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Glass Fiber Textile in the Marine Market Report: Trends, Forecast and Competitive Analysis to 2030

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Abstracts

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Glass Fiber Textile in the Marine Trends and Forecast

The future of glass fiber textile in the global marine market looks promising with opportunities for the boat hull, deck, bulkhead, and hatch cover markets. Glass fiber textile in the global marine market is expected to grow with a CAGR of 4.3% from 2024 to 2030. The major drivers for this market are the increasing demand for lightweight materials in the marine industry, 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, boat hulls 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 the Marine Market

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Several emerging trends are being witnessed in the glass fiber textile market, focusing on the marine market, which will benefit the future of this market. These trends are largely driven by technological advances, the need for more sustainable solutions, and the continuous innovation of new composite materials.

Eco-Friendly and Recycled Glass Fibers: Environmentalism has changed the way people think about design in the marine industry. The use of recycled glass fibers has increased, which reduces the carbon footprint of glass fiber reinforced polymer composites in shipbuilding and repairs. Manufacturers are gradually shifting their focus to improving the recyclability of glass fiber textiles and developing a closed-loop paradigm, where products (other than waste) are recycled into new ones.

Lightweight Hybrid Composites: There is an increasing demand for hybrid composites that combine glass fibers and carbon fibers in the marine industry. These composites are made primarily of glass fiber with carbon fiber added to improve performance, for example, in tensile strength and weight. Hybrid materials are extensively used in high-end recreational boats, racing yachts, and military vessels, where performance per unit weight is a critical factor.

Rising Demand for Smart Textiles and Sensors: Smart textiles and sensors are being integrated into glass fiber composites for use in the marine sector. These textiles can incorporate sensors that monitor ship performance, track infrastructure fatigue, or provide real-time information about water conditions. Intelligent textile structures are particularly growing in advanced naval systems, which will enhance fuel efficiency and vessel safety.

Increasing Application of Marine Glass Fiber: In addition to shipbuilding, glass fiber textiles are used in the construction of marine structures such as piers, docks, and coastal defense systems. Marine construction includes the use of GFRC (glass fiber reinforced concrete), which is ideal for marine applications as it does not rust or corrode, even in saltwater conditions. This trend helps minimize repair expenditures, increasing the durability of marine construction and boosting the market for infrastructure development projects in North America, Europe, and Asian coastal regions.

Innovative Manufacturing Methodologies: The revolution in glass fiber textile production for marine applications in the last five years is attributed to the use of advanced manufacturing technologies like 3D weaving and automated

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composite layup systems. These technologies ensure high precision, shorter production cycles, and minimize waste, which improves manufacturing processes.

These trends enhance sustainability, efficiency, and high performance in the use of glass fiber textiles in the marine market. With these developments in new technologies, glass fiber textiles will continue to be essential in advancing marine industries that require strength, durability, and minimal environmental impact.

Recent Developments in the Glass Fiber Textile in the Marine Market

The current dynamics taking place within the glass fiber textile in the marine market can be attributed to the growth in materials science, manufacturing, and application of the market, which indicates the potential growth of the sector as well as innovation.

Improvement of Corrosion-Resistant Composites Based on Glass Fiber Reinforced Plastics: The adoption of high-performance corroded-proof plastic materials based on glass fibers for use in shipbuilding or marine structures has brought the utilization of such materials in the marine industry to a new level. These new composites are less affected by the aggressive nature of saltwater, thus reducing the maintenance factor and prolonging the operation of ships and marine facilities. Such advances have seen the increased use of glass fiber textiles in commercial shipping and leisure boating.

Commercialization of Environment-Friendly Fiberglass Production: Some glass fiber manufacturers are moving towards more environmentally friendly and environmentally responsible production. These include the use of post-consumer glass, the use of energy-efficient production processes, and lowering emissions during manufacturing. Such shifts are largely urged by the growing need for environmental regulations and consumers require attention for greener solutions. It also assists companies to adhere to international environmental regulations and increase their competitiveness in the market.

Integration of 3D Weaving Technology: Over time, the marine industry has made extensive use of 3D weaving technology to manufacture multilayered, lightweight, high-performance glass fiber textiles. This permits the fabrication of composite structures that are not only stronger but lighter hence enhancing the fuel consumption as well as the performance of the marine vessels. This is very

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useful for high-performance boats such as racing yachts where weight needs to be cut down drastically.

Use of Glass Fiber in Hybrid Composite Materials: Hybrid composites with glass fibers and carbon fibers have gained popularity in the marine field due to a rise in demand for hybrid composite materials. Such materials provide better functionality: they are built of glass fibers, which add strength and durability, and carbon fibers, which add light construction. This has brought advancement in the field of luxury yachts, fast racing boats, and other ships of war that require both strength and reduction in weight.

Focus on Smart Textiles and Sensor Integration: Smart sensors are being fused onto glass fiber textiles to assess the health condition of marine vessels. These textiles are capable of detecting damages, such as cracks and other structural failures, and give feedback to the operators in real-time. Such a technology's enhancement in safety and efficiency and decrease in cost of operation is a major factor. They are however expected to find more applications in the future, especially with the developments of smart textiles in the marine sector, stemming particularly from advanced naval vessels and autonomous ships.

These developments are propelling the glass fiber textile market in the marine industry into a more sustainable, efficient, and performance-oriented level. The market thus is prepared for extending growth always on emerging technologies and bettering production methods, mainly in outboard performance and green-oriented marine markets.

Strategic Growth Opportunities for Glass Fiber Textile in the Marine Market

The glass fiber textile market in the marine market has various growth prospects in various application areas. All the key areas of concern should be focused on by the manufacturers to take advantage of the situation in the market regarding emerging trends and growing demand for new solutions.

Recreational Boating and Yachting: With the increasing love for leisure boating and yachting, there is a potential market for glass fiber textiles in the manufacture of lightweight, durable, and high-class boats. As more and more consumers increasingly demand highly effective and ecologically balanced vessels, manufacturers will be able to address this growing demand with

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advanced glass fiber composites that are lighter yet stronger and more efficient.

Commercial Shipping and Vessels: To decrease fuel usage and improve the lifetime of the vessel, commercial shipping companies are using more and more lightweight and strong materials. The marine and shipbuilding industries have great prospects for the use of glass fiber textiles for the construction of hulls, decks, and internal structures of ships particularly with the ever-increasing prices of fuel and tougher emission standards.

Marine Infrastructure Docks, Piers, and Coastal Protection: The construction sector worldwide is slowly adopting glass fiber textiles in marine construction because of their lightweight and corrosion-free nature making them ideal in harsh environments. This includes their use in piers, docks, as well as coastal reinforcement works. Glass fiber composites, are emerging as potential materials that can be utilized in such applications due to a rising need for long-lasting, environmentally friendly construction materials.

Warships and Related Vessels: While researching construction materials for naval vessels such as submarines and aircraft carriers, the military and defense sectors came across the incorporation of glass fiber composite materials for some of the structures because of their weight and their corrosion resistance aspect. The strength of glass fiber composites equips nations with naval forces that are more active, effective, and affordable thus growing the market in this segment.

Autonomous and Smart Marine Vessels: Smart marine technology aspects and states of autonomous vessels provide specific needs to the market for glass fiber textiles with embedded sensors and smart materials. The fabric may also be worn to track weight measure fatigue and damage to the structure of the vessel and control its functionality in the field. This may come to fruition as the maritime nubile utilizes more efficient and advanced boat technologies due to the industry change.

These structural growth strategies also underlie the reasons for the great potential use of glass fiber textiles in the marine market. As the provision of advanced lightweight environment-friendly and high-performance composite materials increases, glass fiber textiles will be prominent in revolutionizing the industry of recreational boats, commercial ships, warfare vessels, and marine facilities.

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Glass Fiber Textile in the Marine Market Driver and Challenges

Many developments, economies, and policies affect the growth of glass fiber textiles in the marine market. According to research, as the world continues to seek lightweight, stronger, and more environmentally friendly materials, the applications of glass fiber textiles have expanded into boat building, repair, and structures in the marine domain. However, the sector is also affected by issues such as affordable production, waste management, and market saturation. These drivers and challenges are intertwined in such a way that when glass fiber textiles are deployed for marine applications, both opportunities and barriers emerge for their development and adoption, which stakeholders must address.

The factors responsible for driving glass fiber textiles in the marine market include:

Technological Advancements in Composite Materials: The ongoing development in composite manufacturing technology, particularly 3D weaving, and automated layup processes, forms the main growth engine for the glass fiber textiles market within the marine sector. These advancements offer higher accuracy, lower production costs, and shorter cycle times. The more advanced production methods make stronger, lighter, and cheaper materials available, which are suitable for high-performance marine vessels such as yachts, racing ships, and military ships.

Growing Need for More Fuel-Efficient Ships through Weight Reduction: As the marine industry increasingly faces pressure related to fuel consumption and emissions, the use of lightweight materials, including glass fiber textiles, has risen. Such materials help reduce the weight of vessels, thereby improving fuel efficiency and reducing operational costs. In commercial shipping, recreational boating, and naval vessels, glass fiber reinforced plastics offer weight reduction without compromising strength and durability.

Sustainability and Environmental Regulations: With increasing concern over environmental sustainability on a global scale, stakeholders in the marine sector are continually seeking materials that have minimal environmental impact. Glass fiber textiles, particularly those made from recyclable glass or green resins, can meet these demands by providing ecologically safe alternatives. Countries with stringent environmental regulations, such as North America and Europe, have a high demand for green materials.

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Durability and Corrosion Resistance in Marine Environments: Glass fiber textiles have become a common material in the marine industry due to their tough, compression-resistant features and corrosion-resistant qualities. Their ability to withstand salt water, UV radiation, and extreme weather conditions makes them ideal for use in exposed structures like boat hulls and decks. The capacity of glass fiber composites to endure wear and tear reduces maintenance costs while improving the longevity of structures and equipment, which contributes to their increased use.

Expansion of Global Athletic and Powered Boat Markets: The increasing popularity of leisure boating and yacht building worldwide, supported by growth in trade, is also favoring the use of glass fiber textiles. The growing trend of operating high-quality, eco-friendly boats by consumers in the leisure industry has driven innovative designs in boat manufacturing. In the commercial segment, shipbuilders are incorporating glass fiber composites, which are both cost-effective and eco-friendly.

Challenges in the glass fiber textile in the marine market include:

High Production Costs: While glass fiber textiles have gained market acceptance and awareness, their production remains a significant challenge. The consumption of glass-fiber composites involves consideration of costs related to specialized equipment, the quality of raw materials, and the need for manufacturers to employ novel fabrication processes.

Limited Consumer Awareness and Education: The benefits of glass fiber textiles are still not widely understood. Many boat owners and marine operators are more familiar with materials such as aluminum or steel, which can hinder the adoption of glass fiber textiles in some markets. Therefore, it is essential to run education and awareness campaigns to explain the benefits of glass fiber textiles.

Supply Chain and Raw Material Constraints: The production of high-quality glass fibers and the raw materials required for such fibers can be affected by global supply chain issues, geographic partitioning, and volatile pricing of raw materials. Any interruptions in the supply of granular materials, such as glass fibers or resins, can lead to production delays and inflationary pressures on

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pricing.

The marine glass fiber textile market is influenced by an interplay of factors. On one hand, there are factors driving growth, such as the development of new technologies, the rising demand for lightweight and fuel-efficient vessels, sustainability pressures, and the need for durable, corrosion-resistant materials. On the other hand, high production costs, low consumer awareness, and supply chain challenges still limit the broader use of glass fiber textiles in the marine industry.

List of Glass Fiber Textile Companies in the Marine Market

Companies in the Marine Market

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 the Marine by Segment

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

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

Woven Roving

Non-Crimp

Woven Yarn

CFM/CSM

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

Boat Hulls

Decks

Bulkheads

Hatch Covers

Others

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

North America

Europe

Asia Pacific

The Rest of the World

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Country Wise Outlook for the Glass Fiber Textile in the Marine Market

Several factors contribute to the health of the glass fiber textile market in the marine sector, primarily the increasing use of composite materials incorporating fiberglass in the construction of new vessels or during repair work. Textiles made from glass fiber offer very high strength and low weight to the hull, decks, and other marine construction components, while being able to withstand water and other extreme weather conditions. Furthermore, improved manufacturing processes, along with the rise of environmentally friendly practices, have led to the growing utilization of glass fiber textiles in the marine industry in markets such as the US, China, Germany, India, and Japan.

United States: According to recent statistics and analysis of the glass fiber textile industry within the marine sector of the United States, it is primarily driven by lightweight, high-performance composites currently used in constructing boats and marine structures. The increase in demand for and manufacturing of recreational and commercial boats, along with the growing development of offshore wind farms, has further boosted the usage of glass fiber textiles. Manufacturers in the USA are also working to increase the recyclability of glass fibers and expand production processes with green technologies.

China: China's expansion of the glass fiber textile industry, particularly in the marine sector, has been rapid due to the flourishing ship construction market and the country's leading position in both commercial and leisure vessels. It is also a region that provides glass fiber fabrics and reinforcements for the manufacture of both smaller and larger vessels, as well as for their repair and maintenance. In recent years, Chinese manufacturers have made significant efforts to enhance the quality of glass fibers by increasing their tenacity and water repellency. Consequently, China has become one of the leading exporters of glass fiber textile products for marine use, primarily to Southeast Asia and Europe.

Germany: Germany is well known for its technological advancement in the marine and offshore sectors, and the glass fiber textile industry is no exception. The German industry is focused on developing lightweight and corrosion-resistant internal glass fiber textiles for yacht and shipbuilding. Considerable attention is also directed towards improving the service life of these textiles, especially in saltwater environments. The growing demand for electric and hybrid ships has further raised the need for special composites that meet the requirements of low weight and high durability for vessels.

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India: There is a growing demand for glass fiber textiles in India's developing marine industry, mainly due to the construction and export of ships. The strategic location of India and the expanding shipbuilding industry are creating a need for waterproof and corrosion-resistant glass fiber textiles. In India, manufacturers are developing and incorporating these textiles into the construction of various marine materials, such as boats and decks.

Japan: Owing to its long history as a pioneer in marine technology development, Japan manufactures glass fiber textiles that are vital to the shipbuilding and ship repair industries. This trend has fueled the demand for advanced composite materials, especially lightweight and high-strength glass fiber textiles, for use in defense and commercial vessels. Japanese manufacturers are targeting the production of products that reduce the environmental impact of the marine industry by utilizing recyclable materials.

Features of Glass Fiber Textile in the Global Marine Market

Market Size Estimates: Glass fiber textile in marine 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 marine market size by product type, application, and region in terms of value ($B).

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

Growth Opportunities: Analysis of growth opportunities for different product types, applications, and regions for glass fiber textile in the marine market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of glass fiber textile in the marine 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 glass fiber textile in the marine market by product type (woven roving, non-crimp, woven yarn, and CFM/CSM), application (boat hulls, decks, bulkheads, hatch covers, 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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