

Fiber Reinforced Composites Market Size to Surge USD 149.9 billion by 2029 | Predicts Exactitude Consultancy

The fiber-reinforced composites market is driven by lightweighting demand, aerospace growth, renewable energy, advanced manufacturing, and sustainability.

LUTON, BEDFORDSHIRE, UNITED KINGDOM, November 21, 2023 /EINPresswire.com/ -- The [Fiber Reinforced Composites Market](#) is expected to grow at 5.9% CAGR from 2023 to 2029. It is expected to reach above USD 149.9 billion by 2029 from USD 89.49 billion in 2022.



The global fiber-reinforced composites market is currently being driven by several factors, including rising aerospace demand, the use of composites in the production of lightweight automotive components, and the enlargement of wind turbine blades to generate more energy in onshore and offshore wind power plants. However, carbon fibre and glass fibre composites are more expensive than traditional materials like steel or wool. The high cost is due to the high cost of fibre manufacturing as well as the expense of creating composites with advanced machinery. Fiber-reinforced composites are used in the sporting goods, construction, aircraft, automotive, and wind energy industries due to their incredible strength and light weight.

“ The fiber-reinforced composites market is experiencing robust growth driven by increasing demand in aerospace, automotive, and construction industries.”

Exactitude Consultancy

Fiber-reinforced composites (FRCs) are man-made materials that consist of a complicated combination of fiber and resin. FRCs are composed of reinforcing fiber, matrix, and an interphase area. The reinforcement fiber increases the matrix's strength and improves the

composites' quality while reducing their weight. Glass, carbon, and aramid make up most of the reinforcement fibers. The matrix attaches the fiber reinforcement, gives the composite component its shape, and dictates its surface quality. A composite matrix can be composed of polymers, ceramics, metals, or carbon. The reinforcement fiber is responsible for providing the matrix with strength, while the matrix protects the fiber from external wear and tear.

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Recent Developments

- 2022- Avient Corporation announced the release of nine new reSoundä BIO thermoplastic elastomers formulated with bio-renewable content from plants.
- 2022- Avient Corporation launched new bio-based polymer solutions for medical and pharmaceutical applications.
- 2022- Hexcel Corporation launched HexPLY,â, made from bio-derived resin content with natural fiber reinforcements.
- 2022- Hexcel Corporation and Archer Aviation entered a letter of intent covering a proposed relationship for high-performance carbon fiber material supply.

North America will command the 56% share of the fiber-reinforced composites market during the forecast period.

Asia-Pacific growing at a CAGR of 7.8%. Countries such as China and Japan are significant contributors to the Asia-Pacific fiber-reinforced composites market. China is the most significant producer of automobiles globally; rising industrialization and disposable incomes have led to an increase in vehicle sales. However, the growing focus on vehicle emissions results from the rapid expansion of the automobile market. Therefore, a top economist predicts that the sector will focus on light-weighting, reducing fuel consumption, and developing new energy vehicles (NEVs). This is predicted to provide new growth prospects for the fiber-reinforced composites market.

Europe will hold a share of USD 39,435.23 million with a CAGR of 4.5% during the forecast period. Europe is an essential region for fiber-reinforced composites because of the collaboration and cooperation between industry and research. Fiber-reinforced composites research and development are necessary for creating new products and the automation and optimization of production. Consequently, countries such as Germany play a crucial role in this regard, as Germany possesses immense strength in technological and manufacturing sectors such as the automotive, aerospace, and electronics industries. Offshore wind power is viewed as

a promising renewable energy source in the wind energy market, and European nations are hopeful about decarbonizing their economies by 2029.

Fiber Reinforced Composites Market Technological Trends

- Advanced Fiber Materials:

Continued development of high-performance fiber materials, such as carbon fibers, glass fibers, and aramid fibers, to enhance the mechanical properties of composites.

- Nano-Reinforcements:

Integration of nanomaterials, such as carbon nanotubes and graphene, to further improve the strength, stiffness, and overall performance of composites.

- Additive Manufacturing (3D Printing):

Growing use of additive manufacturing techniques for producing fiber-reinforced composite structures, allowing for more complex and customized designs.

- Automated Manufacturing Processes:

Advancements in automated manufacturing processes, such as automated fiber placement (AFP) and automated tape laying (ATL), to enhance production efficiency and reduce labor costs.

- Recycling and Sustainability:

Increasing focus on the development of sustainable composites, including the use of bio-based fibers and recycling technologies to address environmental concerns.

Fiber Reinforced Composites Market Growth Factors

- Lightweighting Trends:

Industries such as automotive, aerospace, and wind energy continue to seek lightweight materials to improve fuel efficiency, reduce emissions, and enhance overall performance. Fiber-reinforced composites offer a high strength-to-weight ratio, making them attractive for these applications.

- Increasing Demand in Aerospace and Defense:

The aerospace and defense sectors have a consistent demand for lightweight and high-strength materials. Fiber-reinforced composites are used in aircraft components, missiles, and other

defense applications.

- Growing Automotive Applications:

Automotive manufacturers are increasingly incorporating fiber-reinforced composites to reduce vehicle weight and improve fuel efficiency without compromising safety and performance.

- Renewable Energy Expansion:

The wind energy sector utilizes fiber-reinforced composites in the manufacturing of wind turbine blades. As the demand for renewable energy sources grows, so does the demand for these composite materials.

- Advancements in Manufacturing Technologies:

Continuous improvements in manufacturing processes, such as automated fiber placement and 3D printing, contribute to increased efficiency, reduced costs, and expanded possibilities for complex designs.

- Development of New Fiber Materials:

Ongoing research and development in fiber technology, including carbon fibers, glass fibers, and natural fibers, lead to the creation of materials with improved properties, widening the scope of applications for fiber-reinforced composites.

Fiber Reinforced Composites Market Players

- BASF SE
- E. I. du Pont de Nemours and Company
- Hexcel Corporation
- Huntsman International LLC.
- Reliance Industries Limited
- Avient Corporation
- SGL Carbon
- Solvay SA
- RTP Company
- Enduro Composites Inc.
- COTESA GmbH

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Key Market Segments: Fiber reinforced composites market

Fiber Reinforced Composites Market By Fiber Type, 2023-2029, (USD Billion), (Kilotons)

- Carbon
- Glass
- Aramid Fibers
- Others

Fiber Reinforced Composites Market By Resin Type, 2023-2029, (USD Billion), (Kilotons)

- Thermoset Composites
- Thermoplastic Composites

Fiber Reinforced Composites Market By End User, 2023-2029, (USD Billion), (Kilotons)

- Building And Construction
- Automotive
- Electrical And Electronics
- Aerospace And Defense
- Sporting Goods
- Wind Energy
- Others

Market Dynamics

Drivers:

- **Lightweight Properties:** Fiber-reinforced composites are known for their lightweight characteristics, making them highly desirable in industries such as automotive and aerospace, where weight reduction is a critical factor for fuel efficiency and performance.
- **High Strength-to-Weight Ratio:** The materials offer a high strength-to-weight ratio, providing structural integrity while minimizing overall weight. This makes them suitable for various applications in construction, transportation, and sporting goods.
- **Increasing Demand in Automotive Sector:** With a growing emphasis on fuel efficiency and environmental sustainability, the automotive industry has been increasingly incorporating fiber-reinforced composites to reduce vehicle weight and improve fuel economy.

Restraints:

- **High Costs:** The production costs of fiber-reinforced composites, especially those using

advanced fibers like carbon fiber, can be relatively high. This has been a limiting factor in the widespread adoption of these materials, particularly in price-sensitive markets.

- **Recycling Challenges:** Recycling composites can be challenging compared to traditional materials. The disposal and recycling of composite materials pose environmental challenges, and finding sustainable solutions is an ongoing concern.

Opportunities:

- **Growing Demand in Emerging Economies:** As developing economies continue to industrialize, there is an increasing demand for high-performance materials in construction, infrastructure, and transportation, presenting opportunities for the fiber-reinforced composites market.
- **Advancements in Manufacturing Technologies:** Ongoing advancements in manufacturing technologies, such as automation and additive manufacturing, can contribute to cost reduction and increased efficiency in the production of fiber-reinforced composites.

Challenges:

- **Material Standardization:** Lack of standardization in material properties and testing procedures can be a challenge for the industry. Establishing consistent standards can facilitate broader acceptance and use of these materials.
- **Durability and Long-Term Performance:** Ensuring the long-term durability and performance of fiber-reinforced composites in various environmental conditions is an ongoing challenge that requires continuous research and development.

Key Question Answered

1. What is the current size of the Fiber reinforced composites market?
2. What are the key factors influencing the growth of Fiber reinforced composites market?
3. Who are the major key players in the Fiber reinforced composites market?
4. Which region will provide more business opportunities Fiber reinforced composites market in future?
5. Which segment holds the maximum share of the Fiber reinforced composites market?

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Glass Fiber Reinforced Concrete (GFRC) Market by Manufacturing process (Spray, Premix, Hybrid), by End User (Residential Construction, Commercial Construction, Infrastructure Construction) and Region, Global Trends and Forecast from 2023 To 2029

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Soluble Dietary Fibers Market by Source (Fruits & Vegetables, Nuts & Seeds, Cereals & Grains), Type (Inulin, Pectin, Polydextrose, Beta-Glucan), Application (Functional Food & Beverages, Animal Feed, Pharmaceuticals), and by Region (North America, Europe, Asia Pacific, South America, Middle East, and Africa) Global Trends and Forecast from 2023 to 2029

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Recycled Carbon Fiber Market by Product Type (Semi-Continuous, Chopped Recycled Carbon Fiber, Milled Recycled Carbon Fiber), Source (Aerospace Scrap, Automotive Scrap, Others), End-User (Automotive & Transportation, Consumer Goods, Sporting Goods, Industrial, Marine, Aerospace & Defense, Others), And Region (North America, Europe, Asia Pacific, South America, Middle East, and Africa), Global trends and forecast from 2023 to 2029

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Aramid Fiber Market by Product (Para-aramid, Meta-aramid) Application (Security & Protection, Frictional Materials, Rubber Reinforcement, Optical Fibers, Tire Reinforcement, Electrical Insulation, Aerospace) and by Region (North America, Europe, Asia Pacific, South America, Middle East, and Africa) Global Trends and Forecast from 2023 to 2029

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