

Ultra High Performance Concrete (UHPC) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Ultra High Performance Concrete Market size is estimated at USD 532.55 million in 2024, and is expected to reach USD 784.30 million by 2029, growing at a CAGR of greater than 8% during the forecast period (2024-2029).

The COVID-19 pandemic negatively impacted the ultra-high-performance concrete market. Due to the lockdown and brief halts in production facilities, several applications suffered significant damage, limiting the consumption of ultra-high-performance concrete. Nonetheless, beyond 2020, the market developed slowly due to ongoing efforts in the main end-user categories and is likely to continue on its path.

The major factors driving the market studied include the rising construction activities across the world and the increasing benefits of ultra-high-performance concrete.

The high material cost of UHPC, when compared with conventional concrete, is expected to significantly hinder the growth of the market studied.

Growing trends toward the use of ultra-high-performance concrete in prefabricated construction are likely to act as a driving force in the future.

North America is expected to dominate the global market during the forecast period. Meanwhile, Asia-Pacific is expected to register the highest CAGR during the forecast period due to the increasing construction activities across the region.

Ultra High Performance Concrete (UHPC) Market Trends



Slurry-Infiltrated Fibrous Concrete (SIFCON) to Dominate the Market

Slurry infiltrated fiber concrete (SIFCON) is a recently developed construction material. SIFCON could be considered a special type of fiber concrete with high fiber content. The matrix consists of cement slurry or flowing cement mortar.

This composite material is used for structures subjected to blast loading, repair of prestressed concrete beams, and safe vaults.

Generally, as compared to normal fiber-reinforced concrete (FRC), SIFCON is different in two aspects, i.e., fiber content and the method of production. The fiber content of FRC generally varies from 1% to 3% by volume, but the fiber content of SIFCON varies between 5% and 20%. Also, the matrix of SIFCON consists of cement paste or flowing cement mortar as opposed to regular concrete used in FRC.

All of these points make the production of SIFCON far different from that of FRC. In FRC, the fibers are added to the wet or dry concrete mix, whereas SIFCON is prepared by infill-treating cement slurry into a bed of fibers preplaced and packed tightly in the molds.

Recently, interest in using SIFCON in explosion-proof containers and safety cabinets has increased. SIFCON has high impact resistance and high energy absorption.

Various studies have been carried out to observe the other properties of SIFCON, such as the effect of adding different volumetric ratios of steel fiber. These studies will help find more suitable applications of SIFCON in the future.

All these factors are expected to rapidly drive the market studied during the forecast period.

North America to Dominate the Market

North America dominated the global market share. The United States has a significant share of the construction industry in North America. Besides the United States, Canada and Mexico contribute significantly to the investments in the construction sector.

According to the US Census Bureau, the value of private construction in 2022 stood at



USD 1,434.2 billion, 11.7% higher than the USD 1,279.5 billion in 2021. Residential construction spending in 2022 was USD 899.1 billion, up 13.3% from USD 793.7 billion in 2021, while non-residential construction spending amounted to USD 530.1 billion in 2022, down 9.1% from USD 485.8 billion in 2021.

Furthermore, as per statistics generated by the US Census Bureau, the estimated seasonally adjusted annual rate of construction spending in December 2023 was USD 2,096.0 billion, 0.9% higher than the updated November 2023 estimate of USD 2,078.3 billion. Spending on buildings increased by 7.0% in 2023 to USD 1,978.7 billion from USD 1,848.70 billion in 2022, thereby increasing the consumption of the market studied.

Moreover, significant infrastructure investments in the country are expected to boost the country's construction sector, thus uplifting the growth of the market studied. For instance,

According to the US Department of Transportation, in 2023, the US Department of Transport invested around USD 1.2 billion for nine "mega" projects, which include highway, bridge, freight, port, passenger rail, and public transportation, under the National Infrastructure Project Assistance Program.

According to the American Road & Transportation Builders Association, on November 30, 2023, the United States committed USD 2.6 billion in highway and bridge formula funds to support over 2,300 new projects. This was in addition to over USD 109 billion in investment and over 60,000 new project commitments supported in FY 2022 and FY 2023.

On the whole, the aforementioned factors are expected to increase the demand for ultrahigh-performance concrete during the forecast period.

Ultra High Performance Concrete (UHPC) Industry Overview

The global ultra-high-performance concrete (UHPC) market is relatively fragmented in nature. Some of the major companies are (not in any particular order) Holcim, Sika AG, Illinois Works Inc., RAMPF Holding GmbH & Co. KG, and ceEntek.

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