

# **North America 3D Woven Fabrics Market Forecast to 2028 – COVID-19 Impact and Regional Analysis – by Type (Solid, Hollow, Shell, and Nodal), Fiber Type (Carbon Fiber, Glass Fiber, and Others), and Application (Ballistics, Aircraft, Transportation, Building and Construction, and Others)**

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## **Abstracts**

The North America 3D woven fabrics market is expected to grow from US\$ 35.92 million in 2022 to US\$ 82.18 million by 2028. It is estimated to grow at a CAGR of 14.8% from 2022 to 2028.

**Increasing Demand for 3D Woven Fabrics from Aircraft Industry Fuels North America 3D Woven Fabrics Market**

Advanced materials are crucial for boosting the fuel economy of modern automobiles while ensuring safety and performance. Substituting cast iron and traditional steel components with lightweight materials such as high-strength 3D Woven Fabrics reduces the weight of a vehicle body and chassis, thereby reducing the fuel consumption of a vehicle. Moreover, 3D Woven Fabrics are suitable for the manufacturing of nonstructural interior components, seat backs, headliners, interior panels, and dashboards.

The utilization of natural fiber-reinforced composites is increasing in aircraft applications due to legislation and regulations forcing manufacturers to use sustainable and recycled materials to manufacture fuel-efficient and lightweight vehicles. In 2020, Dr. Ing. h.c. F. Porsche AG launched Porsche 718 Cayman GT4 Clubsport MR, featuring a car body kit made of natural fiber composite materials made from farmed flax fibers. This natural

fiber composite is used to develop front and rear aprons; front spoilers; front and rear lids; mudguards; and diffusers, including aerodynamic fins. In 2022, Mercedes-Benz Group and its development partners, HWA AG and Bcomp Ltd, developed front bumpers engineered from natural fiber composite for Mercedes-AMG GT4 race cars. In 2022, Bayerische Motoren Werke AG and Bcomp Ltd formed a development alliance to utilize renewable types for vehicle components. Furthermore, Bcomp Ltd developed powerRibs and ampliTex reinforcement solutions made from natural composite materials. These solutions have been used in DTM touring cars from BMW M Motorsport to substitute selected carbon fiber-reinforced plastic components. Therefore, the increasing use of 3D Woven Fabrics in the aircraft industry drives the market growth. Also, the rising adoption of electric vehicles (EVs) drives the North America 3D Woven Fabrics market.

### North America 3D Woven Fabrics Market Overview

The region holds extensive growth opportunities for the 3D woven fabrics market owing to the growing utilization of advanced textiles such as 3D woven fabrics in end-use industries such as aerospace, transportation, building and construction, and aircraft. 3D woven fabrics are used in flanges, turbine rotors, beams, ballistic protection, high-performance sports products, and commercial products such as body armors, parachutes, sail cloths, and military helmets. As 3D woven fabric exhibits design versatility, fuel efficiency, impact resistance, and cost-effectiveness, it is used as an innovative alternative to metals in aerospace applications. According to the article published by the National Aeronautics and Space Administration (NASA) in 2020, NASA utilizes 3D woven materials to develop Woven Thermal Protection Systems (W-TPS), which consist of mechanically deployable aeroshells made of 3D woven carbon fabric.

### North America 3D Woven Fabrics Market Revenue and Forecast to 2028 (US\$ Million)

### North America 3D Woven Fabrics Market Segmentation

The North America 3D woven fabrics market is segmented into type, fiber type, application, and country.

Based on type, the North America 3D woven fabrics market is segmented into solid, hollow, shell, and nodal. The solid segment held the largest share of the North America 3D woven fabrics market in 2022.

Based on fiber type, the North America 3D woven fabrics market is segmented into

carbon fiber, glass fiber, and others. The carbon fiber segment held the largest share of the North America 3D woven fabrics market in 2022.

Based on application, the North America 3D woven fabrics market is segmented into ballistics, aircraft, transportation, building and construction, and others. The aircraft segment held a larger share of the North America 3D woven fabrics market in 2022.

Based on country, the North America 3D woven fabrics market is segmented into the US, Canada, and Mexico. The US dominated the share of the North America 3D woven fabrics market in 2022.

3D Weaving SaRL; Sigmatex Ltd; TEAM Inc; Tex Tech Industries Inc; and Textum OPCO LLC are the leading companies operating in the North America 3D woven fabrics market.

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