

# Glass Fiber Textile in Automotive Market Report: Trends, Forecast and Competitive Analysis to 2030

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## Abstracts

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### Glass Fiber Textile in Automotive Trends and Forecast

The future of the global glass fiber textile in the automotive market looks promising with opportunities in the door panel, bulkhead, bodywork, suspension system, and engine compartment markets. The global glass fiber textile in the automotive market is expected to grow with a CAGR of 3.9% from 2024 to 2030. The major drivers for this market are the increasing demand for lightweight materials, technological advancements in glass fiber textile production that improve material properties, and a growing focus on sustainability.

Lucintel forecasts that, within the product type category, woven roving is expected to witness the highest growth over the forecast period.

Within the application category, door panels are expected to witness the highest growth.

In terms of regions, APAC is expected to witness the highest growth over the forecast period.

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### Emerging Trends in the Glass Fiber Textile in Automotive Market

Glass fiber textiles are disrupting the automotive market by advancing changes in strategies related to material dispersal, especially lightweight materials, and green mediums. These five trends are significant in the development of this market:

**Increased Adoption of Electric Vehicles (EVs):** As manufacturers move towards electric vehicles, they have created a need for materials that are lightweight and durable. Manufacturers are adopting glass fiber textiles for their low-weight characteristics, which allow the vehicle to travel better distances and improve overall performance. Thus, with the emerging market for EVs, core polymer glass fiber composites are now offered to customers for transportation equipment that meets wartime and strategic management requirements.

**Progress in Hybrid Composite:** The acceptance of linear composites, combined with other materials (such as carbon fiber, resin, etc.), is also observed in the car industry. These materials, particularly composites that integrate plastic polymers with silica, possess more strength, better impact resistance, and enhanced thermal properties. This helps companies maintain the trade-off between weight, strength, and cost in vehicle design, especially for performance vehicles and electric vehicles.

**Sustainability and Circular Economy:** Glass fiber textiles enhance the sustainability mindset, which is valuable for automakers and society as a whole. They are fabricated sustainably and can be incorporated into new automotive components, minimizing waste and increasing the circular economy. As such, they align with global political trends encouraging car makers to cut carbon emissions during the manufacturing of automobiles. Additionally, automakers are looking forward to bio-based glass fibers that are less harmful to the environment.

**Trends in Customization and Aesthetic Design Glass:** Glass fiber textile applications have evolved from being used only for functional parts to including aesthetic and platform customization. Manufacturers have also adopted the use of glass fiber textiles in high-end vehicle cabin applications, such as trim panels and upholstery. These materials can be formed into complex patterns and finishes, which give vehicle makers the flexibility to reposition their brands in the competitive automobile industry.

**Technological Advances in Production:** Cutting-edge manufacturing processes

like 3D weaving and automated fiber placement have transformed glass fiber textile production. These technologies contribute to ongoing initiatives aimed at enhancing speed, efficiency, and cost-effectiveness in the production of glass fiber components. The manufacturing process for parts has become more efficient, owing to the increased ability to produce intricate structures and integrate several functionalities into a single part, which reduces manufacturing costs, enhances quality, and enables automotive manufacturers to be more flexible in their designs.

The market share for glass fiber textiles in the automotive industry is also changing due to the above factors, as the market grows in demand for lightweight, strong, and environmentally friendly materials. Automotive manufacturers are shifting to improved material utilization, new manufacturing methods, and increasing green technologies. This trend is driving the market toward a scenario where glass fiber textiles will play a larger role in vehicle design and the manufacturing process, especially within electric vehicles and hybrid composites, which are the dominating trends.

#### Recent Developments in the Glass Fiber Textile in Automotive Market

There are many recent developments in the glass fiber textile that are impacting the automotive markets. These developments are beneficial to both material characteristics and production productivity for automakers to adhere to stricter norms and consumers' expectations for cars that work better.

**Advancements in Composite Materials:** New composite materials include fiberglass and other fibers such as carbon and aramid, making automotive components stronger and even lighter in weight. These materials are being utilized in interior elements of performance-oriented automobiles such as bumper, door panels, and body frames leading to better fuel economy and safety on conventional and electric-powered vehicles.

**Expansion of Production Facilities:** Expansion of production capacities with a focus on glass fiber textiles is a global trend among car manufacturers. For instance, leading market players in China and Germany are equipped with the newest production line to follow the demand. Such facilities employ the processing of production in a way that minimizes time and costs which encourages usage of glass fiber textiles in ordinary automobile models.

**Automotive Industry Collaboration with Material Scientists:** The cooperation of car manufacturers and material scientists has been propelling the development of tubular frameworks from glass fiber textiles. It has also opened new opportunities for the improvement of 'smart' textile materials, for example, their use in hot and cold extremes and high-impact conditions, as well as for recycling. These advancements help fabrication enterprises meet the performance requirements of the markets without sighting the constraints of the countries' sustainability policies.

**Rising Application in Autonomous Vehicle Elements:** The enhancement in the application of glass fiber textiles is due to its provision of the structural support and versatility that is important in the precise integration of sensors and other components in autonomous vehicle development. This trend emphasizes how the automotive sector is utilizing high-performance materials in the development of new-generation vehicles.

**Government Policies and Incentives:** Policies and incentives are also being easily enforced due to various countries encouraging the use of sustainable materials in the making of vehicles. For example, the USA and the European Union have come up with laws that encourage the use of light materials like glass fiber textiles, that are useful in increasing the strength of the structure and reducing its gas emissions. Such policies are making it easier and cheaper for manufacturers to incorporate glass fiber technologies as part of the green strategies in the auto manufacturing process.

These developments highlight a shift in the automotive perspective on the usage of glass fiber textiles. They improve automotive efficiency, lower costs, and help achieve environmental goals. Since there is a high demand for lightweight, strong materials and the technological advancement in composite materials, glass fiber textile will still have a vital function in the future vehicle manufacturing processes.

### Strategic Growth Opportunities for Glass Fiber Textile in Automotive Market

Due to technological development and changes in consumer behavior, the automotive industry glass fiber textile in the automotive market is increasing at a rapid pace. Here are five key growth opportunities by application:

**Electric Vehicle (EV) Components:** The electric vehicles market provides a great

opportunity for glass fiber textiles. Glass fiber textiles are almost essential for components such as battery enclosure, structural components, and interior panels within the EV market. As more car manufacturers begin shifting their production towards EVs, the demand for these textiles will increase.

**Advanced Driver Assistance Systems (ADAS):** Several features are integrated within ADAS such as sensors, cameras, and radar systems, and thus require housing and structural components that are specific. ADAS contains systems that are delicate and need modern vehicles to have energy-absorbing glass fiber textiles that safeguard them. With advancements in ADAS, new materials such as glass fibers which are strong and light will be in demand.

**Interior Design Innovations:** There is an increased and continued application of glass fiber textiles in automotive premium interiors. The composites are well suited for the center stack, seat back, and other cabin trim components since they provide design versatility and maintain strength-to-weight properties. This segment is set to expand as automobile manufacturers seek to provide more luxurious and personalized vehicle interiors.

**Lightweight Structural Components:** The trend to lessen the weight of the vehicle to obtain better fuel efficiency will support the growth of such composite materials as glass fiber textiles in the structural components. These materials are becoming common in the body panels, chassis components, and bumpers which bring about a considerable reduction of weight without changing the safety or the performance standards.

**Sustainable Manufacturing and Recycling:** In each of these steps, when it happens that the automobile companies work towards easier devastation, there is often a need for recycling or reusing certain Material. As such, glass fiber textiles and composites contribute to the production of closed-loop systems that support automobile manufacturers' sustainability targets. The emphasis on circular economy strategies brings in positive growth or prospects for firms that are adopting glass fiber technologies.

It is these applications that stress how key glass fiber textiles are becoming within the automobile world. The emphasis is on energy efficiency improvement, safety enhancement, and lightweighting; the regulatory environment supports these opportunities for both the manufacturers and suppliers in the industry.

## Glass Fiber Textile in Automotive Market Driver and Challenges

There are several important drivers and challenges in the glass fiber textile in the automotive market. It is therefore necessary to understand these drivers and challenges as one adapts to the changing market.

The factors responsible for driving the glass fiber textile in the automotive market include:

**Demand for Lightweight Materials:** Increased market competition and government policies regarding overweight restrictions on vehicles to improve fuel efficiency and control emissions are core drivers for the adoption of lightweight materials such as glass fiber textiles. These materials help automakers meet extreme fuel economy objectives while still fulfilling the requirements for strength and safety.

**Sustainability and Regulatory Support:** Growing awareness of sustainability and various government regulations, such as the EU Green Deal and other carbon reduction policies, are facilitating manufacturers' use of sustainable materials. Glass fiber textiles are even more eco-friendly because they are recyclable, and production process has a relatively low negative impact on the environment.

**Technological Advancements in Composite Manufacturing:** The introduction of new technologies, such as automated fiber placement and 3D weaving, has made glass fiber composite manufacturing quicker, cheaper, and more effective. These innovations have led to a decrease in production costs and the mainstream adoption of advanced glass fiber textiles.

**Rising Demand for Electric Vehicles:** There is a high demand for lightweight materials due to the transition to electric vehicles. Glass fiber composites are lightweight materials that help in manufacturing electric vehicles' lightweight designs, offering improved energy efficiency and driving range. They are essential for the increasing demands of future vehicle designs.

**Cost-Effectiveness:** Glass fiber fabrics are an inexpensive alternative to carbon fiber composites. Their low cost and excellent mechanical properties make them suitable for mass production in the automotive industry.

Challenges in the glass fiber textile in the automotive market are:

**High Initial Manufacturing Costs:** Although glass fiber textiles may be cost-effective in the long run, the high cost of setting up production plants and acquiring new technologies can be prohibitive for small companies. This challenge hinders widespread adoption.

**Competition from Other Materials:** Other materials in the lightweight automotive market, such as carbon fibers, aluminum, and some advanced polymers, present stiff competition. These substitutes tend to offer better performance in some cases, posing a challenge to glass fiber textiles.

**Recycling and Disposal Issues:** Although glass fiber textiles can be recycled, the processes used to reclaim glass fiber fabrics are still inefficient compared to other materials, especially as demand increases. These issues will need to be addressed by manufacturers as they strive for a true circular economy.

The increase in demand for lighter and more affordable vehicle construction materials, regulations to control emissions, and improvements in the performance and functionality of glass fiber materials are stimulating the expansion of the market for glass fiber fabrics in the automotive sector. Nevertheless, barriers such as high entry costs, competition from other materials, and recycling efficiency must be solved to achieve continuous growth in the market.

#### List of Glass Fiber Textile in Automotive Companies

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. Through these strategies glass fiber textile in automotive companies cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the glass fiber textile in automotive companies profiled in this report include-

Owens Corning

Jushi Group

Chongqing Polycomp

Taishan Fiberglass

Taiwan Glass Group

Nippon Electric Glass

Sichuan Weibo

3B the Fiber Glass Company

Johns Manville Corporation

Nitto Boseki

## Glass Fiber Textile in Automotive by Segment

The study includes a forecast for the global glass fiber textile in automotive by product type, application, and region.

Glass Fiber Textile in Automotive Market by Product Type [Analysis by Value from 2018 to 2030]:

Woven Roving

Non-Crimp

Woven Yarn

CFM/CSM

Glass Fiber Textile in Automotive Market by Application [Analysis by Value from 2018 to 2030]:

Door Panel

Bulkheads

Bodywork

Suspension System

Engine Compartment

Others

Glass Fiber Textile in Automotive Market by Region [Analysis by Value from 2018 to 2030]:

North America

Europe

Asia Pacific

The Rest of the World

### Country Wise Outlook for the Glass Fiber Textile in Automotive Market

The glass fiber textile market in the automobile sector has seen significant growth, especially in the design of next-generation components that are lightweight, high-performance, safe, and environmentally sustainable. Over the last few years, there has been substantial growth in the use of glass fiber textiles for both automobile interior and exterior components. The United States, China, Germany, India, and Japan are some of the leading regions benefiting from these innovations. Such developments have contributed to advancements in materials technology and manufacturing processes.

**United States:** The automotive sector in the United States has witnessed an increase in the use of glass fiber textiles due to the demand for lightweight, high-performance materials. Automakers such as Ford and GM are gradually incorporating glass fiber textiles into body panels, interior parts, and structural components of vehicles. The introduction of new technologies like automated fiber placement (AFP) further reduces costs and enhances the material's

performance. Environmental policies in the U.S. are also pushing manufacturers toward cleaner technologies, and glass fiber textiles excel in this regard as they are lightweight and easy to recycle. Additionally, changing vehicle regulations regarding fuel efficiency are also driving this transition.

**China:** China has become a major player in the glass fiber textile market, driven by the rapid growth of its automotive industry. The increasing demand for lightweight vehicles, particularly electric vehicles (EVs), due to the implementation of new energy vehicle (NEV) standards, has accelerated the use of glass fiber textiles. For instance, automakers like BYD and NIO have started using glass fiber textiles in battery cases, structural components, and interiors of their vehicles. As a global manufacturing hub, China has seen improvements in production turnaround times, making glass fiber textiles more affordable. Moreover, the government's green vehicle policies are supporting these trends.

**Germany:** Despite being a latecomer to some automotive innovations, Germany remains a leader in composite materials, and glass fiber textiles are no exception. Leading German automakers such as BMW, Mercedes-Benz, and Volkswagen are increasingly incorporating these textiles in vehicle design, focusing on weight reduction and fuel efficiency. Additionally, German carmakers are making substantial investments in the research and development of hybrid and fully electric vehicles, which is driving the popularity of glass fiber textiles for both structural and decorative elements. Emphasis on sustainable development and the ability of glass fiber textiles to meet modern recycling requirements aligns with the European Union's environmental policies.

**India:** Responding to these changes, India's automotive industry is undergoing rapid evolution, with glass fiber textiles becoming a key material in this transformation. The adoption of catalytic materials can be seen in the growing use of glass fibers by companies such as Tata Motors and Mahindra & Mahindra for various car and bike models. This trend is fueled by government policies promoting electric vehicles (EVs) and improving fuel efficiency. Additionally, local suppliers are increasing their production capabilities, lowering costs, and making glass fiber textiles more accessible to a broader range of automotive manufacturers in the country.

**Japan:** Japan's automotive industry is well-known for its focus on manufacturing and engineering excellence. As the production of electric vehicles (EVs) continues to increase, companies like Toyota, Honda, and Nissan are using

more glass fiber textiles, which are valued for their lightweight properties, safety, and durability. Japan's emphasis on contemporary design and technology has further advanced the development of composite materials, including various types of glass fiber. Moreover, Japan's commitment to reducing carbon emissions aligns with the increasing use of sustainable glass fiber textiles in vehicles.

## Features of the Global Glass Fiber Textile in Automotive Market

**Market Size Estimates:** Glass fiber textile in automotive market size estimation in terms of value (\$B).

**Trend and Forecast Analysis:** Market trends (2018 to 2023) and forecast (2024 to 2030) by various segments and regions.

**Segmentation Analysis:** Glass fiber textile in automotive market size by product type, application, and region in terms of value (\$B).

**Regional Analysis:** Glass fiber textile in automotive market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

**Growth Opportunities:** Analysis of growth opportunities in different product type, application, and regions for the glass fiber textile in automotive market.

**Strategic Analysis:** This includes M&A, new product development, and competitive landscape of the glass fiber textile in automotive market.

Analysis of competitive intensity of the industry based on Porter's Five Forces model.

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This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the glass fiber textile in automotive market by product type (woven roving, non-crimp, woven yarn, and CFM/CSM), application (door panel, bulkheads, bodywork, suspension system, engine

compartment, and others), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?

Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

Q.7. What are some of the changing demands of customers in the market?

Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?

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