重庆国际复合材料股份有限公司
CHONGQING POLYCOMP INTERNATIONAL CORPORATION

WIND ENERGY PRODUCTS

FIBERGLASS INTEGRATED SOLUTION

GLASS FIBER SOLUTION EXPERT

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INNOVATIVE COMPOSITE MATERIAL TOWARDS THE GREEN FUTURE

COMPANY PROFILE

Chongqing Polycomp International Corporation (hereinafter referred to as "CPIC" or "the Company"), established in 1991, is an important pillar of Yuntianhua Group Co., Ltd. in the new glass fiber material industry. As a high-tech enterprise with the core business of R&D, production and sales of glass fibers and composite materials, CPIC focuses on new high-performance materials and is committed to developing high-performance products with stable quality and continuous innovation, so as to provide customers with valuable services and application solutions.

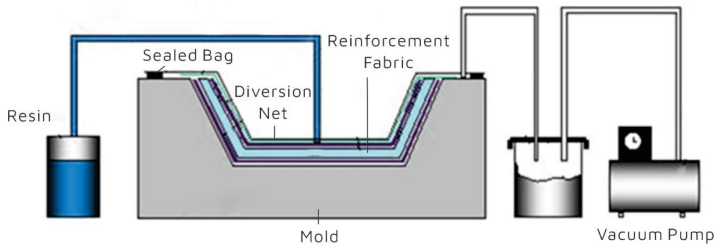
As a reinforcing material for composite materials, glass fiber has the characteristics of lightweight, high strength, durability, and environmental friendliness. It is widely used in wind power blades, photovoltaic bracket frames, automobiles and rail transit, electronic appliances, electrical insulation, building materials, doors and windows, industrial pipes and tanks, aerospace and other important fields. In more than 30 years of continuous development, CPIC now has 12 production bases and 18 glass fiber furnace production lines around the world, with an annual production capacity of more than 1 million tons of glass fiber, ranking third nationally and fourth globally in terms of production capacity. The core business areas such as emission reduction and 5G communication are in a leading position globally. The company's marketing network spreads all over the world, and it has established trading subsidiaries in the United States, the Netherlands and Hong Kong SAR of China. Its products are sold in dozens of countries and regions around the world, and it has established long-term and stable strategic cooperative relations with international well-known enterprises such as General Electric, DuPont, BASF, Siemens Gamesa, Vestas, Huawei, Zhuzhou Times New Material Technology, Sinoma Science & Technology and Kingfa Science & Technology.

Through years of exploration and efforts, CPIC now has a number of inventions and practical patents including ECT, TM, and TM+. The main products have passed Germanischer Lloyd (GL), Lloyd's Register of Shipping (LR), and U.S. Food and Drug Administration (FDA) certification. Since its establishment, CPIC has successively won many honors, such as China Grand Award for Industry, National Intellectual Property Advantage Enterprise, China Patent Excellence Award, China Famous Brand Product, National Key New Product, Chongqing Outstanding Innovative Enterprise, Chongqing Science and Technology Progress First Prize and many other honors.

In the light of the development idea of Yuntianhua Group, which takes "fertilizers and modern agriculture, glass fiber and composite materials, fine chemicals and new materials" as its main business and "building a green industry group with global influence" as its vision, CPIC takes the initiative to adapt to the new normal of economic development, continuously deepens the development strategy of "intensive industrial cultivation, sophisticated manufacturing, market precision, and refined management", optimizes the international production capacity layout and proactively extends the industrial chain, strives to develop new glass fiber products with high technology and environmental friendliness, comprehensively enhances its core competitiveness, and makes continuous efforts toward the goal of becoming the enterprise with the most valuable glass fiber and composite material in the world.

Process

Description



Vacuum Infusion: The mold is designed according to the required shape of the product, the reinforcing materials are laid on the mold, and the auxiliary materials are laid in turn. Finally, the vacuum bag is used to seal the space, and the air is sucked out from the vacuum bag by atmospheric pressure to form a negative pressure state. The resin is injected by pressure difference, and high-quality composite products are prepared by curing process.

Process Application Fields: wind energy, construction, transportation and ships.

Product

Profile

E-glass Fiber Direct Roving for Vacuum Infusion

Product code

ECT 468GS - 2400

- Glass type
- Sizing Code
- Linear Density Tex

Product Introduction

CPIC direct roving products for wind power are continuous glass fiber rovings made of ECT/TM+/TMII glass coated with sizing agents of different systems. It is used in machine-woven, knitted, and multi-axial fabrics and is compatible with corresponding resin systems in related fields and applications. Direct roving products for wind power have passed DNV-GL certification, with high tensile strength and modulus, excellent comprehensive mechanical properties, and are widely used in the design, development, and manufacture of wind power blades.

Product Features

Fast wet out and good permeability

low fuzz and great processing characteristics of infusion

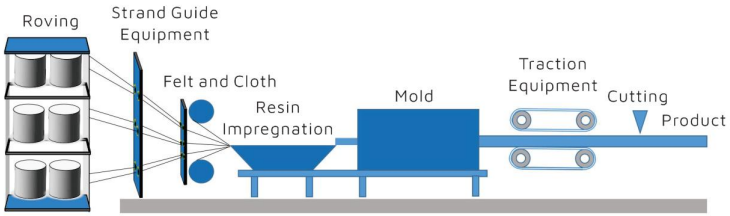
excellent comprehensive mechanical properties, suitable for multi-gradient blade design; sound product system, suitable for multi-resin (epoxy, polyester, polyurethane, vinyl) systems.

Product Catalog

Product Code	Typical Linear Density	Applicable Resin	Product Characteristics	Typical Applications	Optimum Shelf Life
468GS	300 600 1200 2400 3600 4800	EP epoxy	Excellent comprehensive mechanical properties and good weather resistance	Epoxy resin Blade field	18-Month
469LB		UP polyester	Good molding processability and mechanical properties	Polyester Blade field	24- Month
467W		PU Polyurethane	Good resin matching, excellent static performance and fatigue property, good wet out and interface bonding performance under high glass fiber content	Polyurethane Blade field	24- Month
469LE		UP polyester VE vinyl	Good matching compatibility with UP and VE, good molding processability and excellent mechanical properties of products	Polyester, Vinyl Blade field	24- Month

Process

Description



Pultrusion: It refers to the process of forming composite profiles by heating and curing the continuous fibers impregnated with resin through a molding die with a certain shape under the action of traction equipment.

Process Application Fields: Electric power, construction, communication, rail transit, and wind energy

Product

Profile

CPIC Wind Power Product for Pultruded Plank

Product code

TMII 468GS - 2400

- Glass type
- Sizing Code
- Linear Density Tex

Product Introduction

CPIC pultrusion wind power product is a continuous single-strand roving. The product can be produced with ECT\TM+\TMII glass of different modulus levels to meet the design requirements of longer and lighter blades. The product is produced with a special sizing agent and process, and the product system can be matched with various resin systems such as epoxy resin (EP) and polyurethane resin (PU) respectively.

Product Features

Silane coupling agent, good wet out performance with a resin system, excellent FRP static mechanical performance and fatigue performance;

Good strand integrity, uniform tension, good wear resistance, less fuzz breakage;

Good processability, good pay out performance without tangles and lumps.

Product Catalog

Sizing Code	Frequently used glass type	Fiber Diameter(μm)	Applicable Resin	Typical Applications
468GS	TM+	11-24	Epoxy resin	The main beam of wind turbine blade
	TMII			Higher modulus, longer main beam of wind turbine blade
467R	TM+		Polyurethane	The main beam of wind turbine blade
	TMII			Higher modulus, longer main beam of wind turbine blade

High-performance Glass System

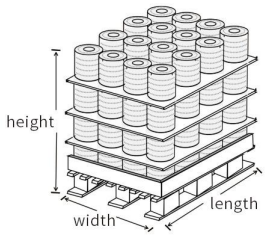
Among the CPIC glass types, ECT is an ordinary glass, TM+ is an ordinary high-modulus glass, and TMII is an ultra-high-modulus glass. The glass sizing type and fiber diameter can be designed and selected according to the customer's design requirements to customize products.

Glass Type	Fiber Diameter(μm)	Strength (Mpa) ISO 9163	Modulus (Gpa) ISO 9163
Ultra-high Moldulus TMII glass	11-24	⩾2800	95-97
High Moldulus TM glass	11-24	≥2700	88-92
Ordinary Modulus ECT glass	11-24	≥2300	82-86

Package

Specification

Package Specification:
Direct roving packaging method
(see Table I for pallet size)



Pallet Size Table I (Direct Roving) (Note: The following roll weights are for reference only, and the sales contract shall prevail)

Net weight of each roll (kg)	Nominal size of bobbin (mm)			Rolls/ layer	Layers/ pallet	Rolls/ pallet	Pallet size (mm)	Weight (kg) /pallet
	outer diameter	inner diameter	height					
17-19	280	161	260	16	3	48	1140x1140x940	816-912
				16	4	64	1140x1140x1200	1088-1216
22-24	310	161	260	12	3	36	1260x970x940	792-864
				12	4	48	1260x970x1200	1056-1152

Storage: If there is no special requirement, the product shall be stacked in a dry and cool place. If it is not used, please do not unpack the package to avoid moisture.

Application

Area

TM®-Glass

High-strength And High-modulus Glass Fiber

TM® series glass fiber is a kind of high-strength and high-modulus fiberglass, with higher elastic modulus and tensile strength, good impact resistance, excellent chemical stability, and high-temperature resistance. It is widely used in large turbine blades, aviation, aerospace, national defense and military industry, and other fields with strict requirements on the performance of composite materials.

Main Application of TM® Glass

TM® glass fiber is mainly used for main beam of large turbine blade, large section bar (long beam structure, pedestrian overpass), military bulletproof plate, high-pressure pipeline, sports leisure products, main keel of yacht,etc.

TM®性能参数表

Performance	Unit	Test Method	E-Glass	TM'-Glass	TM II-Glass
Density	(g/cm^3)	ASTM D 1505	2.59~2.63	2.58~2.62	2.58~2.62
Softening Temperature	(°C)	ASTM D338	840~850	900~920	910~930
Elastic Modulus	(Gpa)	ASTM D 2343	78~82	88~92	95~97
Tensile Strength	(Mpa)	ASTM D 2343	2100~2500	2700~3100	2800~3200
Acid Resistance	(%)	Weight Loss in 10% H_2SO_4 24h at 80°C	22.6	3.0	3.0

GLOBAL MANUFACTURE BASE AND MARKETING NETWORK

CPIC PROVIDES CLIENTS WITH FAST AND PROFESSIONAL SERVICES AROUND THE WORLD

OPEN MOLDING FIBERGLASS INTEGRATED SOLUTION

CLOSED MOLDING FIBERGLASS INTEGRATED SOLUTION

PULTRUSION FIBERGLASS INTEGRATED SOLUTION

PIPE & TANK FIBERGLASS INTEGRATED SOLUTION

PANEL FIBERGLASS INTEGRATED SOLUTION

MAT & FABRIC FIBERGLASS INTEGRATED SOLUTION

WIND ENERGY PRODUCTS FIBERGLASS INTEGRATED SOLUTION

THERMOPLASTIC PRODUCTS INTEGRATED SOLUTION

OTHER PROCESS FIBERGLASS INTEGRATED SOLUTION