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Global Carbon Fiber Pultruded Board for Wind Turbine Blades Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global Carbon Fiber Pultruded Board for Wind Turbine Blades market size is expected to reach $ 3681 million by 2032, rising at a market growth of 14.9% CAGR during the forecast period (2026-2032).

Carbon fiber pultruded board for wind turbine blades refers to continuous CFRP plates or planks manufactured from PAN-based carbon fiber, mainly 24K, 25K, 48K and 50K large-tow carbon fiber, combined with epoxy, polyurethane or other thermoset resin systems through impregnation, pultrusion, curing, pulling and cutting. In commercial wind blade manufacturing, the product is primarily used as a spar-cap load-bearing material to improve blade stiffness, reduce blade weight, control tip deflection and support 100-meter-class blade designs. Upstream inputs include PAN precursor, carbon fiber tow, epoxy or polyurethane resin, curing agents, release agents, pultrusion dies and pulling equipment. Downstream applications include large onshore turbines, offshore turbines, ultra-long blades, hybrid carbon/glass blade structures and selected blade-root reinforcement parts.

In 2025, global carbon fiber pultruded board for wind turbine blades production reached approximately 90 kilotons, with an average global market price is $13 per kilogram.

From a global industry perspective, this product is a key reinforcement material for large-megawatt, long-blade and offshore wind turbine blade structures. Compared with conventional fiberglass spar caps, carbon fiber pultruded boards provide higher specific strength and specific modulus, helping reduce structural mass and improve load-bearing efficiency as blade length increases. A U.S. Department of Energy study reported about 25% blade mass reduction when carbon fiber spar caps were used

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instead of fiberglass, highlighting the value of carbon fiber in long-blade lightweighting. R?chling's pultruded spar-cap profile materials also state that such profiles offer high mechanical properties, lower manufacturing risk and shorter shell-mold occupancy time.

In terms of industry trends, carbon fiber pultruded boards for wind turbine blades are moving toward wider boards, thicker profiles, higher modulus, lower defect levels, faster curing, lower cost, heavy-tow carbon fiber, automated lay-up and diversified resin systems. Traditional carbon fabrics or prepreg solutions can face constraints in cost, lay-up efficiency and large-scale consistency, while pultruded boards can enter the blade mold as pre-manufactured stable intermediate materials, improving fiber alignment, fiber volume fraction and batch repeatability. ZOLTEK?s pultruded carbon fiber product information also highlights high fiber volume, low void content and locked-in filament alignment. Polyurethane-carbon fiber pultruded spar-cap technology has also been applied to wind blades; Dow describes it as a tailored pultrusion route for efficient production of carbon fiber laminates for spar caps.

The main growth drivers come from three areas. First, onshore and offshore wind turbines continue to scale up, with longer blades, larger swept areas and higher bending loads, increasing the need for higher stiffness, lower weight and better fatigue life in spar-cap structures. Second, turbine OEMs and blade manufacturers are placing greater emphasis on levelized cost of energy, transportation and installation, mold turnover efficiency and long-term operating reliability; pre-made pultruded boards help improve manufacturing consistency and reduce defect risk in spar-cap areas. Third, the development of heavy-tow carbon fiber, fast-curing resin systems and continuous pultrusion processes supports lower structural cost per unit, enabling carbon fiber to expand from premium long blades into broader large-megawatt blade applications.

This report studies the global Carbon Fiber Pultruded Board for Wind Turbine Blades production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for Carbon Fiber Pultruded Board for Wind Turbine Blades and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of Carbon Fiber Pultruded Board for Wind Turbine Blades that contribute to its increasing demand across many markets.

Highlights and key features of the study

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Global Carbon Fiber Pultruded Board for Wind Turbine Blades total production and demand, 2021-2032, (Kilotons)
Global Carbon Fiber Pultruded Board for Wind Turbine Blades total production value, 2021-2032, (USD Million)
Global Carbon Fiber Pultruded Board for Wind Turbine Blades production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons), (based on production site)
Global Carbon Fiber Pultruded Board for Wind Turbine Blades consumption by region & country, CAGR, 2021-2032 & (Kilotons)
U.S. VS China: Carbon Fiber Pultruded Board for Wind Turbine Blades domestic production, consumption, key domestic manufacturers and share
Global Carbon Fiber Pultruded Board for Wind Turbine Blades production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Kilotons)
Global Carbon Fiber Pultruded Board for Wind Turbine Blades production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons)
Global Carbon Fiber Pultruded Board for Wind Turbine Blades production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Kilotons)

This report profiles key players in the global Carbon Fiber Pultruded Board for Wind Turbine Blades market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Zoltek, R?chling Industrial, Fiberline Composites, Exel Composites, Epsilon Composite, Aksa, Jilin Chemical Fibre, Weihai Guangwei Composites, Aosheng Composite Materials, Nanjing Hitech Composites, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World Carbon Fiber Pultruded Board for Wind Turbine Blades market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Kilotons) and average price (US$/Ton) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by

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year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global Carbon Fiber Pultruded Board for Wind Turbine Blades Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global Carbon Fiber Pultruded Board for Wind Turbine Blades Market, Segmentation by Type:

48K

24K

Below 12K

Global Carbon Fiber Pultruded Board for Wind Turbine Blades Market, Segmentation by Resin System:

Epoxy-based

Polyurethane-based

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Others

Global Carbon Fiber Pultruded Board for Wind Turbine Blades Market, Segmentation by Product Structure:

Pure Carbon Fiber

Carbon-Glass Hybrid

Others

Global Carbon Fiber Pultruded Board for Wind Turbine Blades Market, Segmentation by Application:

Offshore Wind Power

Onshore Wind Power

Companies Profiled:

Zoltek

R?chling Industrial

Fiberline Composites

Exel Composites

Epsilon Composite

Aksa

Jilin Chemical Fibre

Weihai Guangwei Composites

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Aosheng Composite Materials

Nanjing Hitech Composites

Zhenshi Group

Jiangsu Hengshen

Key Questions Answered:
1. How big is the global Carbon Fiber Pultruded Board for Wind Turbine Blades market?
2. What is the demand of the global Carbon Fiber Pultruded Board for Wind Turbine Blades market?
3. What is the year over year growth of the global Carbon Fiber Pultruded Board for Wind Turbine Blades market?
4. What is the production and production value of the global Carbon Fiber Pultruded Board for Wind Turbine Blades market?
5. Who are the key producers in the global Carbon Fiber Pultruded Board for Wind Turbine Blades market?
6. What are the growth factors driving the market demand?

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