

# Underwater Concrete Market Assessment, By Product Type [Slag Based, Geopolymer, Fly Ash Based, Others], By Material [Admixtures, Aggregates, Cement], By Application [Hydro Projects, Bridges, Tunnels, Shore Protection, Others], By Region, Opportunities and Forecast, 2018-2032F

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### **Report description:**

Global underwater concrete market is projected to witness a CAGR of 5.57% during the forecast period 2025-2032, growing from USD 173.54 billion in 2024 to USD 267.75 billion in 2032. The underwater concrete market is growing significantly owing to the growing investments in marine infrastructure and a rising demand for special construction materials. Underwater concrete features durability and resistance to water penetration, specially made to survive the toughest underwater conditions, making it useful for partially submerged infrastructure, such as bridges, dams, ports, and offshore platforms. The growing demand for coastal protection infrastructure and marine infrastructure, such as installing seawalls, breakwaters, offshore wind farms, and oil platforms, will further boost this demand as governments try to protect against erosion in coastal regions and the increasing sea level-augmenting market growth for underwater concrete. Technological advancements in underwater concrete innovations have enhanced its usage in different project types, guaranteeing durability and excellent performance. Also, the growing demand for efficient transportation networks and infrastructure development with rapid urbanization in the coastal regions further drives the industry towards innovating greener concrete solutions and methods to protect marine concrete that reduce environmental impact by embracing sustainable construction practices. This enhances the expansion of the underwater concrete market since it fulfills an important purpose in meeting modern construction requirements while solving environmental problems and encouraging sustainability in marine development, thus working towards more resilient coastal communities. For instance, in April 2024, researchers at the Hong Kong Polytechnic University introduced biomineralization as a sustainable strategy against microbial corrosion in marine concrete. This new approach created a protective biomineralized film that isolates the concrete from corrosive sulfate-reducing bacteria, thus significantly extending the marine concrete lifetime. This approach depends on carbon dioxide to create mineral precipitates, which seems to reduce the carbon footprint and energy consumption

related to constructing marine infrastructures. The researchers report that this method could be applied in many water-prone environments and might eventually lead to the design of sustainable marine structures.

Dams and Hydropower Projects Drive Underwater Concrete Demand

The demand for underwater concrete is boosted by the increasing demand for dams and hydropower projects, which has caused the market for underwater concrete to experience tremendous growth. Hydropower projects, dams, and reservoirs are constructed with hard-wearing and high-quality materials capable of withstanding extreme water pressure and harsh environmental conditions. This need for durability and longer lifespan in hydropower plants has created a growing demand for specialty underwater concrete formulations that are particularly resistant to degradation and have very low permeability. The growing demand for renewable energy has promoted further investment in hydroelectric infrastructure, increasing demand for underwater concrete solutions. Globally, governments are focusing on the development of renewable source projects, with considerable investments in new hydropower plants as well as improvements in existing projects. The companies in the industry are capitalizing on the rising demand for underwater concrete for new construction and restoration of dams and reservoirs. For instance, in September 2024, Cemex SAB announced to supply concrete for the Demopolis Lock and Dam on the Tombigbee River. Operated by the Army Corps of Engineers, the project restored the functionality of the dam, which serves as a crucial artery for commercial navigation in the Southern United States, connecting the Tennessee River to Mobile Bay and the Gulf of Mexico. Cemex collaborated to supply more than 2,000 cubic yards of Vertua concrete to expedite the repair process.

Urbanization is one of the leading drivers for the underwater concrete market growth owing to the requirement for robust marine infrastructure in coastal areas to provide transport facilities to the populations. As more cities expand and trade improves, investment in marine infrastructure is rising, thereby increasing demand for underwater concrete. In addition, government initiatives across emerging countries are enhancing coastal resilience, and investing in renewable energy projects also contribute to the rising need for specialized underwater concrete solutions. The underwater concrete market in China and India is expected to rise with the growing demands from the developing urban cities near the coastlines to boost the port infrastructure. Such developments increase the demand for stronger, durable, and reliable construction materials that can endure difficult marine environments.

For instance, in June 2024, Sika Group opened a new plant in Liaoning, the largest province in northeastern China. This site will manufacture a full range of products, including waterproofing solutions like underwater concrete, mortars, tile, and adhesives. This highly efficient new plant enables Sika to meet the market demands for underwater concrete whilst significantly reducing logistical distances. The Liaoning plant will cater to Sika customers in three provinces in northeastern China, with a population of more than 98 million, as well as east-central Mongolia.

Construction of Bridges Dominates the Market

The construction of bridges dominates the market for underwater concrete owing to a growing demand for infrastructure projects through rivers and seas. The project includes sea bridge projects like the Hong Kong-Zhuhai-Macau Bridge, Bandra-Worli Sea Link, Oresund Bridge, Jiaozhou Bay Bridge, and Chesapeake Bay Bridge Tunnel. The growing investment in infrastructure further boosts this demand. Moreover, advances in underwater construction technologies have also improved the application of underwater concrete in bridge projects. Underwater concrete can be installed quickly and has higher durability levels, which are the key requirements for the construction of projects, and this is popular among contractors. Government initiatives to develop and improve maritime infrastructure have boosted this trend since most countries are considering focusing on developing strong transportation systems that include bridges. Due to underwater concrete's distinct properties, including resistance to water ingress and setting efficiency while submerged in water, underwater concrete is the key requirement for half-submerged bridges. For instance, in April 2023, the Central Government of India laid the foundation stone of a bridge connecting Palashbari and Sualkuchi on the Brahmaputra River. In this project, underwater concrete is used to enhance the durability and structural integrity of the bridge segments that will be placed underwater. The market for underwater concrete will grow due to increased investments related to non-residential construction and further infrastructure development.

Asia-Pacific Acquires Highest Market Share

Asia-Pacific is the dominating region in the underwater concrete market due to the rapid development of infrastructure and investment in construction in rivers and seas. Growth in this region is propelled by the construction of new ports, harbors, and

coastal infrastructure to provide the facilities to the burgeoning urban population in Japan, China, and India. An upsurge in investments in renewable energy projects, such as offshore wind farms and oil platforms, also fuels the demand for underwater concrete. The government initiatives to strengthen coastal resilience and reduce the risks of coastal erosion and rising sea levels involve heavy investment in seawalls and breakwaters made from underwater concrete. Advancements in construction technologies in this region enhance the efficiency and effectiveness of underwater concrete. The expansion of urban areas increases demands for efficient transportation networks, bridges become vital in mitigating traffic congestion and enhancing connectivity.

For instance, in October 2024, China's Macao Special Administrative Region (SAR) inaugurated its fourth cross-sea bridge, which spans 3.08 kilometers, and was constructed using underwater concrete and waterproofing materials. This new infrastructure aims to alleviate traffic congestion and promote high-quality development in the region. Notably, it is Macao's first eight-lane bridge, connecting the Macao Peninsula to Taipa and providing an additional route for travelers using the Hong Kong-Zhuhai-Macao Bridge. The bridge features a 2.86-kilometer cross-section. This represents the use of underwater concrete in major infrastructure projects that will trigger additional investment in similar infrastructure.

Future Market Scenario (2025 [] 2032F)

☐Government investments in marine infrastructure projects will propel the use of underwater concrete, ensuring compliance. ☐The underwater concrete market is expected to grow rapidly due to the rising demand for infrastructure and commercial spaces in India

□ Factors such as rapid urbanization and technological advancements will further drive the expansion of the concrete market in the forecasted period.

Innovations in underwater concrete will play an important role in achieving sustainability and resilient infrastructure by making buildings more sustainable and adaptable to changing environmental conditions.

Key Players Landscape and Outlook

The competitive landscape of the underwater concrete market is marked by substantial growth fueled by rising investments in marine infrastructure and advancements in construction technologies. Some of the key players are focusing on innovating specialized concrete for underwater use. These companies are heavily investing in expanding their research and development facilities to innovate underwater concrete to capture a larger market share. Regional dynamics of the market are also influencing factors as Asia-Pacific dominates with rapid urbanization and growth of infrastructure. North America is also witnessing massive investment in infrastructure projects like underwater power plants, which are boosting the demand for underwater concrete. Companies are now forming alliances and partnerships to enter new markets, hence expanding their product reach. Additionally, the trend toward more sustainable construction is pushing manufacturers to manufacture environmentally friendly concrete solutions like admixtures for underwater concrete.

For instance, in June 2022, Sika Group opened a new manufacturing site for concrete admixtures in Stafford, Virginia. With this, the company will be able to cater to the demand of the construction industry in North America. All these factors place the underwater concrete market on high growth based on rising demand combined with advancements in technology.

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