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Aerospace Composite Materials Market Forecasts to 2034 – Global Analysis By Fiber Type (Carbon Fiber Composites, Glass Fiber Composites, Aramid Fiber Composites, Ceramic Fiber Composites, and Hybrid Fiber Composites), Resin Type, Manufacturing Process, Aircraft Type, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Aerospace Composite Materials Market is accounted for $28.4 billion in 2026 and is expected to reach $58.7 billion by 2034, growing at a CAGR of 9.5% during the forecast period. Aerospace composite materials are advanced engineered substances made by combining two or more constituent materials with distinct physical or chemical properties to produce a material with superior performance characteristics. These materials, including carbon fiber, glass fiber, and aramid fiber composites, offer exceptional strength-to-weight ratios, corrosion resistance, and fatigue performance.

Market Dynamics:

Driver:

Surging demand for next-generation fuel-efficient commercial aircraft

Commercial aviation is undergoing a structural shift toward lighter, more aerodynamically efficient airframes to meet increasingly strict environmental targets and passenger growth projections. Airlines worldwide are placing record orders for wide-body and narrow-body jets that incorporate composites at 50% or more by weight.

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Aircraft manufacturers are responding by ramping production rates and investing in automated composite fabrication facilities. This heightened production environment directly translates into sustained procurement of carbon fiber, epoxy resin systems, and pre-preg materials, creating a robust and expanding demand base that underpins strong composite market expansion throughout the forecast horizon.

Restraint:

High material and processing costs limiting adoption

Despite performance advantages, aerospace-grade composite materials carry significantly higher unit costs compared with traditional aluminum alloys and titanium. The capital-intensive nature of autoclave curing, specialized tooling, and stringent quality inspection requirements adds substantial expense to fabrication. Smaller regional aircraft manufacturers, helicopter producers, and general aviation companies often find it economically challenging to transition their platforms to composite-intensive designs. Additionally, composite repair procedures are more complex and costly than metal repairs, increasing lifecycle ownership costs. These financial barriers continue to moderate the pace of composite adoption, particularly in cost-sensitive market segments where weight savings cannot fully offset material premiums.

Opportunity:

Growing urban air mobility and advanced air mobility platforms

The emergence of electric vertical take-off and landing aircraft and advanced air mobility platforms represents a compelling new demand frontier for lightweight composite materials. Urban air mobility vehicles require extreme structural efficiency to maximize payload and battery range within tight weight budgets. Composite materials are uniquely positioned to address this challenge, with carbon fiber structures offering the highest specific strength available. Platform developers are designing airframes from the outset around composite construction, and as certification activity accelerates and serial production begins, composite material suppliers stand to benefit from a substantial incremental revenue stream that diversifies demand beyond traditional commercial and military aviation segments.

Threat:

Recycling and end-of-life disposal challenges for composite structures

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Carbon fiber reinforced polymer composites present significant environmental and regulatory challenges at end of life. Unlike metals, composites cannot be easily melted down and remelted; current recycling technologies such as pyrolysis and solvolysis recover fiber with reduced mechanical properties and at high cost. Growing regulatory pressure in Europe and North America around sustainable aviation and circular economy principles is pushing governments toward mandatory recycling requirements. If cost-effective recycling solutions are not demonstrated at industrial scale, composite-intensive aircraft programs may face increased scrutiny and potential regulatory obstacles, introducing strategic risk for both material suppliers and OEM customers over the medium to long term.

Covid-19 Impact:

The COVID-19 pandemic severely disrupted the aerospace composite materials market through a prolonged collapse in commercial flight demand that halted aircraft deliveries, idled assembly lines, and led to significant destocking of composite materials across the supply chain. However, the recovery has been both strong and composite-intensive. Airlines are replacing ageing aluminum-heavy fleets with new-generation composite aircraft to reduce operating costs, and OEM backlogs have reached historic highs. The post-pandemic environment has reinforced the strategic importance of lightweight materials in delivering the fuel efficiency that airline economics now demand, positioning composite suppliers for an extended upcycle.

The Carbon Fiber Composites segment is expected to be the largest during the forecast period

The Carbon Fiber Composites segment is expected to account for the largest market share during the forecast period. Their unmatched combination of high tensile strength, low density, and resistance to fatigue and corrosion makes them the preferred structural material for primary airframe applications including fuselages, wings, and empennage assemblies in both commercial and military platforms. Leading commercial aircraft such as the Boeing 787 and Airbus A350 incorporate carbon fiber composites as the primary structural material, and this design philosophy is being extended to next-generation narrow-body.

The Automated Fiber Placement (AFP) segment is expected to have the highest CAGR during the forecast period

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The automated fiber placement manufacturing process segment is anticipated to register the highest growth rate during the forecast period. AFP technology enables precise, repeatable deposition of composite tapes onto complex three-dimensional mandrels at high speeds, dramatically reducing material waste and labor hours compared with manual layup methods. As aircraft production rates escalate to address record OEM backlogs, manufacturers are investing heavily in AFP equipment and digital manufacturing cells to scale output without proportional headcount increases.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. The region is home to Boeing, the world's largest commercial aircraft manufacturer, alongside a dense ecosystem of tier-one composite suppliers, specialist fabricators, and research institutions. Government-backed research programs through NASA and DARPA continue to fund composite material innovations that transition into production programs, reinforcing the technical and commercial leadership of North American composite stakeholders.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, propelled by the rapid expansion of commercial aviation fleets in China, India, and Southeast Asia. India's government-driven aviation sector liberalization is generating fleet expansion orders that flow through to composite material demand. Regional governments are co-investing in aerospace manufacturing parks and composite research centers, accelerating industrial capability development and attracting foreign investment into local composite production.

Key players in the market

Some of the key players in Aerospace Composite Materials Market include Toray Industries, Inc., Hexcel Corporation, Teijin Limited, Solvay S.A., SGL Carbon SE, Mitsubishi Chemical Group Corporation, Park Aerospace Corp., DuPont de Nemours, Inc., Owens Corning, Gurit Holding AG, Huntsman Corporation, Materion Corporation, BASF SE, Royal TenCate N.V., and Spirit AeroSystems Holdings, Inc.

Key Developments:

In March 2026, Hexcel Corporation and Airbus announced a long-term supply

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agreement under which Hexcel will supply carbon fiber pre-preg materials for the next-generation single-aisle aircraft program. The partnership includes joint investment in process automation and material qualification activities intended to reduce composite part manufacturing costs by approximately 20% relative to current benchmarks.

In January 2026, Toray Industries announced a major expansion of its carbon fiber production capacity in the United States, investing over $1 billion in a new facility in South Carolina designed to serve growing demand from commercial aircraft OEMs and the emerging urban air mobility sector. The facility is expected to reach full production capacity by 2028 and will create approximately 500 direct manufacturing jobs.

Fiber Types Covered:

- Carbon Fiber Composites
- Glass Fiber Composites
- Aramid Fiber Composites
- Ceramic Fiber Composites
- Hybrid Fiber Composites

Resin Types Covered:

- Thermoset Composites
- Thermoplastic Composites

Manufacturing Processes Covered:

- Automated Fiber Placement (AFP)
- Filament Winding
- Resin Transfer Molding (RTM)

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- Hand Lay-Up
- Compression Molding
- Pultrusion
- Injection Molding

Aircraft Types Covered:

- Commercial Aircraft
- Military Aircraft
- Business Jets
- Helicopters
- Spacecraft
- Unmanned Aerial Vehicles (UAVs)
- Advanced Air Mobility (AAM) Aircraft

Applications Covered:

- Fuselage
- Wings
- Tail Sections
- Interior Components
- Engine Components
- Landing Gear Components

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- Propellers & Rotor Blades
- Cabin Structures

End Users Covered:

- OEMs
- Maintenance, Repair & Overhaul (MRO) Providers
- Defense Organizations
- Space Agencies

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain

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- Netherlands
- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil

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- Argentina
- Colombia
- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa
  - Egypt
  - Morocco
  - Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants

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- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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 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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