

Fiber-Reinforced Plastic Composites Market in the US

Industry Study with Forecasts for 2020 & 2025

Study #3485 | January 2017 | \$5100



While growth will not match the robust gains seen in the 2010-2015 period, construction markets will support demand for fiber reinforced plastic composites as construction activity continues to advance at a solid pace. Demand in the motor vehicle market is also forecast to grow at a healthy rate, as composite materials increasingly penetrate automotive applications. Overall, FRP composites will continue to gain market share from traditional materials like aluminum and steel.

Glass fiber is by far the leading fiber material used in the composites industry because of its low cost, high strength-to-weight ratio, chemical resistance, and good processability. However, much faster gains are expected from smaller volume fibers such as carbon fiber and aramid.

Thermoset polyester, or unsaturated polyester, is the leading resin material used in the composites industry. Most demand for the material comes from the large construction market. Epoxy-based composites have risen in prominence in recent years and will continue to find use in aerospace and wind energy applications. Demand for vinyl esters will be boosted by their use in wind turbine blades.

Construction & motor vehicle markets to see strongest growth

Construction and motor vehicles represent the leading outlets for FRP composites and will provide the best opportunities for growth, spurred by continued strength in construction activity and increased usage of composites in motor vehicles. Combined, these two markets are

expected to account for more than 70 percent of the new demand for FRP composites through 2020. Gains in the construction sector will benefit from continued advances in new housing construction activity, which will generate demand for a variety of products, including fiberglass bathroom components, windows, and entry doors.

Wind energy, aerospace markets to offer fastest growth prospects

The smaller volume markets of wind energy and aerospace will show the fastest growth through 2020. In the aerospace market, carbon fiber composites are now commonly used across a variety of commercial aircraft. Production tax credits extended to wind energy producers through the end of the decade will support demand for installation of wind turbines.

Study coverage

This Freedonia industry study analyzes the \$21.1 billion US fiber-reinforced plastic composites market. It presents historical demand data (2005, 2010, 2015) plus forecasts (2020, 2025) by fiber (glass, carbon and other), product (thermoset polyester, epoxy, vinyl ester, other thermosets, thermoplastic polyester, polypropylene, nylon, styrenics, polycarbonate, other thermoplastics), and by market (construction, motor vehicles, electrical and electronic, consumer durables, marine, wind energy, aerospace and aircraft, other). The study also analyzes company market share and provides competitive analysis on US industry participants including AGY, AOC, Hexcel, Hexion, Owens Corning, PPG, Reichhold, Solvay, Strongwell, and Toray.

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Thermoplastic Composites

Demand for thermoplastic composites is expected to grow at a CAGR of 7.1 percent per year through 2020 to driven by these materials competitiveness. However, due to lack of familiarity with thermoplastics as relatively high resin cost, polypropylene representing three-quarters of demand. Thermoplastics and polycarbonate account for over six percent of demand. They are used in a diverse range of applications, and will continue to benefit from cost and performance advantages over wood, metal, and other resins.

SAMPLE TEXT

Table 5-1 | Fiber-Reinforced Plastic Composites Demand by Market (million pounds)

Item	2005	2010	2015	2020	2025
Gross Domestic Product (bil 2009\$)					
lbs FRP composites/mil \$ GDP					
FRP Composites Demand					
Construction					
Motor Vehicles					
Electrical & Electronic					
Consumer Durables					
Marine					
Wind Energy					
Aerospace & Aircraft					
Other					

Source: The Freedonia Group

Thermoset resins, thermoplastics can be melted and re-shaped multiple times without degradation of the material. Because of this, they do not necessitate the chemical reaction of a long curing process and can be melted and molded into the desired shape, only requiring heat to heat up, flow, and cool down. This shorter processing time provides a tremendous benefit for mass-produced components such as motor parts, where traditional composite processing techniques would be time-consuming and labor-intensive. Conversely, however, many established composite processing methods are more difficult or less suitable due to the high viscosity of thermoplastic resin melts, which can lead to inadequate fiber wetting, misaligned fibers, or resin-rich and void areas. Thermoplastic composites must also be processed at higher temperatures, whereas thermosets can often be cured at moderate temperatures.

Thermoplastic composites have numerous advantages over thermosets. Thermoplastic prepreps can be stored in ambient conditions for an extended period of time.

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This study can help you:

- Determine your market & sales potential
- Learn more about industry competitors
- Assess new products & technologies
- Identify firms to merge with or acquire
- Complement your research & planning
- Gather data for presentations
- Confirm your own internal data
- Make better business decisions

Table 4-4 | Vinyl Ester Composites Demand by Market (million pounds)

Item	2005	2010	2015	2020	2025
Thermoset Composites Demand					
% vinyl ester					
Vinyl Ester Composites Demand					
Marine					
Construction					
Wind Energy					
Other					
\$/lb					
Vinyl Ester Composites Demand (mil \$)					

Source: The Freedonia Group

Related Studies

High Performance Composites

Demand in the US for high performance composites (polymer materials reinforced with advanced fibers) is forecast to rise 5.3 percent per year to \$10.0 billion in 2020. Demand from aerospace applications will rise at a modest pace, but remain the leading market. Carbon fiber composites will remain the largest fiber type, with 85 percent of the market in 2020. This study analyzes the \$7.7 billion US market for high performance composites, with forecasts for 2020 and 2025 by fiber, market and resin. The study also assesses industry structure and evaluates market share.

#3438.....August 2016..... \$4900

Wood-Plastic Composite & Plastic Lumber

US demand for wood-plastic composite (WPC) and plastic lumber is forecast to rise 6.9 percent yearly to \$5.9 billion in 2020. Continuing growth in residential construction expenditures will spur advances. WPC and plastic lumber have taken market share from wood lumber in molding and trim and decking due to their favorable aesthetic and performance properties. The study presents historical demand data plus projections (2020 and 2025) by material, application, market and region of the US. This study also details company market share and profiles industry players.

#3414..... May 2016..... \$5500

Custom Thermoplastic Compounding

US demand for custom compounded thermoplastics will rise 3.2 percent annually to 10.6 billion pounds in 2019, valued at nearly \$19 billion. The construction market will grow the fastest, nearly twice the pace of the next fastest growing market, wire and cable. Compounded thermoplastic PVC will continue to offer the best growth opportunities. This study analyzes the 9.1 billion pound US custom compounded thermoplastic industry, with forecasts for 2019 and 2024 by resin and market. The study also evaluates company market share and profiles industry players.

#3336..... October 2015..... \$5300

Engineering Plastics

US demand for engineering plastics is expected to rise 2.6 percent yearly to 5.1 billion pounds in 2019. Nylon, ABS, and polycarbonate will remain the three largest engineering plastics by volume, with nylon the fastest growing of the three. Smaller-volume engineering plastics such as polyphenylene sulfide, sulfone polymers, and fluoropolymers will grow the fastest. This study details the 4.5 billion pound US engineering plastic industry, with forecasts for 2019 and 2024 by resin and market. The study also evaluates company market share and profiles industry players.

#3242.....April 2015..... \$5300

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Freedonia's methods

- Establishing consistent economic & market forecasts
- Using input/output ratios, flow charts & other economic methods to quantify data
- Employing in-house analysts who meet stringent quality standards
- Interviewing key industry participants, experts & end users
- Researching a proprietary database that includes trade publications, government reports & corporate literature

About The Freedonia Group

The Freedonia Group is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States and other world markets. Industries analyzed by Freedonia include:

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