

Glass Fiber Textile in the Construction Market Report: Trends, Forecast and Competitive Analysis to 2031

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Abstracts

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Glass Fiber Textile in the Construction Trends and Forecast

The future of glass fiber textile in the global construction market looks promising with opportunities in the swimming pool, architectural dome, window frame, cooling tower, structural shape, and ladder rail markets. Glass fiber textile in the global construction market is expected to grow with a CAGR of 3.0% from 2025 to 2031. The major drivers for this market are the increasing demand for lightweight and durable construction materials, a growing focus on energy efficiency and sustainability in building practices, and advancements in glass fiber technology that enhance performance and versatility.

Lucintel forecasts that, within the product type category, non-crimp is expected to witness the highest growth over the forecast period.

Within the application category, architectural domes 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 Glass Fiber Textile in the Construction Market

The market for glass fiber textiles in the construction market has various trends that influence the industry's adoption of the fibers. Many of these trends reflect traditional aspirations for performance, efficiency, and environmental care.

Sustainability and Eco-Friendly Building Materials: The construction industry is increasingly focused on incorporating environmental sustainability, with the use of glass fiber textiles capitalizing on the benefits of sustainable building materials. Glass fibers are non-combustible, environmentally friendly, and assist in creating energy-efficient buildings. This trend aligns with the industry's desire to reduce carbon emissions and waste through more efficient recycling technologies, making glass fiber textiles a core material in LEED and other green building certification programs.

Glass Fiber Applications in Reinforced Concrete: Recently, there has been a shift toward using glass fiber reinforced concrete (GFRC) instead of conventional steel reinforcement in many frameless structures. GFRC is lighter in weight, highly corrosion-resistant, and more durable, making it an ideal solution for high-performance construction in severe conditions. This trend is particularly evident in the construction of facades, architectural panels, and bridges.

Incorporation of Glass Fiber Insulation: Glass fiber textiles contribute significantly to insulating structures due to their superior thermal and acoustical properties. For energy savings and cost reduction, glass fiber is commonly used in building envelopes, walls, and roofs. This trend is driven by the increasing demand for energy-efficient buildings, as glass fiber insulation helps regulate the temperature inside the building, reducing the need for heating and cooling.

Integrating Smart Building Solutions: The rise of smart building technology is advancing the use of glass fiber textiles in the construction of sensor systems and other smart infrastructure. Glass fibers are also employed in the design of networks for monitoring internal temperature, humidity, and energy consumption, embedded in building surfaces. This trend is particularly pronounced in high-tech urban development and smart city projects, where construction materials are expected to be lightweight, strong, and embedded with technology.

3D Printing Enhances Advanced Manufacturing Structures: Significant

improvements have been made in the way glass fiber textiles are integrated into building construction, thanks to advanced manufacturing technologies such as 3D printing and automated fabrication. These methods enable the design and manufacture of complex components and structures efficiently, from prefabricated building parts to intricate facades.

These emerging trends highlight the potential of glass fiber textiles, not only in reinforcing buildings and infrastructure but also in propelling the construction market toward more environmentally friendly and energy-efficient practices using advanced techniques. As green building strategies, smart infrastructure, and long-lasting material systems become the norm, the advancement of the construction industry appears to be anchored in glass fiber textiles.

Recent Developments in Glass Fiber Textile in the Construction Market

The recent advancements in trends of glass fiber textile in the construction market have offered considerable improvements both in the performance of the materials and the methods of manufacturing and use. There are five most worth mentioning changes:

Introduction of Glass Fiber-Reinforced Concrete (GFRC): Introduction of Glass Fiber-Reinforced Concrete (GFRC) In recent times, more successful projects have made use of glass fiber-reinforced concrete GFRC due to its reduced-weight, anti-corrosive, and high strength properties. It is popularly adopted in building envelopes, cladding, panels, and hollow core concrete slabs. The expansion of the market for GFRC is attributed to its desirable properties for building and construction in that it not only enhances durability but also allows great creativity in design.

Development of High-Performance Insulation Systems Glass fiber textiles are increasingly being harnessed in high-efficiency insulation thermal systems that seek to optimize energy utilization and lower carbon emissions. These wool insulation systems are also applied in the construction of residential and commercial buildings for thermal and acoustic purposes. Since energy efficiency is one of the main targets of building codes around the world, the use of glass fiber for insulation replaces barriers to providing sustainable construction in innovation.

Green Alternatives for Dry Glass Fiber Textiles: In recent years, the negative

environmental impacts of glass fiber textiles have initiated the introduction of new safe technologies. Among these are the recycling of production waste glass materials artificial stone, as well as the removal of technology-intensive operations in the filament. In the industry, sustainable textile glass fabrics go a long way in helping achieve carbon reduction and waste minimization goals.

3D Glass Fiber Printing: The application of 3D printing technology in the fabrication of glass fiber components is changing the building industry. This process eliminates the extra labor and materials usually wasted in fabrication by enabling the accomplishment of such tasks at the site with more complex and tailor-made components. Glass fiber-based elements for facades and basic structure, easy to use and fast assembled by 3D printing, are actively developed.

Increased Use of Glass Fiber in Seismic and Structural Reinforcement: Glass fiber textiles are used more and more for seismic retrofit and structural reinforcement applications, especially in earthquake-prone countries. In countries such as Japan and those of the U.S., GFRP is being applied to building structures with a view of increasing resistance to natural calamities. The high strength-to-weight ratio of the materials is beneficial in retrofitting the existing structures to ensure that the buildings will endure earthquakes and other storms and disasters.

These developments are making enormous expansion of the range of applications of glass fiber textiles in construction. Material creation and application seem to turn from ordinary building technology that evolves with time to advanced sustainable construction methods such as increasing the durability of concrete or enabling speedy construction.

Strategic Growth Opportunities for Glass Fiber Textile in the Construction Market

Glass fiber textile market in the construction market offers various growth prospects owing to technological changes, the quest for sustainable ways, and changes in construction requirements. The following are five major opportunities that are apparent in this market:

Reinforcement of Concrete and Infrastructural Developments: The use of glass fiber textiles as a strengthening agent for concrete structures is growing rapidly

and is considered a cheaper and eco-friendly alternative to steel. This application is very important in enhancing the strength and service life of structural systems such as buildings and bridges, especially in areas that are prone to extreme weather conditions. There is a significant desire to cut down on corrosion and increase longevity making glass fiber textiles a prime candidate for numerous public works applications seeing it is used only on a limited scale currently.

Energy-Efficient Insulation Solutions: The development of thermal and acoustic insulation systems is incomplete without the use of glass fiber textiles. With changes in lifestyle and population dynamics, the construction of energy-efficient structures continues to increase and therefore glass fiber insulation materials can be incorporated into the walls, roofs, and foundations to improve energy retention. This forms a growing clientele for green construction materials and is a tremendous opportunity for manufacturers looking to diversify their brands in the energy-efficient construction industry.

Role of Smart Building Integration in the Use of Glass Fiber Textiles: There is the possibility of incorporating glass fiber textiles in smart building systems. Glass fibers may be included within elements of construction so that sensors for temperature, humidity, or structural deformation may be installed. This technology is becoming more applicable in mega buildings-states and smart cities making it a chance for manufacturers to position their products towards the wave of smart building.

Precast shapes made of 3D printed glass fibers: The emergence of 3d construction printing presents significant development opportunities for glass fiber textiles. It is feasible for these companies to save time and create lightweight building elements at the place of use. Using glass fibers to manufacture high strength-to-weight ratio complicated parts improves aesthetics and reduces cost, particularly in prefab and modular construction.

Earthquake Resistant Buildings: An increasing number of organizations are focusing on the use of glass fiber textiles in the development of building structures that are capable of withstanding disasters like earthquakes. Glass fiber textiles can therefore be regarded as an active construct that could help reduce or avoid damages on structures as a result of natural calamities. With Japanese construction looking for earthquake-resisting materials, this is where a gap in the construction market sits.

This is due to the increasing emphasis on sustainability, resilience, and efficiency within the construction industry. This necessitates the use of glass fiber textiles in construction projects as this improves the quality, performance, and eco-friendliness of building constructions globally.

Glass Fiber Textile in the Construction Market Driver and Challenges

Glass fiber textile market in construction is impacted by several development, economic, and political factors. These forces shape the growth and adoption of glass fiber textiles as a construction material of choice in modern architecture due to their high strength, durability, and sustainability. Nevertheless, the market still faces certain limitations, including high production costs, emerging materials that compete with glass, standard requirements for material selection, and construction methods.

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

Technological Development in Production Techniques: One of the key determinants for the market is enhanced processes for the production of glass fiber textiles. Automated weaving and advanced polymer coating technologies are other innovations that have contributed to the better quality and performance of glass fiber materials at lower costs. With the improvement of production techniques, glass fiber textiles can be manufactured faster, which is expected to increase their acceptance in various construction applications.

Growing Focus on Energy-Efficient and Sustainable Materials: The heightened awareness and regulation of carbon emissions are promoting the use of green construction materials. Glass fiber reinforcement is gaining acceptance as a 'green building' material since it has a long service life, is recyclable, and has a low environmental footprint during its manufacture. In line with emerging trends in the construction industry towards green building design, such as LEED certification and zero-net-energy building construction, glass fiber textiles can be used in thermal insulation, structural composites, and external facade systems that are lightweight and energy-efficient.

Strength and Durability for Infrastructure Projects: The need for infrastructure development requires the use of materials that are corrosion-resistant and capable of withstanding extreme weather conditions. This is where glass fiber

textile construction comes to the rescue. The increasing need for the repair and maintenance of infrastructure, especially in areas that experience extreme weather, has contributed to the rising use of glass fiber textiles for the reinforcement and protection of public infrastructure.

Rising Demand for Lightweight Materials in Construction: Since the construction process often involves heavy materials that increase the burden on the building's foundations, the construction industry has started adopting lightweight materials that reduce the load on foundations. Glass fiber textiles are suitable for this application as they are lighter than conventional reinforcing materials, such as steel, without sacrificing strength or performance.

Progression of Urbanization and Smart Cities: Urbanization, particularly in developing countries like India and China, is offering growth opportunities in the construction and infrastructure sectors. Glass fiber textiles are gradually making their way into the market, being used in the construction of modern buildings, infrastructure, and smart city ecosystems. It will be these factors, along with the growing need for smart building systems (i.e., IoT), that will further promote the usage and application of glass fiber textiles in modern cities.

Challenges in glass fiber textile market in construction include:

High Production Costs: The relatively high cost of glass fiber textiles, when compared to conventional materials such as steel and other composites, has become a major hindrance to their widespread acceptance. Even if the long-term benefits of glass fiber, such as its corrosion resistance and durability, justify the cost, high initial costs may not be feasible for small construction companies or firms operating with limited budgets.

Competition from Alternative Materials: Glass fiber textiles are competing with other materials, such as carbon fiber composites and steel reinforcement. Carbon fibers are more expensive than glass fibers; however, they are lighter in weight and stronger, making them suitable for high-end applications that prioritize performance over cost-efficiency. Likewise, due to construction economics, steel remains the most widely used reinforcing material for concrete structures in most cases.

Regulatory Barriers and Standards: Construction projects, such as building

construction, are subject to regulations and codes that specify the types of materials that can be used. While glass fibers and glass fabrics are gaining acceptability, standardization within the construction industry is not on par with materials like stainless steel or aluminum.

The glass fiber textile market in construction is experiencing robust growth driven by advancements in technology, increasing demand for sustainable and energy-efficient materials, and the need for stronger, lightweight components in modern infrastructure. However, the market also faces challenges, including high production costs, competition from alternative materials, and regulatory barriers.

List of Glass Fiber Textile Companies in the Construction Industry

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 companies in the construction industry cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the glass fiber textile companies in the construction industry profiled in this report include-

Owens Corning

Jushi Group

Chongqing Polycomp International Corporation

Taishan Fiberglass

Taiwan Glass Group

Nippon Electric Glass

Sichuan Weibo

3B the Fiber Glass Company (Goa Glass Fiber)

Johns Manville Corporation

Nitto Boseki

Glass Fiber Textile in the Construction Market by Segment

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

Glass Fiber Textile in the Construction Market by Product Type [Analysis by Value from 2019 to 2031]:

Woven Roving

Non-Crimp

Woven Yarn

CFM/CSM

Glass Fiber Textile in the Construction Market by Application [Analysis by Value from 2019 to 2031]:

Swimming Pools

Architectural Domes

Window Frames

Cooling Tower

Structural Shapes

Ladder Rails

Others

Glass Fiber Textile in the Construction Market by Region [Analysis by Value from 2019 to 2031]:

North America

Europe

Asia Pacific

The Rest of the World

Country Wise Outlook for Glass Fiber Textile in the Construction Market

The construction market is increasingly adopting glass fiber textiles, which are more durable, practical, and efficient in the reinforcement, insulation, and construction of concrete buildings. The rising demand for high-performance and green building materials is making glass fiber textiles an essential material for addressing challenges related to energy efficiency, structural performance, and environmental protection. Countries like the US, China, Germany, India, and Japan are at the forefront of the development and integration of glass fiber textiles, making them applicable to a wider range of residential, commercial, and infrastructure projects.

United States: Over the years, the usage of glass fiber textiles has gained popularity in the construction industry, particularly concerning concrete strengthening and improving construction materials. In addition, glass fiber is being utilized in the manufacture of precast concrete panels, cement products, and insulation systems. Sustainable and resilient building materials have seen an increase in demand due to the rising need for energy efficiency and environmental standards. Glass fiber composites are also being used in the construction of major infrastructure facilities like roadways and bridges to improve the service life and strength of the structures.

China: The construction industry in China is also embracing the use of glass fiber textiles, fueled by rapid urbanization and infrastructure development. GFRG (Glass Fiber Reinforced Concrete) is gaining acceptance in the construction of skyscrapers, bridges, and other public service facilities. The country's commitment to low-carbon construction is accelerating the adoption of glass fiber textiles, as they are lightweight, strong, and recyclable. Furthermore, the

government is encouraging the construction of buildings using new materials to enhance the quality of buildings, lower costs, and minimize environmental impact.

Germany: Germany has always been a leader in sustainable building and the use of construction materials like glass fiber textiles. These materials are being used within the country for the construction of residential and commercial buildings that emphasize energy efficiency and green building practices. Glass fiber textiles are commonly used in reinforced concrete to improve strength and corrosion resistance. Due to Germany's stringent environmental regulations regarding construction projects, significant efforts have been made in the research and development of glass fiber textile technologies.

India: In India's construction sector, the threat of rapid urban growth and infrastructural development is prompting all industry players to contemplate the use of glass fiber textiles. These textiles are being incorporated into concrete structures such as buildings, roads, and bridges, increasing their compressive strength and durability. Economically and creatively, the use of glass fiber textiles for construction is likely to increase, with more emphasis on the expansion of the residential and commercial sectors.

Japan: Japan has been incorporating glass fiber construction fabrics in its projects for several years, mainly to improve the properties of concrete and infrastructure. Since the incorporation of glass fiber textiles does not significantly increase the weight of concrete, these materials are being used in earthquake-prone areas as load-bearing members or bases. In addition to high-rise buildings, glass fiber textiles are also being applied in houses and offices. Japan is also making efforts to build disaster-resistant infrastructure and has been innovative in the use of glass fibers for seismic reinforcement and retrofitting.

Features of Glass Fiber Textile in the Global Construction Market

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

Trend and Forecast Analysis: Market trends (2019 to 2024) and forecast (2025 to 2031) by various segments and regions.

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

Regional Analysis: Glass fiber textile in the construction 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 the construction market.

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

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

If you are looking to expand your business in this or adjacent markets, then contact us. We have done hundreds of strategic consulting projects in market entry, opportunity screening, due diligence, supply chain analysis, M & A, and more.

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 construction market by product type (woven roving, non-crimp, woven yarn, and cfm/csm), application (swimming pools, architectural domes, window frames, cooling tower, structural shapes, ladder rails, 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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- 7.8: 3B the Fiber Glass Company (Goa Glass Fiber)
- 7.9: Johns Manville Corporation
- 7.10: Nitto Boseki

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