high strength and stiffness are required in a specific direction. This fabric is commonly used to reinforce structures and components that experience predominantly unidirectional loads or stress, such as beams, columns, and other structural elements.

Product Data:

Items	Tensile Strength (Mpa)	Tensile Modulus (Gpa)	Areal Weight (Gsm)	Fabric Thickness (mm)
EJ45	1500	72	450	0.177
BJ90	1500	72	900	0.354



B.Fiberglass Rebar

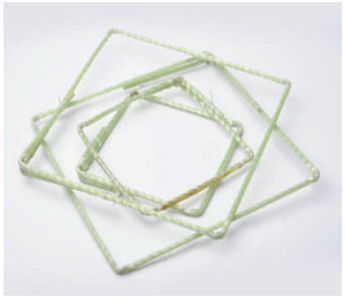
Fiberglass rebar, also known as GFRP (Glass Fiber Reinforced Polymer) rebar, is a type of reinforcement used in construction projects as an alternative to traditional steel reinforcement. It is made by impregnating glass fibers with a polymer resin, typically epoxy or vinyl ester, and then forming them into bars or rods of various diameters.
Fiberglass rebar is commonly used in various construction applications, including bridge decks, marine structures, parking garages, foundation slabs, and concrete walls. It offers long-term durability and can extend the service life of concrete structures while reducing maintenance and repair costs associated with corrosion.

Product Data:

GFRP Rebar Technical Data (General)																		
Diameter(mm)	3	4	6	8	10	12	14	16	18	20	22	25	28	30	32	34	36	40
Cross section(mm^2)	7	12	28	50	73	103	134	180	248	278	355	478	590	671	740	857	961	1190
Density(g/cm^3)	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Weight(g/m)	16	28	62	111	173	237	323	422	534	659	798	1030	1292	1484	1688	1906	2136	2638
Ultimate tensile(KN)	13.5	18	36	54	72	99	117	149	189	225	270	342	432	450	504	540	585	640
Ultimate tensile strength (Mpa)	1900	1500	1280	1080	980	870	764	752	744	716	695	675	650	637	626	595	575	509
Ultimate shear strength (Mpa)	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150
E-modulus(GPa)	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40	>40

High Property GFRP Rebar						
Diameter(mm)	10	16	20	22	25	32
Cross section(mm^2)	73	180	278	355	478	740
Density(g/cm)	2.2	2.1	2.1	2.1	2.1	2.1
Weight(g/m)	173	422	659	798	1030	1688
Ultimate tensile (KN)	85	180	310	390	450	640
Ultimate tensile strength (Mpa)	1000	1000	1000	1000	900	850
Ultimate shear strength (Mpa)	>150	>150	>150	>150	>150	>150
E-modulus(GPa)	>45	>45	>45	>45	>45	>45





C.Glass Fiber rock bolt

GFRP (Glass Fiber Reinforced Polymer) rock bolts are specialized structural elements used in geotechnical and mining applications to reinforce and stabilize rock masses. They are made of high-strength glass fibers embedded in a polymer resin matrix, typically epoxy or vinyl ester.
One of the significant advantages of GFRP rock bolts is their excellent corrosion resistance. Unlike traditional steel bolts, which are susceptible to corrosion when exposed to moisture, chemicals, or harsh environments, GFRP rock bolts are non-metallic and do not rust. This property ensures long-term durability and reduces the need for maintenance or replacement.
GFRP rock bolts can be installed using various techniques, depending on the specific application and geological conditions. Common installation methods include resin anchoring, grouting, or mechanical anchoring. Proper installation ensures effective load transfer from the rock mass to the bolt.

Product Data:

Test Unit				MGSL18	MGSL20	MGSL22	MGSL24	MGSL27
Rod	Surface			Uniform appearance, no bubble and flaw				
	Nominal diameter(mm)			18	20	22	24	27
	Tensile Load (kN)			160	210	250	280	350
	Tensile strength (MPa)			600	600	600	600	600
	Shearing strength (MPa)			150	150	150	150	150
	Torsion (Nm)			45	70	100	150	200
	Antistatic (Ω)			3*10^7	3*10^7	3*10^7	3*10^7	3*10^7
	flame resistance	Flaming	sum of six(s) 6	<=6	<=6	<=6	<=6	<=6
			Maximum (s)	<=2	<=2	<=2	<=2	<=2
		Flameless burning	sum of six(s) 6	<=60	<=60	<=60	<=60	<=60
			Maximum (s)	<=12	<=12	<=12	<=12	<=12
Plate	Plate Load Strength (kN)			70	80	90	100	110
	Central Diameter (mm)			28±1	28±1	28±1	28±1	28±1
Nut	Nut Load Strength (kN)			70	80	90	100	110

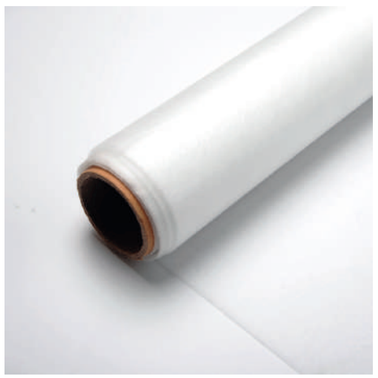


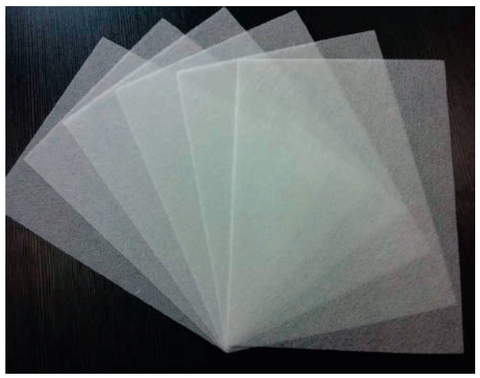
D.Glass fiber Strand mat

Glass fiber strand mat, also known as fiberglass strand mat or chopped strand mat (CSM), is a non-woven reinforcement material used in composite manufacturing. It is made by randomly distributing chopped glass fibers onto a conveyor belt or continuous strand mat machine, and then bonding them together with a binder or resin. The binder ensures cohesion and provides the initial shape and form of the mat.
Glass fiber strand mat finds application in various industries, including automotive, marine, aerospace, construction, and consumer goods. It can be used in a wide range of composite manufacturing processes such as hand lay-up, vacuum infusion, and resin transfer molding (RTM). It is commonly used in the production of fiberglass panels, boat hulls, automotive body parts, pipes, and tanks.

Product Data:

Item	Standard weight (g/m²)	Width(mm)	Loss on ignition (%)	Moisture (%)	Compatible resins
EMC225	225	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE
EMC300	300	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE
EMC380	380	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE
EMC450	450	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE
EMC600	600	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE
EMC900	900	1040/1270/2080 ⩽ 3300	2-6	⩽ 0.2	UP VE





E.Glass fiber Chopped strands

Glass fiber chopped strands are typically made from E-glass or S-glass fibers. Glass fiber chopped strands are short lengths of continuous glass fibers that have been cut into specified lengths and used as reinforcement in various composite applications. They are a key component in the production of composite materials, providing strength, stiffness, and other desirable properties.
Glass fiber chopped strands are widely used in numerous industries, including automotive, aerospace, construction, marine, and consumer goods. They are commonly employed in the production of components such as pipes, tanks, automotive parts, electrical insulators, and various structural elements.

Product Data:

CS	Glass Type	Chopped Length (mm)	Diameter (um)	MOL (%)
CS3	E-glass	3	7-13	10-20±0.2
CS4.5	E-glass	4.5	7-13	10-20±0.2
CS6	E-glass	6	7-13	10-20±0.2
CS9	E-glass	9	7-13	10-20±0.2
CS12	E-glass	12	7-13	10-20±0.2
CS25	E-glass	25	7-13	10-20±0.2

Product Portfolio

4.Aramid Fiber Products:

Aramid fiber is a synthetic fiber known for its exceptional strength, heat resistance, and durability. It has a diverse applications ranging from protective gear and aerospace components to industrial materials and fire safety equipment.

Uses of aramid fiber include:

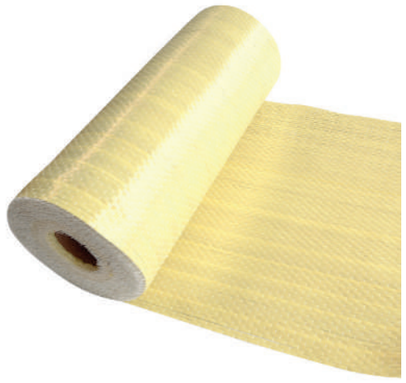
① Protective Gear: Aramid fibers are used in bulletproof vests, helmets, and other protective clothing due to their excellent strength and resistance to impact.
② Aerospace Industry: Aramid fibers are utilized in aircraft components, such as lightweight structural panels, due to their high strength-to-weight ratio.
③ Automotive Industry: Aramid fibers are used in the production of high-performance tires, providing improved durability and resistance to wear.
④ Industrial Applications: Aramid fibers find application in ropes, cables, and belts where strength, heat resistance, and resistance to abrasion are crucial.
⑤ Fire Safety: Aramid fibers, are used in firefighter uniforms and protective clothing as they offer excellent flame resistance.
⑥ Sporting Goods: Aramid fibers are used in sporting equipment, such as racing sails and tennis racket strings, for their strength and lightweight nature.

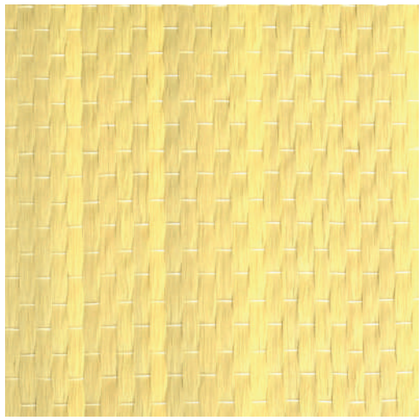
A.Unidirectional Aramid fiber fabric

Unidirectional aramid fiber fabric refers to a type of fabric made from aramid fibers that are predominantly aligned in a single direction. The unidirectional alignment of aramid fibers provides several advantages. It maximizes the strength and stiffness of the fabric along the fiber direction, offering exceptional tensile strength and load-bearing capabilities. This makes it an excellent choice for applications where high strength in a specific direction is required.

Product Data:

Item Code	Woven	Tensile Strength (MPa)	Tensile Modulus (GPa)	Areal Weight (g/m^2)	Fabric Thickness (mm)
AJ280	UD	2200	110	280	0.193
AJ415	UD	2200	110	415	0.286
AJ623	UD	2200	110	623	0.430
AJ830	UD	2200	110	830	0.572



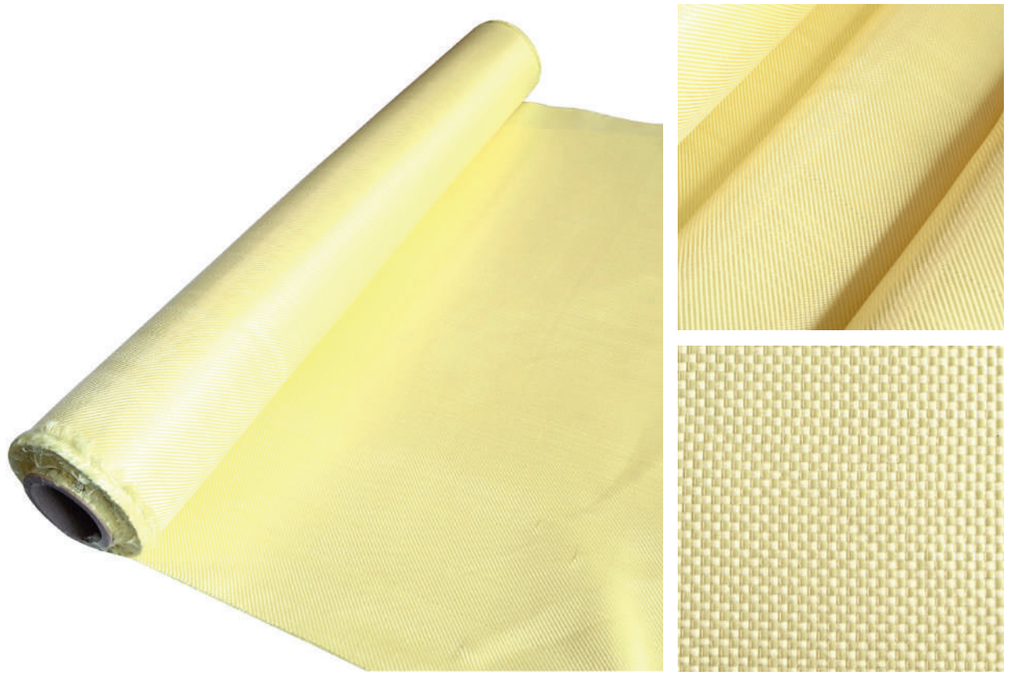


B.Bidirectional Aramid (Kevlar) fiber fabrics

Bidirectional aramid fiber fabrics, often referred to as Kevlar fabric, are woven fabrics made from aramid fibers, with fibers oriented in two main directions: the warp and weft directions. Aramid fibers are synthetic fibers known for their high strength, exceptional toughness, and heat resistance.

The applications of bidirectional aramid (Kevlar) fiber fabrics:

- Ballistic protection: Bulletproof vests, helmets, and personal protective equipment (PPE)
- Aerospace and defense: Structural reinforcements, radome panels, protective covers
- Automotive: Body panels, structural components, crash-resistant parts
- Sporting goods: Racing sails, kayaks, canoes, sports equipment (helmets, gloves, protective gear)
- Industrial applications: Conveyor belts, hoses, cables, reinforcement in tires
- Marine and offshore: Boat hulls, rigging, ropes, protective gear



Product Data:

Item	Weave	Fiber count/cm	Weight (g/sqm)	Fiber Spec.	Width (mm)
AJ-PAF200-50	Plain	13.5*13.5	50	Kevlar fiber200d	100-1500
AJ-TAF200-60	Twill 2/2	15*15	60	Kevlar fiber200d	100-1500
AJ-PAF400-80	Plain	9*9	80	Kevlar fiber400d	100-1500
AJ-PAF400-108	Plain	12*12	108	Kevlar fiber400d	100-1500
AJ-TAF400-116	Twill 2/2	13*13	116	Kevlar fiber400d	100-1500
AJ-PAF800-115	Plain	7*7	115	Kevlar fiber800d	100-1500
AJ-PAF800-145	Plain	9*9	145	Kevlar fiber800d	100-1500
AJ-TAF800-160	Twill 2/2	10*10	160	Kevlar fiber800d	100-1500
AJ-PAF1000-120	Plain	5.5*5.5	120	Kevlar fiber1000d	100-1500
AJ-PAF1000-135	Plain	6*6	135	Kevlar fiber1000d	100-1500
AJ-PAF1000-155	Plain	7*7	155	Kevlar fiber1000d	100-1500
AJ-PAF1000-180	Plain	8*8	180	Kevlar fiber1000d	100-1500
AJ-TAF1000-200	Twill 2/2	9*9	200	Kevlar fiber1000d	100-1500
AJ-PAF1500-170	Plain	5*5	170	Kevlar fiber1500d	100-1500
AJ-TAF1500-185	Twill 2/2	5.5*5.5	185	Kevlar fiber1500d	100-1500
AJ-TAF1500-205	Twill 2/2	6*6	205	Kevlar fiber1500d	100-1500
AJ-PAF1500-280	Plain	8*8	280	Kevlar fiber1500d	100-1500
AJ-PAF1500-220	Plain	6.5*6.5	220	Kevlar fiber1500d	100-1500
AJ-PAF3000-305	Plain	4.5*4.5	305	Kevlar fiber3000d	100-1500
AJ-PAF3000-450	Plain	6*7	450	Kevlar fiber3000d	100-1500

Product Portfolio

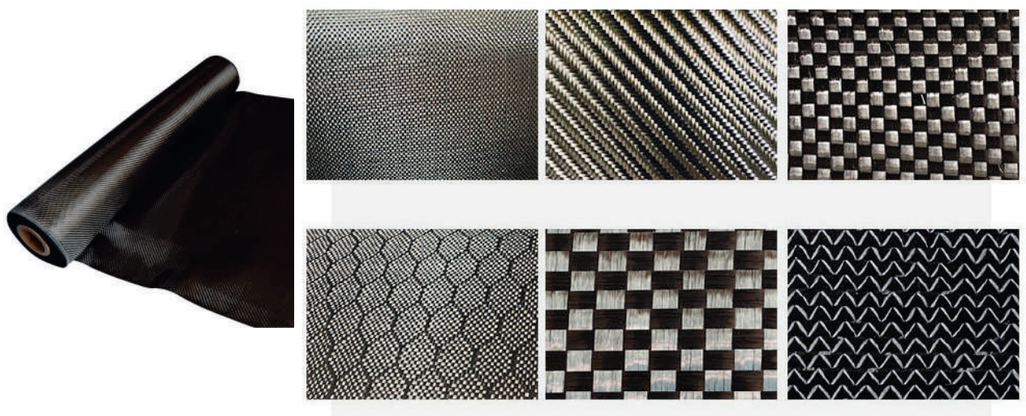
5.Other Fiber (FRP) products:

A.Bidirectional Carbon fiber fabric

Bidirectional carbon fiber fabric is a term often used to refer to a type of carbon fiber fabric that has fibers oriented in two main directions: the warp and weft directions. The bidirectional nature of the fabric provides balanced strength and stiffness in both the warp and weft directions. This makes it ideal for applications where equal strength is required in multiple directions.

Plain weave and twill weave are two common patterns used in the manufacturing of carbon fiber fabric. Plain weave carbon fiber fabric is made by interlacing carbon fibers in a simple over-under pattern, forming a grid-like structure. And Twill weave carbon fiber fabric is made by interlacing carbon fibers in a diagonal pattern, creating a distinctive "twill line" appearance.

The choice between the fabrics weaving depends on specific requirements, such as strength, weight, surface finish, drapability, and visual appearance.



Product Data:

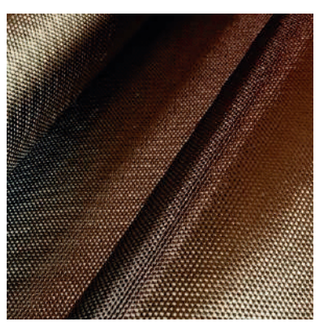
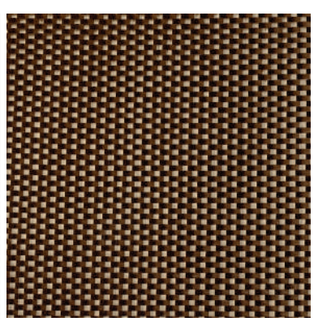
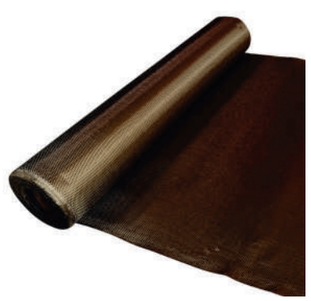
Style	Reinforcement Yarn		Weave Pattern	Fiber Count (10mm)		Weight	Thickness	Width
	Warp	Weft		Warp	Weft	(GSM)	(mm)	(mm)
AJP-1KC120	1K	1K	Plain	9	9	120	0.12	100-1500
AJT-1KC120	1K	1K	Twill	9	9	120	0.12	100-1500
AJP-1KC140	1K	1K	Plain	10.5	10.5	140	0.14	100-1500
AJT-1KC140	1K	1K	Twill	10.5	10.5	140	0.14	100-1500
AJP-3KC160	3K	3K	Plain	4	4	160	0.16	100-1500
AJT-3KC160	3K	3K	Twill	4	4	160	0.16	100-1500
AJP-3KC180	3K	3K	Plain	4.5	4.5	180	0.18	100-1500
AJT-3KC180	3K	3K	Twill	4.5	4.5	180	0.18	100-1500
AJP-3KC200	3K	3K	Plain	5	5	200	0.2	100-1500
AJT-3KC200	3K	3K	Twill	5	5	200	0.2	100-1500
AJP-3KC220	3K	3K	Plain	5.5	5.5	220	0.22	100-1500
AJT-3KC220	3K	3K	Twill	5.5	5.5	220	0.22	100-1500
AJP-3KC240	3K	3K	Plain	6	6	240	0.24	100-1500
AJT-3KC240	3K	3K	Twill	6	6	240	0.24	100-1500
AJP-6KC280	6K	6K	Plain	3.5	3.5	280	0.28	100-1500
AJT-6KC280	6K	6K	Twill	3.5	3.5	280	0.28	100-1500
AJP-6KC320	6K	6K	Plain	4	4	320	0.32	100-1500
AJT-6KC320	6K	6K	Twill	4	4	320	0.32	100-1500
AJP-6KC360	6K	6K	Plain	4.5	4.5	360	0.36	100-1500
AJT-6KC360	6K	6K	Twill	4.5	4.5	360	0.36	100-1500
AJP-12KC320	12K	12K	Plain	2	2	320	0.32	100-1500
AJT-12KC320	12K	12K	Twill	2	2	320	0.32	100-1500
AJP-12KC400	12K	12K	Plain	2.5	2.5	400	0.4	100-1500
AJT-12KC400	12K	12K	Twill	2.5	2.5	400	0.4	100-1500
AJP-12KC480	12K	12K	Plain	3	3	480	0.48	100-1500
AJT-12KC480	12K	12K	Twill	3	3	480	0.48	100-1500
AJP-12KC560	12K	12K	Plain	3.5	3.5	560	0.56	100-1500
AJT-12KC560	12K	12K	Twill	3.5	3.5	560	0.56	100-1500
AJP-12KC640	12K	12K	Plain	4	4	640	0.64	100-1500
AJT-12KC640	12K	12K	Twill	4	4	640	0.64	100-1500

B.Bidirectional Basalt fiber fabric

Bidirectional Basalt fiber fabric is a type of woven fabric made from basalt fibers. It is created by weaving continuous basalt fibers together using various weaving patterns, such as plain weave or twill weave.

Product Data:

Style	Reinforcement Yarn		Weave Pattern	Fiber Count (10mm)		Weight	Thickness	Width
	Warp	Weft		Warp	Weft	(GSM)	(mm)	(mm)
BJP130	80tex	80tex	Plain	8	8	130	0.16	100-1500
BJT130	80tex	80tex	Twill	8	8	130	0.16	100-1500
BJP145	80tex	80tex	Plain	9	9	145	0.18	100-1500
BJT145	80tex	80tex	Twill	9	9	145	0.18	100-1500
BJP160	80tex	80tex	Plain	10	10	160	0.20	100-1500
BJT160	80tex	80tex	Twill	10	10	160	0.20	100-1500
BJP300	300tex	300tex	Plain	5	5	300	0.32	100-1500
BJT300	300tex	300tex	Twill	5	5	300	0.32	100-1500
BJP360	300tex	300tex	Plain	6	6	360	0.34	100-1500
BJT360	300tex	300tex	Twill	6	6	360	0.34	100-1500
BJP420	300tex	300tex	Plain	7	7	420	0.36	100-1500
BJT420	300tex	300tex	Twill	7	7	420	0.36	100-1500
BJP560	800tex	800tex	Plain	3.5	3.5	560	0.55	100-1500
BJT560	800tex	800tex	Twill	3.5	3.5	560	0.55	100-1500
BJP640	800tex	800tex	Plain	4	4	640	0.65	100-1500
BJT640	800tex	800tex	Twill	4	4	640	0.65	100-1500
BJP800	1320tex	1320tex	Plain	3	3	800	0.80	100-1500
BJT800	1320tex	1320tex	Twill	3	3	800	0.80	100-1500
BJP1000	1320tex	1320tex	Plain	4	4	1000	0.90	100-1500
BJT1000	1320tex	1320tex	Twill	4	4	1000	0.90	100-1500

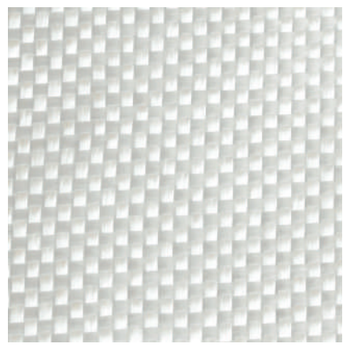




C.Bidirectional Glass fiber fabric

Bidirectional Glass fiber fabric, also known as fiberglass fabric, is a type of woven fabric made from glass fibers roving. It is created by weaving continuous glass fibers together using various weaving patterns, such as plain weave or twill weave.

Applications of glass fiber fabric:

- Composite reinforcement in automotive, aerospace, construction, and marine industries.
- Thermal insulation in blankets, jackets, and fire-resistant barriers.
- Industrial applications such as gaskets, seals, and insulation materials.
- Filtration in air and liquid filtration systems.
- Electrical insulation in various electrical and electronic applications.
- Manufacturing of automotive components and aerospace structures.

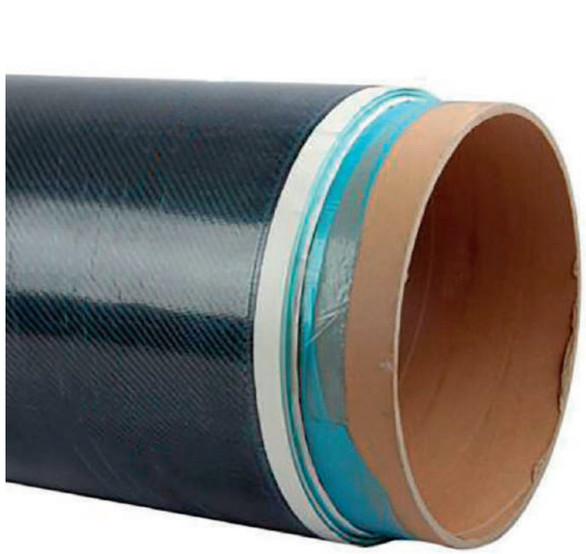



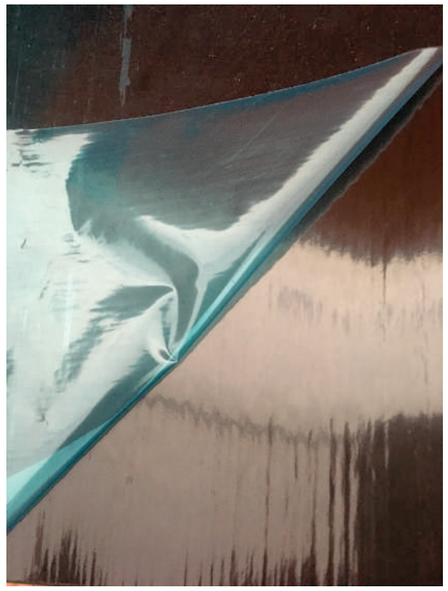

D.Prepreg Carbon fiber Sheet

A prepreg carbon fiber sheet, also known as a carbon fiber prepreg sheet, is a composite material consisting of carbon fiber fabric impregnated with a thermoset resin. Prepreg is short for "pre-impregnated," meaning that the carbon fiber fabric has already been impregnated with resin in a controlled manufacturing process.

Here are some applications of prepreg carbon fiber sheets:

- Aerospace and aviation: Manufacturing aircraft components like wings, fuselages, and interior parts.
- Automotive: Producing high-performance automotive parts such as body panels, hoods, spoilers, and interior trim.
- Sports and recreation: Making sports equipment like bicycle frames, tennis rackets, golf clubs, and hockey sticks.
- Industrial applications: Used in robotics, marine structures, and industrial machinery components.
- Medical devices: Used for lightweight and durable solutions in prosthetics and orthotics.





Product Data:

Unidirectional carbon fiber prepreg fabric

Type	Dry Weight (g/m2)	Resin Content (%)	Total Weight (g/m2)	Thickness (mm)	Width (mm)
AJ-PUD03000	30	55	76	0.03	1000
AJ-PUD05000	50	45	91	0.06	1000
AJ-PUD07500	75	38	121	0.08	1000
AJ-PUD10000	100	33	150	0.10	1000
AJ-PUD12500	125	33	187	0.13	1000
AJ-PUD15000	150	33	224	0.15	1000
AJ-PUD17500	175	33	261	0.18	1000
AJ-PUD20000	200	33	298	0.20	1000
AJ-PUD22500	225	33	337	0.23	1000
AJ-PUD25000	250	33	374	0.25	1000

Bidirectional Carbon fiber prepreg fabric

Type	Yarn		weave	Dry weight (g/m2)	Resin Content (%)	Total Weight (g/m2)	Thickness (mm)	Width (mm)
	Warp	Weft						
AJ-P11200	1K	1K	Plain	120	40	205	0.16	1000
AJ-T1120	1K	1K	Twill	120	40	205	0.16	1000
AJ-P3200	3K	3K	Plain	200	40	330	0.28	1000
AJ-T3200	3K	3K	Twill	200	40	330	0.28	1000
AJ-S3240	3K	3K	Stain	240	40	405	0.30	1000
AJ-P6320	6K	6K	Plain	320	40	530	0.40	1000
AJ-T6320	6K	6K	Twill	320	40	530	0.40	1000
AJ-S6400	6K	6K	Stain	400	40	665	0.40	1000
AJ-P12400	12K	12K	Plain	400	40	670	0.50	1000
AJ-T12480	12K	12K	Twill	480	40	800	0.55	1000

*** Glass transition - 130 ～ 150 ℃

E.Carbon /glass / aramid fiber hybrid fabric

Carbon/glass/aramid fiber hybrid fabric, also known as hybrid composite fabric, is a type of woven fabric that combines carbon fibers, glass fibers, and aramid fibers at various weaving in fabric structure. The hybridization of these different fiber materials offers a combination of their respective properties, resulting in enhanced performance and versatility.

Product Data:

Style	Weave Pattern	Weight (GSM)	Reinforcement Yarn		Fiber Count(/10mm)		Thickness (mm)	Width (cm)
			Warp	Weft	End Count	Pick Count		
AJ-CKY-P200	Plain	200	3K	Yellow Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKY- T200	Twill	200	3K	Yellow Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKR-P200	Plain	200	3K	Red Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKR-T200	Twill	200	3K	Red Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKB-P200	Plain	200	3K	Blue Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKB-T200	Twill	200	3K	Blue Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKO-P200	Plain	200	3K	Orange Kevlar 1500D	5.5	5.5	0.25	100-150
AJ-CKO-T200	Twill	200	3K	Orange Kevlar 1500D	5.5	5.5	0.25	100-150

6.Resin Products

A.Epoxy resin for carbon fabric

Epoxy resin is commonly used as both a matrix material and adhesive for carbon fabric composites. It serves a dual purpose by providing the bonding strength between layers of carbon fabric as well as acting as a matrix to encapsulate and reinforce the carbon fibers.
The high strength, excellent bonding properties, and versatility of epoxy resin make it a preferred choice for adhesive applications with carbon fabric. Its ability to provide strong adhesion, durability, and chemical resistance contributes to the overall performance and longevity of carbon fabric composite structures.

Product Data:

Appearance	Component A: Transparent viscous liquid	Operable time (min) (25℃)	>30
	Component B: Brown viscous liquid	Finger touch dry time (20 ℃ ,h)	1~2
Bonding strength	C60 concrete damage	Mixture ratio (by weight)	A:B = 2:1
Viscosity of mixtures	4000-6000Pa.s	Curing material density	1.10±0.10g/cm^3
Steel – steel bonding strength (MPa)	⩾ 14	pulling adhesion strength along with concrete (Mpa)	⩾ 2.5

B.Epoxy resin for Carbon plate

Epoxy resin is also commonly used as an adhesive for reinforcing carbon plates. Epoxy resin serves as the adhesive material that strongly bonds the carbon fiber laminates to strengthen and reinforce composite application in bridge, beams, column, panels, and other civil construction.

Product Data:

Appearance	Component A: White putty	Operable time (min)（25℃）	>30
	Component B: Brown viscous liquid	Mixing Ratio（weight）	3:1

	item	index
Colloidal performance	Tensile strength (MPa) Tensile elastic modulus (MPa) Elongation (%) Bending strength (MPa) Compressive strength (MPa)	⩾ 30 ⩾ 3.5×10^3 ⩾ 1.3 ⩾ 45 ⩾ 65
Adhesion performance	Steel-steel tensile anti-shear strength (MPa) Steel - steel uneven tear strength (kN / m) Steel – steel adhesion strength (MPa) Pulling adhesion strength along with concrete (MPa)	⩾ 15 ⩾ 16 ⩾ 133 ⩾ 2.5
Non-volatile matter content (solid content) (%)		⩾ 99.5

C.Crack injection epoxy

Crack injection epoxy refers to a type of epoxy resin specifically designed for repairing and reinforcing cracks in various substrates, such as concrete, masonry, and other structural materials. It is commonly used in construction, civil engineering, and repair applications where crack sealing and structural integrity restoration are required.

Product Data:

Number	Test Items	Measurement	Requirements of Standard (First Class A Level)	Test Results	Individual Conclusion	Test Methods
1	Tensile Strength	MPa	⩾ 30	53.9	Pass	GB/T 2567-2008 5.1
2	Compressive Strength	MPa	⩾ 65	74.6	Pass	GB/T 2567-2008 5.2
3	Bending Strength	MPa	⩾ 45, not be cataclastic shape failure	72.0, not be cataclastic shape failure	Pass	GB/T 2567-2008 5.3
4	Steel to Steel Tensile Shear Strength	Standard Value ((23±2)°C ,(50±5)% RH)	MPa	⩾ 15	19.1	Pass	GB/T 7124-2008
		Average Value ((60±2)°C , 10min)	MPa	⩾ 17	/	/	/
		Average Value ((-45±2)°C , 30min)	MPa	⩾ 17	/	/	/