

# **The 2019 State of the Composites Industry Report: A global outlook at materials and markets for composites**

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## **The Chinese Market**

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China's glass fiber and composites production has been leading the world for the past several years, with glass fiber production exceeding 60% of the world's total output. For the past several years, the annual production capacity of glass fiber in the Chinese composites industry has exceeded 5.5 million metric tons and the annual composite shipment has been more than 4.0 million metric tons. However, numbers have dipped in the past couple of years. The total shipment of composite products in 2018 was 4.3 million metric tons, a decrease of 3.15% compared to 2017. This reduction continued in 2019, with the total production of composite products decreasing by 8.5% from January through September compared to 2018.

This downward trend occurred primarily because the Chinese government and composites industry have enforced several regulations on environmental protection and other industry standards since 2017, leading to the closing of a large number of composites manufacturing plants and companies. The entire Chinese composites industry is undergoing transformation in an effort to promote more innovation, higher productivity, environmentally-friendly operations, a lower waste rate, more optimized operations and more efficient management.

However, even though the total shipment is slightly reduced, leading Chinese composite companies are receiving more orders, increasing profits and growing rapidly, which is viewed as a direct benefit and outcome of industry-wide restructuring and optimization initiatives.

Major markets for GFRP in China include wind power, vessels and tanks for the oil and gas industry, new rural construction and lightweight building materials. The rapid development of

downstream market segments such as windmills, solar panels and frames, automotive, rail transit, modular and portable housing, modern farming and animal husbandry, intelligent logistics, 5G communications and other fields contribute to the healthy market size of GFRP and CFRP composites.

The Chinese carbon fiber composites industry has grown steadily for the past several years. There are six companies capable of producing more than 1,000 tons of carbon fiber annually. Currently, domestic production of carbon fiber is about 8,000 tons, while the total consumption of carbon fiber is 30,000 tons, reflecting an import of 22,000 tons to meet national market needs. The Chinese carbon fiber industry is still in its infancy, and it will take time for the newly-developed industry to mature.

Most users of carbon fiber still place more trust in imported carbon fiber products for their consistency in quality and performance. Thus, it is not production capability, equipment or processes that limit the growth of carbon fiber in China. Instead, market acceptance is forming the bottle neck for the Chinese carbon fiber industry. For many applications, use of domestically-produced carbon fiber needs re-certification. It is expected that by 2025, the Chinese carbon fiber industry will reach a breakpoint and domestically-produced carbon fiber composites will surpass the imported amount.

Like glass fiber, the carbon fiber industry also has undergone restructuring and optimization, with several carbon fiber companies declaring bankruptcy last year. The driving applications for CFRP in China are within the wind energy industry, electricity transmission, electric vehicles, the 3Cs (computers, cell phones and communications, including 5G), sports and city transit.

Overall, the composite industry in China faces strict environmental regulations, price increases in chemical and raw materials, cost increase in labor and rising energy costs. Achieving competitiveness through innovation is key. For example, traditional hand lay-up manufacturing has been gradually phased out in China. Currently, there is a need for advanced manufacturing

equipment, including closed molding technologies. Automation will also become a necessity to make operations more competitive.

In 2019, the U.S./China trade war worsened, and it appears it may not end soon. Multilateral trade, including China-EU trade, is affected, and global trade tensions are escalating. At present, fiberglass, carbon fiber, basalt fiber and all composite products have been included in the United States plus-25% tariff list. These global trade uncertainties have forced the Chinese composites industry to expand domestic markets.

In conclusion, the future healthy growth of the Chinese composites industry will rely more on scientific and technological innovation and product quality improvement, rather than on resources, low-cost labor and an expanding production capacity. New initiatives from the government related to rural area construction, modern agriculture and farming, and 5G communications will expand existing applications and open up new ones for composite materials and structures. Looking ahead, composites have a bright future in China.

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**Figure X: Graph to Come**

*Source: XXXXXX*