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Composite Tooling Market Forecasts to 2032 – Global Analysis By Tooling Type (Matched Metal Tooling, Kirksite Tooling, Composite Tooling, Invar Tooling), Material, Manufacturing Process, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Composite Tooling Market is accounted for $613.58 million in 2025 and is expected to reach $1,038.01 million by 2032 growing at a CAGR of 7.8% during the forecast period. Composite tooling refers to the use of composite materials, such as carbon fiber, fiberglass, or epoxy resins, to create molds, fixtures, and tooling components used in the manufacturing of composite parts. These tools are essential in industries like aerospace, automotive, and marine, where lightweight and high-strength components are required. Composite tooling offers benefits such as reduced weight, high dimensional stability, and resistance to corrosion and temperature fluctuations. It enables the efficient production of complex geometries and high-performance components. The tooling is typically produced through processes like hand lay-up, vacuum bagging, or autoclaving to ensure precision and durability during repeated use.

According to the European Commission’s September 2021 data, the European Union's Horizon 2020 research and innovation program has approved funding for the new SEER project.

Market Dynamics:

Driver:

Rising Demand from Aerospace & Defense Sector

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Rising demand from the aerospace and defense sector is significantly propelling the composite tooling market. The need for lightweight, high-strength materials in next-gen aircraft and military applications is driving adoption of advanced composite tooling solutions. This surge is fostering innovation in carbon fiber-reinforced polymers and hybrid tooling systems, enhancing precision and efficiency. As defense budgets expand and fuel efficiency regulations tighten, composite tooling becomes indispensable for manufacturing durable, high-performance components, positioning the market for sustained growth.

Restraint:

High Initial Costs of Composite Tooling

The high initial costs of composite tooling present a major barrier to market growth. Manufacturing composite tools requires advanced materials, skilled labor, and specialized equipment, resulting in substantial upfront investment. This cost factor deters small and medium-sized enterprises from adopting composite tooling, especially when compared to more affordable traditional metal tools. Consequently, it limits market expansion and slows the adoption of composite tooling across industries with tight budget constraints.

Opportunity:

Growth in Automotive Light weighting Trends

The growing trend of automotive light weighting is accelerating demand in the composite tooling market. As manufacturers seek fuel-efficient, low-emission vehicles, the shift to lightweight materials like carbon fiber and advanced polymers is driving tooling innovation. Composite tooling enables precise molding of complex, weight-saving components, reducing cycle times and enhancing production efficiency. With electric vehicles and sustainability goals gaining momentum, composite tooling becomes essential for scalable, high-performance part fabrication—positioning the market for robust growth across global automotive supply chains.

Threat:

Limited Tool Life Compared to Metal Tooling

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Limited tool life compared to traditional metal tooling poses a significant challenge to the growth of the composite tooling market. Composite tools often degrade faster under high-temperature and high-pressure conditions, leading to frequent replacements and increased operational costs. This limitation reduces their cost-effectiveness in high-volume production settings, making manufacturers hesitant to adopt composite tooling for long-term use. As a result, it hinders broader market penetration, especially in cost-sensitive industries.

Covid-19 Impact

The Covid-19 pandemic had a mixed impact on the composite tooling market. Initially, disruptions in supply chains, labor shortages, and halted manufacturing activities led to project delays and reduced demand, particularly in the aerospace and automotive sectors. However, the market gradually rebounded as industries adapted to new safety protocols and resumed operations. The pandemic also accelerated the shift toward automation and digitalization in tooling processes, fostering long-term growth opportunities.

The kirksite tooling segment is expected to be the largest during the forecast period

The kirksite tooling segment is expected to account for the largest market share during the forecast period, due to its excellent castability, dimensional stability, and machinability enable faster turnaround and reduced lead times, especially in aerospace and automotive applications. The ability to replicate intricate geometries with minimal shrinkage enhances design flexibility, while its recyclability supports sustainability goals. As industries prioritize lightweight, high-performance tooling, kirksite's adaptability and affordability are driving its growing adoption across composite manufacturing workflows.

The carbon fiber segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the carbon fiber segment is predicted to witness the highest growth rate due to its unmatched strength-to-weight ratio, enabling high-performance tooling for automotive, and wind energy sectors. Its thermal stability and rigidity ensure precision in complex mold geometries, while lightweight properties reduce energy consumption during manufacturing. As industries demand durable, efficient, and sustainable solutions, carbon fiber's recyclability and compatibility with advanced resins make it a preferred choice. This segment's growth is further fueled by innovations in automated lay-up and out-of-autoclave processes.

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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 expanding aerospace, automotive, and wind energy sectors. Government initiatives like “Make in India” and rising investments in lightweight, high-performance materials are accelerating adoption. The region’s cost-effective manufacturing capabilities and skilled labor pool support rapid tooling innovation. Additionally, increasing demand for electric vehicles and renewable energy solutions is fueling the need for advanced composite molds, positioning Asia Pacific as a strategic hub for global tooling production.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, owing to increased demand for lightweight and high-strength materials in aircraft and electric vehicles has significantly boosted the adoption of composite tooling. Technological advancements, presence of key players, and supportive government initiatives toward sustainability and fuel efficiency are further propelling market expansion. Additionally, investments in R&D and automation in manufacturing processes are enhancing productivity and driving regional market growth.

Key players in the market

Some of the key players profiled in the Composite Tooling Market include Hexcel Corporation, Gurit Holding AG, Janicki Industries, Solvay S.A., Airtech Advanced Materials Group, Teijin Limited, Sika AG, Toray Industries, Inc., Formtech Composites, Composite Tooling and Engineering Solutions, General Tool Company, Leadtime Technology, IDI Composites International, AIP Aerospace, Huntsman Corporation, Park Aerospace Corp., Shape Corp., Norco Composites & GRP, Trelleborg AB and Hexion Inc.

Key Developments:

In June 2025, Kongsberg Defence & Aerospace and Hexcel Corporation recently formalized a significant five year strategic partnership at the 2025 Paris Air Show. Under this long term agreement, Hexcel will supply its acclaimed HexWeb® engineered honeycombs and HexPly® prepregs to support Kongsberg’s core defence and aerospace production programs.

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In March 2025, Fairmat, has partnered with Hexcel Germany to combat the incineration of carbon fiber prepreg waste in Europe. Fairmat will lease a former Hexcel facility in Bouguenais, France, to recycle carbon fiber and resin offcuts using a low-energy, cold-treatment process. This initiative aims to repurpose most of Hexcel's European prepreg scrap into new composite panels—supporting industries like automotive, electronics, and sports.

Tooling Types Covered:

- Matched Metal Tooling
- Kirksite Tooling
- Composite Tooling
- Invar Tooling

Materials Covered:

- Carbon Fiber
- Glass Fiber
- Epoxy Resin
- BMI (Bismaleimide)
- Other Materials

Manufacturing Processes Covered:

- Compression Molding
- Autoclave Process
- Resin Transfer Molding (RTM)

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Vacuum Infusion Process

Other Manufacturing Processes

End Users Covered:

Aerospace and Defense

Automotive

Construction

Industrial

Marine

Consumer Goods

Wind Energy

Healthcare

Electrical and Electronics

Other End Users

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 2022, 2023, 2024, 2026, and 2030
- 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

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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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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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