

Composite Material - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)

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Report description:

Composite Material Market Analysis

The Composite Material market is expected to grow from USD 67.65 billion in 2025 to USD 70.94 billion in 2026 and is forecast to reach USD 89.93 billion by 2031 at 4.86% CAGR over 2026-2031. Robust demand for lightweight, high-performance materials in transportation, energy, infrastructure and electronics is widening the application portfolio, while continuous process automation is lowering cycle times and defects. Asia-Pacific, holding 45.12% of global revenue in 2024, remains the epicenter of volume growth as wind-turbine expansion, electrification programs and large-scale infrastructure projects accelerate regional consumption. Rapid progress in ceramic matrix technologies, steady substitution of metals by polymer matrix grades and an improving supply base for specialty reinforcements are strengthening competitive barriers for late entrants. Recycling limitations, however, continue to cloud long-term circularity targets and could restrain adoption if end-of-life solutions do not keep pace with installation rates.

Global Composite Material Market Trends and Insights

Electrification-Driven Carbon-Fiber Demand in E-Mobility

Electric vehicles integrate roughly 450 lb of plastics and polymer composites-an 18% rise compared with internal-combustion platforms-because every 10% curb in curb weight typically stretches driving range by 6-8%. Battery enclosures have become a flagship application, where carbon-fiber reinforced polymers deliver a 30% mass cut versus aluminum without sacrificing thermal stability. Body panels molded from glass-fiber reinforced thermoplastics enable cost-competitive lightweighting, while

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natural-fiber laminates in interior trim broaden sustainability credentials. Automakers are converging on multi-material architectures that blend carbon, glass and bio reinforcements to optimise stiffness, crashworthiness and lifecycle emissions. Supply chains are responding by expanding tow capacity and qualified prepreg lines across North America, Europe and East Asia to avert bottlenecks during the 2026-2028 model-launch window.

Increasing Usage in the Manufacturing of Wind Turbine Blades

Global wind installations climbed 17% in 2024 and 35% in 2025, pushing cumulative capacity toward the 450 GW mark envisaged for 2035. Next-generation offshore machines now exceed 15 MW, requiring blades longer than 110 m that can only be realised with tailored composite lay-ups. More than 1 million t of glass and carbon reinforcements will be consumed annually for blade manufacture by the end of the decade, intensifying pressure on glass-fiber melt capacity and high-modulus carbon supply. While glass-fiber reinforced plastics continue to dominate on a cost-per-meter basis, selective carbon spar caps are proliferating to curb tip deflection and blade-root mass. Europe is piloting thermoplastic blades for weldable root joints, potentially enabling recycling routes that avoid co-processing in cement kilns. The sector's emerging blade-circularity regulations make material traceability and resin reformulation urgent priorities for OEMs and fabricators.

High Cost of Composite Materials

Carbon-fiber composites typically price at five-to-ten times steel on a delivered-part basis, deterring penetration into cost-sensitive segments. Aerospace-grade prepregs entail autoclave curing, tight environmental controls and extensive non-destructive testing, each inflating unit expense. Automotive programs confront similar hurdles, confining carbon-fiber usage largely to premium marques despite favorable weight-benefit ratios. Production scale remains a pivotal barrier, since fiber-spinning lines and precursor plants run capital-intensive. Breakthroughs such as National Renewable Energy Laboratory's thermoforming route promise 90-95% cost savings for recyclable carbon sheets, yet commercial deployment will require multi-year qualification campaigns. Until raw-material prices drop or design engineers capture superior system-level savings, many potential adopters may defer high-volume substitution.

Other drivers and restraints analyzed in the detailed report include:

Growing Adoption of Thermoplastic Composites in Mass-Production Automotive
Increasing Use of Composites in the Aerospace and Defense Industry
Challenges in Recycling Composite Materials

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Polymer matrix composites (PMCs) delivered 55.62% of 2025 revenue, reinforcing the composites market as the preferred option for balanced performance and manufacturability. Thermoset epoxies remain mainstream in aerospace, marine and wind blades, yet recyclable thermoplastics are steadily eroding share in automotive and consumer goods. Commercial thermoplastic UD-tape lines now exceed 1 m wide, favouring high-throughput press forming for battery trays and seat structures. In parallel, the composites market size attributable to ceramic matrix composites is projected to post an 8.12% CAGR between 2026 and 2031, propelled by aerospace propulsion and concentrated solar-power receivers.

CMCs withstand more than 1 600 C, replacing nickel super-alloys and slashing cooling demands, thereby unlocking unrivalled thermal efficiencies. Investment outlays are significant, but once quiver production stabilises, their life-cycle value proposition offsets initial premiums through weight savings, fuel burn reductions and lower maintenance. Metal matrix composites occupy a smaller niche that thrives on extraordinary thermal conductivity and wear resistance for electronic substrate carriers and brake

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rotors. Additive-manufacturing pathways and five-axis CNC finishing are broadening design envelopes, hinting at incremental penetration in the latter half of the decade.

The Composites Market Report Segments the Industry by Matrix Material (Polymer Matrix Composites (PMC), Ceramic/Carbon Matrix Composites (CMCs), Other Matrices), Reinforcement Fiber (Glass Fiber, Carbon Fiber, and More), End-Use Industry (Automotive and Transportation, Wind Energy, and More), and Geography (Asia-Pacific, North America, Europe, and More). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

Asia-Pacific anchors the composites market with 44.85% revenue in 2025 and is projected to grow at 7.45% through 2031 as China escalates offshore wind installations, India expands metro rail networks and Southeast Asia upgrades grid infrastructure. The regional composites market size also benefits from escalating carbon-fiber capacity; South Korea's Hyosung is lifting annual output to 9 000 t to meet aerospace and hydrogen-tank demand. Japan's value chain focuses on high-precision tow spreading and prepreg technologies, serving both domestic air-frame programs and export customers.

North America trails closely, propelled by sustained aerospace deliveries, federal investments in renewable energy and a resurgent recreational-marine segment. The United States Department of Energy earmarked USD 20 million to advance wind-turbine composite recycling, signalling policy momentum toward circularity. Canadian provinces sponsor advanced-materials clusters that couple academic R&D with injection over-molding pilot lines, aiming to retain domestic IP around bio-based thermoplastics.

Europe commands sophisticated design capabilities and stringent environmental regulations that foster rapid adoption of bio-resins and closed-loop processes. Although supply-chain disruptions and energy-cost spikes trimmed production in late-2024, the bloc maintains a 21.74% share of global volumes. Initiatives such as Vestas's circular blades and low-emission towers illustrate how EU climate policy is steering OEM priorities toward holistic sustainability. Eastern European nations, leveraging skilled labor and proximity to Western markets, are courting investment in pultrusion and filament-winding plants.

South America and the Middle East & Africa, while collectively smaller, are registering outsized percentage gains as infrastructure modernization and desalination projects specify composite solutions. Brazilian wind corridors, Saudi desalination brine lines and South African electric-bus bodies are notable demand pockets. Technology transfer from multinational players, combined with local reinforcement supply (sisal, jute), is catalysing indigenous innovation and gradually narrowing cost gaps with imported parts.

List of Companies Covered in this Report:

3M Arkema BASF CPIC BRASIL Fibras de Vidro Ltda DuPont Exel Composites Gurit Services AG Hexcel Corporation HS HYOSUNG ADVANCED MATERIALS Lanxess Mitsubishi Chemical Group Corporation. Nippon Graphite Fiber Co., Ltd. Owens Corning SGL Carbon Syensqo Teijin Limited Toray Industries Inc.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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