



碳纤维产品手册

Carbon Fiber Product Brochure

■ 吉林化纤集团有限责任公司

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大丝束 高品质 通用化
小丝束 高性能 专业化

Heavy tow, high quality, universal
Small tow, high performance, professional

企业简介 COMPANY PROFILE

吉林化纤集团始建于1959年，现发展为以纤维材料及碳纤维复材制品研发、生产、销售为主的大型国有企业，下辖两家上市公司。是全球最大的人造丝、竹纤维、腈纶纤维供应商，全国最大的碳纤维生产基地，是国务院国资委首批确定的创建世界一流专精特新示范企业，所在区域被命名为国家级碳纤维高新技术产业化基地。

我们的碳纤维及复材产品被广泛应用于风电光伏、航空航天、轨道交通、压力容器、体育休闲和建筑补强等多个领域。我们致力于打造最强的国际化碳纤维产业基地，愿与合作伙伴共同开创光辉灿烂的明天。

Jilin Chemical Fiber Group Co., LTD. was founded in 1959, now the group has developed into a large-scale state-owned enterprise focusing on the research and development, production and sales of fiber materials and carbon fiber composite products, with two listed companies under its jurisdiction. Jilin Chemical Fiber Group Co., LTD. is the world's largest supplier of rayon, bamboo fiber and acrylic fiber, and the largest carbon fiber production base in China. It is one of the first batch of demonstration enterprises identified by the State-owned Assets Supervision and Administration Commission of the State Council as a model enterprise for the creation of world-class speciality and speciality, and the region where it is located has been named as a national carbon fiber high-tech industrialization base.

Our carbon fiber and composite products are widely used in wind power photovoltaic, aerospace, rail transit, pressure vessels, sports and leisure and building reinforcement and other fields. We have always been committed to creating the most competitive international carbon fiber industry base. In addition, we are willing to work with partners to create a brilliant future.





碳纤维原丝 PRECURSOR

目前, 我们的碳纤维原丝产能为16万吨/年, 未来将超过20万吨/年, 从源头把好质量关, 为碳纤维产量稳定与质量提升提供强有力的保障。公司自主创新独特生产工艺, 拥有多项自主研发专利技术, 产品质量具有均一稳定、碳化效率高等特性, 产品可根据客户的需求进行定制化生产, 最大限度满足客户需求。

At present, our carbon fiber production capacity is 160,000 t/a, it will exceed 200,000 t/a in the future. We will control from the source of good quality to provide a strong guarantee for the stability of carbon fiber production and quality improvement. Our company has independent innovation unique production process, a number of independent research and development of patented technologies to make our product quality uniform and stable, carbonization efficiency high. Besides, our products can be customized according to customers' needs.

项目 Item	单位 Unit	1K	3K	6K	12K	25K	35K	50K
线密度 Linear Density	g/m	0.118	0.353	0.705	1.470	2.890	3.945	5.635
		- 0.122	- 0.367	- 0.735	- 1.530	- 3.010	- 4.105	- 5.865
断裂强度 Tensile Strength	CN/dtex	≥6.20	≥6.20	≥6.20	≥6.10	≥6.00	≥6.00	≥6.00
断裂伸长率 Elongation	%	11±2	11±2	13±2	13±2	15±2	15±2	15±2
含油率 Oil Content	%	1.5±0.3	1.5±0.3	1.2±0.2	1.2±0.2	1.2±0.2	1.2±0.2	1.2±0.2

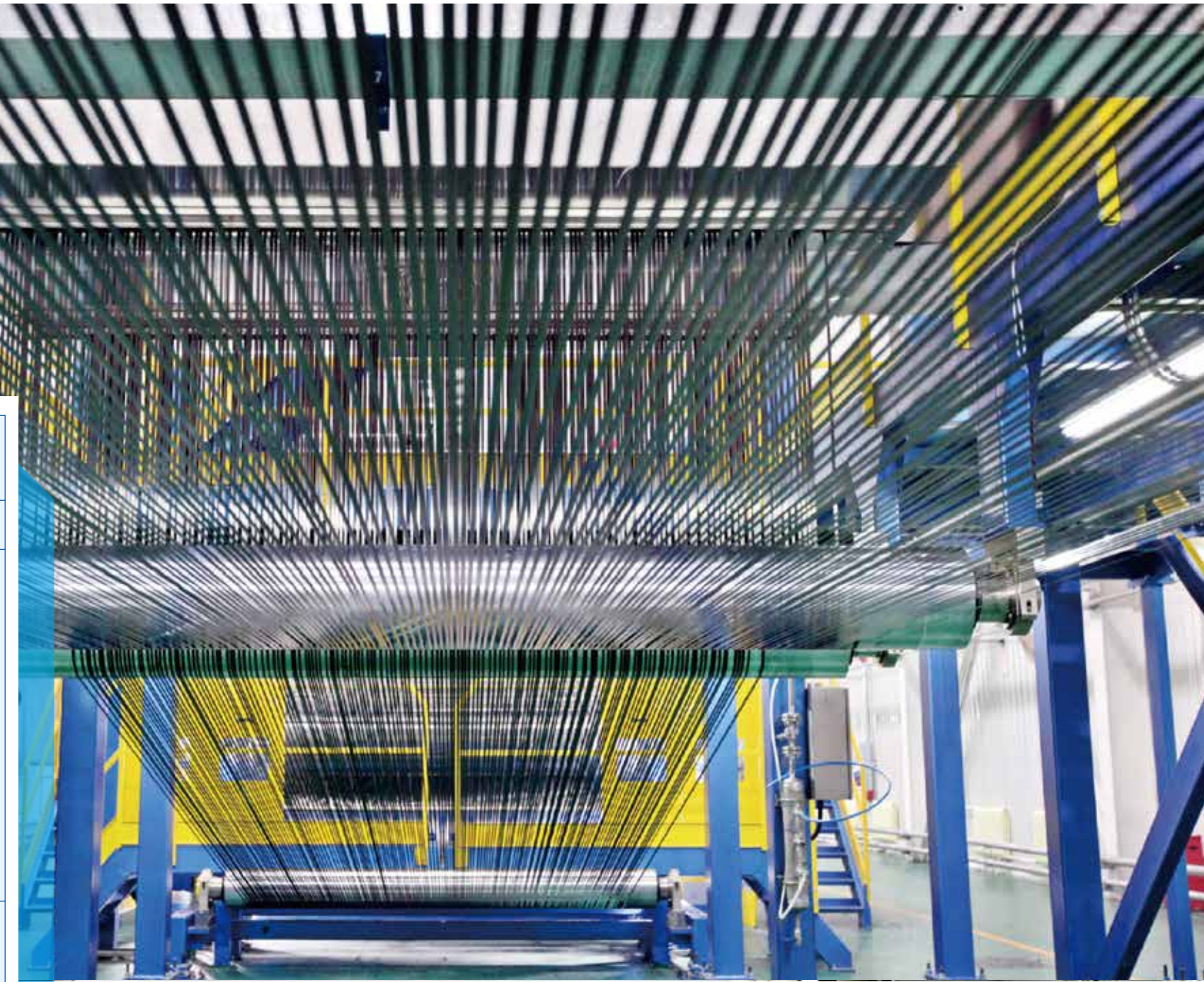
碳纤维 CARBON FIBER

目前,我们的碳纤维产能为49000吨/年,未来2年内将达到80000吨/年。
Our carbon fiber current total annual capacity is close to 49,000 tons, and will reach 80,000 tons in the next 2 years.

主要规格:1K, 3K, 6K, 12K, 25K, 35K, 50K
Main items : 1K, 3K, 6K, 12K, 25K, 35K, 50K

级别标准:GX400, GX700
Level standards : GX400, GX700

级别标准 Level Standards	丝束规格 Tow Size (K)	线密度 Linear Density	断裂强度 Tensile Strength	弹性模量 Tensile Modulus	断裂伸长 Elongation	体密度 Density	含碳量 Carbon Content
		g/1000m	MPa	GPa	%	g/cm³	%
GX400	1K	68±3	≥3700	≥235	>1.6~2.0	1.77±0.03	≥93
	3K	198±6	≥4000				
	6K	396±12	≥4200				
	12K	800±20	>4200~4900				
	25K	1600±20					
	35K	2100±50					
	50K	2580±80					
GX700	12K	800±20	≥4900	≥235	>1.7~2.2	1.77±0.03	≥93
	25K	1600±20					
	35K	2100±50					
	50K	2580±80					



复合材料 COMPOSITE MATERIALS

◆ 复材产品包括碳纤维布、拉挤板、预浸料、预制体等,产品规格及指标参数可根据客户需求灵活调整。

Our composite products include carbon fabric, laminate, prepreg, preform, etc. Product specifications and index parameters can be flexibly adjusted according to customers' demand.

◆◆ 碳纤维编织布 Carbon Fabric

碳纤维编织布主要技术参数 Main technical parameters of carbon fabric					
项目 Item	单位 Unit	3K-200g		12K-400g	
		平纹 Plain	斜纹 Twill	平纹 Plain	斜纹 Twill
面密度平均值 Average Area Density	g/m ²	200±2	200±2	400±2	400±2
幅宽平均值 Average Width	mm	1000	1000	1000	1000
备注:幅宽、面密度可订制。 Note: width and area density can be customized.					

碳纤维单向布主要技术参数 Main technical parameters of unidirectional fabric				
项目 Item	一级品 I grade		二级品 II grade	
克重 Weight	200g/m ²	300g/m ²	200g/m ²	300g/m ²
理论厚度 Thickness	0.111mm	0.167mm	0.111mm	0.167mm
抗拉强度 Tensile Strength	≥3400MPa	≥3400MPa	≥3000MPa	≥3000MPa
弹性模量 Tensile Modulus	≥240GPa	≥240GPa	≥210GPa	≥210GPa
断裂伸长率 Elongation	≥1.7%	≥1.7%	≥1.5%	≥1.5%



碳纤维拉挤板 Carbon Fiber Laminate

检测项目 Test Item	单位 Unit	数值类型 Value Type	GX60	GX64	GX66
纤维体积含量 Fiber volume fraction	(%)	平均值 Mean	60±2	64±2	66±2
体密度 Density	g/cm ³	平均值 Mean	1.56±0.04	1.575±0.04	1.58±0.04
玻璃化转变温度 Tg	℃	平均值 Mean	≥105	≥105	≥105
0°拉、压性能 0° tension and compression performance	模量 (GPa) Modulus (GPa)	平均值 Mean	≥135	≥142.5	≥147.5
0°拉伸性能 0° tensile performance	强度 (MPa) Strength (MPa)	特征值2015版 Char. 2015	≥1450	≥1600	≥1650
	模量 (GPa) Modulus (GPa)	平均值 Mean	≥140	≥150	≥155
	应变 (%) Strain (%)	特征值2015版 Char. 2015	≥1.0	≥1.0	≥1.0
90°拉伸性能 90° tensile performance	强度 (MPa) Strength (MPa)	平均值 Mean	≥40	≥50	≥50
	模量 (GPa) Modulus (GPa)	平均值 Mean	≥7.5	≥8	≥8
0°压缩性能 0° compression performance	强度 (MPa) Strength (MPa)	特征值2015版 Char. 2015	≥1100	≥1200	≥1250
	模量 (GPa) Modulus (GPa)	平均值 Mean	≥130	≥140	≥140
	应变 (%) Strain (%)	特征值2015版 Char. 2015	≥0.8	≥0.9	≥0.92
90°压缩性能 90° compression performance	强度 (MPa) Strength (MPa)	平均值 Mean	≥142	≥150	≥152
	模量 (GPa) Modulus (GPa)	平均值 Mean	≥8.5	≥8.5	≥9
0°弯曲 (4PB) 性能 0° bending performance (4PB)	强度 (MPa) Strength (MPa)	特征值2015版 Char. 2015	≥1050	≥1100	≥1200
	模量 (GPa) Modulus (GPa)	平均值 Mean	≥130	≥133	≥140
	应变 (%) Strain (%)	特征值2015版 Char. 2015	≥0.75	≥0.8	≥0.83
层间剪切性能 Interlaminar shear performance	强度 (MPa) Strength (MPa)	平均值 Mean	≥56	≥60	≥60



碳纤维的特性和应用领域

CHARACTERISTICS AND APPLICATIONS OF CARBON FIBER

特性 Characteristics	应用领域 Application Fields
高强度 High tensile strength	高铁动车、缠绕气瓶、风力发电、补强加固等 High-speed Railway, gas cylinder, wind power, reinforcement, etc
强稳定性 Strong stability	电子设备、精密加工器具、仪表等 Electronic equipment, precision machining tools and instruments, etc
抗震动衰减性能优越 Excellent anti-vibration attenuation performance	机械臂、球拍、钓竿、高尔夫杆等 Mechanical arm, racket, fishing rod, golf club, etc
导电性 Conductivity	复合芯导线、绿电新能源等 Composite core conductor, green power and new energy, etc
化学性能稳定 Stable chemical performance	复合材料、压力容器、化学设备等 Composite materials, pressure vessels, chemical equipment, etc
耐腐蚀 Corrosion resistance	建筑补强、化工设备、储油罐等 Building reinforcement, chemical equipment, oil storage tank, etc
重量轻 Light in weight	汽车、轨道交通、航空航天、体育休闲等 Automobile, rail transit, aerospace, sports and leisure, etc
无生物毒性 No biological toxicity	医疗用品等 Medical supplies, etc



◆◆ 绿电新能源领域 Green Power and New Energy



◆◆ 轨道交通领域 High-speed Railway



◆◆ 体育休闲领域 Sports and Leisure



◆◆ 建筑补强领域 Construction Reinforcement



促进**节能减排** 助力**双碳目标** 为创造更美好的**地球生态**贡献力量

We are committed to promoting energy conservation and emission reduction, helping to reach the dual carbon goal and creating a better ecological earth.

