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# Aircraft Composite Materials Market Forecasts to 2032 – Global Analysis By Material Type (Carbon Fiber Reinforced Polymers (CFRP), Metal Matrix Composites (MMC) and Other Material Types), Aircraft Type, Process Type, Application, End User and By Geography

https://marketpublishers.com/r/A4762F0709ACEN.html
Date: October 2025
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: A4762F0709ACEN

## Abstracts

According to Stratistics MRC, the Global Aircraft Composite Materials Market is accounted for $33.16 billion in 2025 and is expected to reach $77.06 billion by 2032 growing at a CAGR of 12.8% during the forecast period. Aircraft composite materials are advanced engineered substances made by combining two or more distinct materials to achieve superior strength, durability, and lightweight properties. Commonly used composites in aviation include carbon fiber-reinforced polymers, fiberglass, and aramid fibers, which are bonded with resin matrices. These materials offer high strength-to-weight ratios, corrosion resistance, and design flexibility, making them ideal for aircraft structures such as fuselages, wings, and interiors. Their application enhances fuel efficiency, reduces maintenance costs, and supports innovative aerodynamic designs. As aerospace technology evolves, composite materials continue to play a critical role in improving aircraft performance and sustainability across commercial and military sectors.

**Market Dynamics:**

Driver:

Weight Reduction & Fuel Efficiency

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Weight reduction and fuel efficiency are pivotal drivers propelling the market. Composites like carbon fiber-reinforced polymers offer exceptional strength-to-weight ratios, enabling lighter aircraft designs that consume less fuel and emit fewer greenhouse gases. Airlines benefit from lower operational costs and extended range, while manufacturers meet stringent environmental regulations. This dual advantage accelerates the adoption of composites across commercial and defense aviation. As sustainability and performance become top priorities, the demand for lightweight, fuel-efficient materials continues to surge, reinforcing market growth.

Restraint:

High Production Costs

High production costs significantly hinder the growth of the aircraft composite materials market. Manufacturing composites involves expensive raw materials, specialized equipment, and labor-intensive processes, making them costlier than traditional metals. These high upfront costs deter smaller manufacturers and airlines from adopting composites widely. Additionally, the economic burden of scaling production and integrating advanced technologies slows market penetration, especially in price-sensitive regions, limiting broader industry adoption despite performance benefits.

Opportunity:

Growing Demand for Commercial Aircraft

The growing demand for commercial aircraft is a major catalyst for the aircraft composite materials market. As global air travel expands, airlines seek fuel-efficient, lightweight planes to reduce operational costs and meet sustainability goals. Composite materials offer superior strength-to-weight ratios, corrosion resistance, and design flexibility, making them ideal for modern aircraft construction. Increased fleet modernization, emerging low-cost carriers, and rising passenger traffic are accelerating composite adoption. This surge in commercial aviation directly boosts the need for advanced materials, driving robust market growth.

Threat:

Complex Repair & Maintenance

Complex repair and maintenance requirements pose a significant challenge to the

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market. Unlike traditional metals, composites demand specialized tools, techniques, and trained personnel for inspection and restoration, increasing downtime and operational costs. Limited standardization and difficulty in detecting internal damage further hinder widespread adoption. These complexities discourage smaller operators and maintenance facilities from embracing composite technologies, slowing market growth despite their performance advantages.

**Covid-19 Impact:**

The COVID-19 pandemic had a disruptive impact on the aircraft composite materials market, primarily due to halted aircraft production, reduced air travel, and supply chain interruptions. Lockdowns and travel restrictions led to order cancellations and delayed deliveries, affecting demand for new aircraft and related materials. Additionally, workforce shortages and logistical challenges slowed manufacturing processes. Although recovery has begun, the pandemic exposed vulnerabilities in global aerospace supply chains and demand cycles.

The filament winding segment is expected to be the largest during the forecast period

The filament winding segment is expected to account for the largest market share during the forecast period, due to its efficiency in producing high-strength, lightweight components. This technique allows precise fiber placement and minimal material waste, making it ideal for manufacturing cylindrical and pressure-resistant structures such as fuselages and fuel tanks. Its scalability and cost-effectiveness in producing large composite parts contribute to its widespread adoption across commercial and military aircraft applications, reinforcing its position as the leading segment.

The military aircraft segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the military aircraft segment is predicted to witness the highest growth rate, due to increased defense spending and modernization initiatives worldwide. Nations are investing in advanced fighter jets, drones, and surveillance aircraft that demand lightweight, durable, and stealth-compatible materials. Composite materials offer superior performance under extreme conditions, reduced radar signature, and enhanced fuel efficiency—key attributes for next-generation military platforms. This surge in demand for high-performance aircraft is propelling rapid growth in composite material.

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**Region with largest share:**

During the forecast period, the Asia Pacific region is expected to hold the largest market share, due to robust growth in commercial aviation and expanding aerospace manufacturing hubs in countries like China, India, and Japan. Rising air passenger traffic, fleet expansion by regional airlines, and government initiatives to boost indigenous aircraft production are driving demand for advanced materials. Additionally, strategic partnerships and investments in aerospace R&D are strengthening the region's dominance in composite material adoption.

**Region with highest CAGR:**

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to strong presence of leading aerospace manufacturers and defense contractors. The region's focus on technological innovation, sustainability, and lightweight aircraft design is accelerating composite integration. Increased procurement of advanced military aircraft, coupled with upgrades to commercial fleets by major airlines, is further boosting market growth. Favorable regulatory frameworks and a mature supply chain ecosystem also contribute to North America's rapid expansion in this sector.

**Key players in the market**

Some of the key players in Aircraft Composite Materials Market include Toray Industries, Inc., Hexcel Corporation, Teijin Limited, Mitsubishi Chemical Group Corporation, Solvay S.A., SGL Carbon SE, Gurit Holding AG, Owens Corning, DuPont de Nemours, Inc., Cytec Industries, Renegade Materials Corporation, Park Aerospace Corp., TPI Composites, Inc., Royal Ten Cate and SABIC.

**Key Developments:**

In August 2025, Mitsubishi Chemical Corporation has entered into a coordination and cooperation agreement with Mie Prefecture and Yokkaichi City to maintain and develop the Yokkaichi Industrial Complex. This collaboration aims to transform the complex into a carbon-neutral hub by 2050, focusing on hydrogen and ammonia supply, sustainable aviation fuel production from waste cooking oil, and advancing next-generation hydrogen mobility technologies.

In August 2025, NextSource Materials has entered into a multi-year binding offtake

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agreement with Mitsubishi Chemical Corporation to supply approximately 9,000 tonnes per annum of SuperFlake® graphite anode material for North American electric vehicle batteries. This strategic partnership aims to establish a vertically integrated supply chain, leveraging high-quality graphite from NextSource's Molo mine in Madagascar and processing it at Mitsubishi's facility in Japan.

Material Types Covered:

- Carbon Fiber Reinforced Polymers (CFRP)
- Metal Matrix Composites (MMC)
- Glass Fiber Reinforced Polymers (GFRP)
- Aramid Fiber Composites
- Other Material Types

Aircraft Types Covered:

- Commercial Aircraft
- Regional Aircraft
- Military Aircraft
- Helicopters
- Business Jets

Process Types Covered:

- Hand Lay-up
- Filament Winding
- Resin Transfer Molding (RTM)

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Automated Fiber Placement (AFP)

Other Process Types

Applications Covered:

Fuselage

Engine Components

Wings

Interior Components

Tail Section

Other Applications

End Users Covered:

OEMs (Original Equipment Manufacturers)

MROs (Maintenance, Repair, and Overhaul)

Regions Covered:

North America

US

Canada

Mexico

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- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

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Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

**What our report offers:**
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

**Free Customization Offerings:**

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as

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per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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