

Carbon Fiber Construction Repair Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Carbon Fiber Construction Repair Market, with a valuation of USD 102.8 million in 2024, is projected to expand at a robust CAGR of 10.5% from 2025 to 2034. The increasing need for repairs and upgrades to aging infrastructure is driving this growth. Roads, bridges, and buildings are deteriorating over time due to constant wear and tear, weather conditions, and heavy usage. In response, governments and private entities are prioritizing advanced and efficient repair solutions, with carbon fiber emerging as the ideal material. Unlike traditional materials such as steel, carbon fiber offers a lightweight yet incredibly strong alternative, making repairs quicker and more efficient without adding substantial weight to structures. This shift towards using carbon fiber in repairs is revolutionizing the construction industry, offering longer-lasting solutions that minimize the need for frequent maintenance.

The market is primarily segmented by raw materials, comprising primary materials and auxiliary materials. In 2024, primary materials generated USD 78.4 million, which is the largest revenue segment. Carbon fiber composites, known for their exceptional strength-to-weight ratio and durability, are the backbone of the carbon fiber construction repair market. Their high-performance properties make them ideal for reinforcing and repairing critical infrastructure. Alongside carbon fiber, auxiliary materials, including adhesives and resins, are essential for ensuring a secure bond between the carbon fiber and existing structures, enhancing the longevity and stability of repairs. These auxiliary materials help optimize the overall repair process, ensuring that the infrastructure remains in good condition for extended periods.

The market is further segmented by product types, which include rebar, fabric, plate, and other categories. Rebar dominated the market in 2024, capturing 44.4% of the total



share. Rebar, which is typically made of steel or wire mesh, is essential for reinforcing concrete and masonry structures, ensuring their stability and strength. The global demand for rebar is on the rise due to ongoing infrastructure development, urbanization, and an increasing focus on construction projects. The use of carbon fiber rebar, in particular, is gaining traction as it provides enhanced strength and durability while offering the added benefit of being lightweight.

The U.S. carbon fiber construction repair market contributed USD 23.2 million in 2024 and is expected to continue growing rapidly over the next decade. This growth is driven by a rising focus on sustainable construction practices, eco-friendly materials, and green building initiatives. Additionally, the U.S. government's emphasis on modernizing aging infrastructure and promoting energy-efficient solutions further boosts the adoption of carbon fiber-based repair techniques. As the construction industry seeks more innovative and long-lasting repair materials, carbon fiber's role in infrastructure maintenance is expected to become even more significant in the years ahead.



Contents

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Market scope & definition
- 1.2 Base estimates & calculations
- 1.3 Forecast calculation
- 1.4 Data sources
 - 1.4.1 Primary
 - 1.4.2 Secondary
 - 1.4.2.1 Paid sources
 - 1.4.2.2 Public sources

CHAPTER 2 EXECUTIVE SUMMARY

2.1 Industry synopsis, 2021-2034

CHAPTER 3 INDUSTRY INSIGHTS

- 3.1 Industry ecosystem analysis
 - 3.1.1 Factor affecting the value chain
 - 3.1.2 Profit margin analysis
 - 3.1.3 Disruptions
 - 3.1.4 Future outlook
 - 3.1.5 Manufacturers
 - 3.1.6 Distributors
- 3.2 Supplier landscape
- 3.3 Profit margin analysis
- 3.4 Key news & initiatives
- 3.5 Regulatory landscape
- 3.6 Impact forces
 - 3.6.1 Growth drivers
 - 3.6.1.1 Increasing demand for repair and rehabilitation
 - 3.6.1.2 Environmentally friendly and durable solution
 - 3.6.1.3 Growing consumer awareness
 - 3.6.2 Industry pitfalls & challenges
 - 3.6.2.1 High initial investment cost
- 3.7 Growth potential analysis
- 3.8 Porter's analysis



3.9 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

- 4.1 Introduction
- 4.2 Company market share analysis
- 4.3 Competitive positioning matrix
- 4.4 Strategic outlook matrix

CHAPTER 5 MARKET SIZE AND FORECAST, BY RAW MATERIAL, 2021-2034 (USD MILLION, KILO TONS)

- 5.1 Key trends
- 5.2 Primary materials
- 5.3 Auxiliary materials

CHAPTER 6 MARKET SIZE AND FORECAST, BY PRODUCT TYPE, 2021-2034 (USD MILLION, KILO TONS)

- 6.1 Key trends
- 6.2 Rebar
- 6.3 Fabric
- 6.4 Plate
- 6.5 Others

CHAPTER 7 MARKET SIZE AND FORECAST, BY APPLICATION, 2021-2034 (USD MILLION, KILO TONS)

- 7.1 Key trends
- 7.2 Residential buildings
- 7.3 Commercial buildings
- 7.4 Infrastructure
- 7.5 Industrial

CHAPTER 8 MARKET SIZE AND FORECAST, BY REGION, 2021-2034 (USD MILLION, KILO TONS)

- 8.1 Key trends
- 8.2 North America



- 8.2.1 U.S.
- 8.2.2 Canada
- 8.3 Europe
 - 8.3.1 UK
 - 8.3.2 Germany
 - 8.3.3 France
 - 8.3.4 Italy
 - 8.3.5 Spain
 - 8.3.6 Russia
- 8.4 Asia Pacific
 - 8.4.1 China
 - 8.4.2 India
 - 8.4.3 Japan
 - 8.4.4 South Korea
 - 8.4.5 Australia
- 8.5 Latin America
 - 8.5.1 Brazil
 - 8.5.2 Mexico
- 8.6 MEA
 - 8.6.1 South Africa
 - 8.6.2 Saudi Arabia
 - 8.6.3 UAE

CHAPTER 9 COMPANY PROFILES

- 9.1 Aksa
- 9.2 Carbon Light
- 9.3 Fosroc
- 9.4 Horse Construction
- 9.5 Mapei
- 9.6 Master Builders Solutions
- 9.7 Mitsubishi Chemical Corporation
- 9.8 Rhino Carbon Fiber
- 9.9 Sika
- 9.10 Sireg Geotech
- 9.11 Toray Industries



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