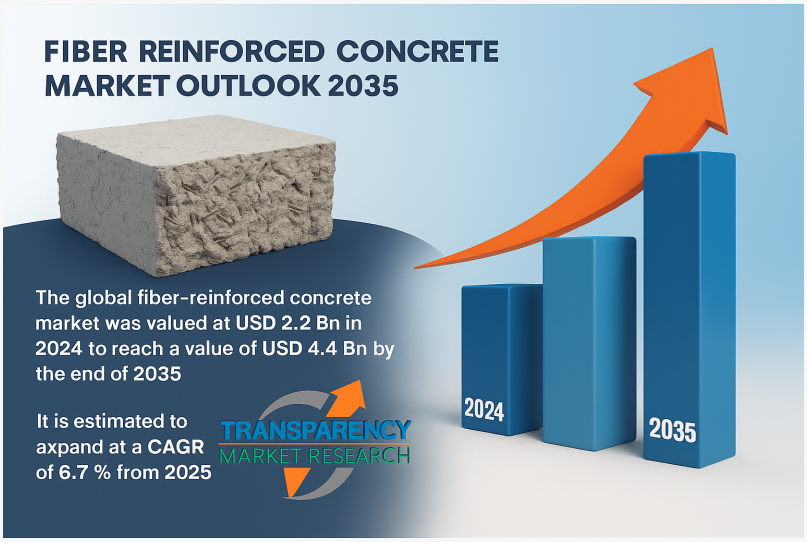
Global Fiber Reinforced Concrete Industry to Reach USD 4.4 Billion by 2035 | TMR

Its use is increasing in urbanization and large infrastructural projects because of its long-term cost savings and better performance than traditional concrete.



Fiber Reinforced Concrete Market

WILMINGTON, DE, UNITED STATES, October 10, 2025 /EINPresswire.com/ -- The global fiber-reinforced concrete market, valued at USD 2.2 billion in 2024, is projected to reach USD 4.4 billion by 2035, expanding at a CAGR of 6.7% from 2025 to 2035. Growth is driven by increasing infrastructure development, rising demand for durable and crack-resistant construction materials, and the growing adoption of advanced concrete solutions in commercial, industrial, and residential projects worldwide.

The fiber reinforced concrete (FRC) market is growing on a substantial rate driven by urbanization, infrastructure expansion and focusing on sustainable and durable building materials. Conventionally concrete with FRC fibers (steel, polypropylene, glass, or carbon) added to increase tensile strength, cracking, and durability for load-bearing, which is applicable to bridges, pavements, tunnels, tall buildings, and industrial slabs.

> “Fiber Reinforced Concrete Market Set to Expand at 6.7% CAGR Through 2035”
>
> *Transparency Market Research Inc.*

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Fiber reinforced concrete (FRC) is a new type of concrete that modifies concrete mixture as a site material with the addition of fibers (steel, glass, polypropylene, or carbon). These fibers improve tensile strength, increased ductility, and enhanced crack resistance, which, for overall structural integrity, produces a more durable product as compared to standard concrete mixtures. It also increases the durability of the existing concrete as it will reduce structural cracking and overall

toughness will be increased.

Market Segmentation

The FRC market can be segmented based on various parameters, providing a detailed view of its application and composition landscape:

Segmentation Parameter

Key Segments

By Fiber Type

Steel Fiber, Glass Fiber, Synthetic Fiber (Polypropylene, Nylon, Polyester), Natural Fiber, Basalt Fiber.

By Application

Precast Concrete Products, Foundation & Flooring (Slabs, Screeds), Cladding & Moldings, Plaster, Dams & Bridges, Mining and Tunnel, Roadways, Highways & Runways, Marine Structures.

By End-use/Industry Vertical

Infrastructure, Residential, Commercial, Industrial, Repair & Rehabilitation, New Construction.

By Application Method/Composite

Premix, Sprayed (Shotcrete), Cast In Situ, Precast, Hybrids, Self-Compacting.

Export to Sheets

Key Segment Insights:

Fiber Type: Steel Fiber is anticipated to hold a dominant share, owing to its superior mechanical strength, crack resistance, and established use in high-stress environments like industrial flooring and infrastructure. Synthetic fibers (e.g., polypropylene) and Glass Fiber are also showing significant growth due to their lightweight, corrosion resistance, and growing adoption in non-structural and precast applications.

End-use/Industry Vertical: The Infrastructure segment is expected to remain the largest and fastest-growing application segment, driven by global investments in roads, bridges, tunnels, and heavy civil structures, which require the enhanced durability FRC provides. The Residential segment is also projected to be a fast-growing area, fueled by urbanization and the demand for

durable, crack-resistant residential construction.

Regional Analysis

The global FRC market's growth is distinct across different geographies:

Asia-Pacific (APAC): Projected to be the fastest-growing region globally. Rapid urbanization, massive government investment in infrastructure (e.g., China's high-speed rail, India's infrastructure initiatives), and a boom in residential and commercial construction in countries like China and India are the primary drivers.

North America: Expected to hold a significant market share, supported by major infrastructure projects, the presence of key industry players, and a strong emphasis on seismic resilience and life-cycle cost benefits in construction.

Europe: Driven by stringent environmental regulations promoting sustainable and low-carbon construction, and continuous investment in modernizing existing infrastructure.

Market Drivers and Challenges

Market Drivers:

Surging Infrastructure Development and Urbanization: Massive global investment in new infrastructure (roads, bridges, tunnels, airports) and the expansion of smart cities drive the demand for high-performance, durable, and long-lasting materials like FRC.

Increased Focus on Sustainability and Durability: FRC aligns with global green building trends by offering enhanced asset lifespan, reduced maintenance, and the potential to reduce the total material volume and carbon footprint compared to conventional concrete with traditional reinforcement.

Superior Performance Characteristics: FRC offers superior properties such as enhanced tensile strength, impact resistance, fatigue resistance, and crack control, making it ideal for demanding environments and large-scale structures.

Technological Advancements: Continuous innovation in fiber chemistry (e.g., high-performance polyolefin and basalt fibers) and advancements in mixing and application methods are expanding the material's application range and cost-efficiency.

Market Challenges:

Higher Initial Cost: The upfront cost of FRC can be higher than conventional concrete, which may pose a restraint, especially for low-budget projects that prioritize immediate cost savings over

long-term benefits.

Lack of Awareness and Standardization: Limited awareness among some construction professionals regarding the full benefits and specific application techniques of FRC, coupled with evolving but not fully uniform design codes in certain regions, can slow adoption.

Volatile Raw Material Prices: Fluctuations in the prices of raw materials, such as steel scrap for steel fibers or polymers for synthetic fibers, can impact the final cost of FRC and its market competitiveness.

Market Trends

Growing Adoption of Sustainable and Recycled Fibers: There is an increasing trend toward using natural, recycled, or bio-based fibers to meet stringent environmental regulations and net-zero targets.

Hybrid Fiber Solutions: The use of hybrid mixes (combining two or more fiber types, e.g., steel and macro-synthetic) to tailor concrete properties for specific applications, providing an optimal balance of structural performance and cost.

Integration with Advanced Construction Technologies: FRC is gaining traction in cutting-edge fields like 3D-printed concrete and precast/modular construction, where its enhanced strength and consistent quality are highly valued.

Performance-Based Specifications: Construction codes and standards are shifting from prescriptive rebar ratios to performance-based specifications (e.g., residual flexural strength), which favors the use of fibers for crack control and structural integrity.

Future Outlook

The outlook for the Fiber Reinforced Concrete market is strongly positive. Driven by non-stop global urbanization and the critical need for resilient, long-lasting, and low-maintenance infrastructure, FRC is set to become a construction material of choice. The industry will likely see further specialization in fiber types and hybrid blends, coupled with streamlined installation processes and increased integration into digital construction models. By 2035, FRC will be instrumental in developing climate-resilient and sustainable public assets worldwide.

Key Market Study Points

Market Leadership: Steel fiber and the Infrastructure end-use segment are expected to dominate

the market share.

Growth Engine: The Asia-Pacific region will be the primary catalyst for market volume and growth rate.

Sustainability Mandate: The market's long-term trajectory is heavily linked to meeting global sustainability goals and regulatory mandates for durable, eco-friendly building materials.

Cost vs. Value: Overcoming the initial cost perception by highlighting the life-cycle cost benefits (reduced maintenance and increased lifespan) is crucial for wider market penetration.

Competitive Landscape

The global FRC market is competitive, featuring a mix of large multinational chemical and construction material producers and specialized fiber manufacturers. Key players are focused on product innovation, expanding production capacity, and strategic partnerships to meet the growing demand. Competition centers on developing high-performance, cost-effective, and environmentally compliant fiber solutions.

Recent Developments

Sustainable Material Innovations: Developments in creating high-performance basalt fibers and increasing the use of recycled steel fibers and synthetic fibers derived from waste materials.

Product Patenting: Companies have been granted patents for revolutionary products, such as new Fiber Reinforced Cement Compositions that offer enhanced bonding, crack resistance, and durability, signaling continued investment in R&D.

Joint Ventures and Collaborations: Partnerships between resin developers and rebar manufacturers to produce innovative, non-corrosive composite rebar alternatives (e.g., fiberglass bars using thermoplastic resin) for specialized applications.

Focus on Digital and Automation: Integration of technology, such as in-line fiber feeders in batching plants and computational modeling, to ensure accurate dosing and consistent fiber distribution in large-scale projects.

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