

3D Concrete Printing Market, Size, Share, Growth, Trends, Insight and Outlook, 2021-2028

The Global 3D Concrete Printing Market is expected to grow at a CAGR of 17% during the forecasting period (2021-2028).



Camp Springs, Maryland Nov 10, 2021 ([Issuewire.com](https://www.issuewire.com)) - Market Overview

The 3D particular printing devices offer a quick and cost-effective method for the construction of buildings in an attempt to create three-dimensional shapes by a computer-controlled positioning

process. The technology is particularly useful for manufacturing geometrically complex components.

The method of 3D printing promises to be a promising concept, with reduced construction times, decreased power consumption, and less construction waste produced.

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Market Dynamics

The construction activities have grown during recent times on a global scale, with rapid urbanization and industrialization efforts driving the economic development of developed and developing countries alike.

As such, the issues faced with the disposal of waste and delays in the timely completion of buildings have hampered the growth of the construction sector.

The adoption and integration of computer-aided precise 3D printing technologies are aimed at optimizing the construction costs, reducing construction time, enhancing flexibility in building design, and shifting focus towards the use of eco-friendly building techniques.

The growing demand for complex building structures and the elimination of chemical waste would also propel market growth, coupled with a rise in funding and investments for innovative building techniques. For instance, in April 2018, tech startup Icon announced that it is raising money to 3D-print durable and affordable single-story concrete homes in El Salvador, which would cost around 4,000 USD each, to offset the global housing crisis.

The initial capital investment required to establish a 3D concrete printing machinery is quite high, and as such the companies face issues in building a successful venture.

The absence of skilled labor and operator workforce might also act as market barriers, owing to the vital role that workers play in finalizing the design prototype. The lack of standardized templates and limited opportunities for product variety might also hamper market growth, coupled with the lack of awareness about the optimized use of 3D printers in the construction sector.

The increasing demand for fast-paced building construction and rapid growth of the construction sector in developing countries is expected to present new opportunities for business expansion to key market players.

3D Concrete Printing Market by Offering (Printing Services, Materials), Technique (Extrusion-based, Powder-based), End-use sector (Building, Infrastructure) and Region (Americas, Asia Pacific, Europe, Middle East) - Global Forecast to 2026

Market Segmentation Analysis

The global 3D concrete printing market is segmented by concrete type into precast, ready-mix, and others including shotcrete and high-density concrete mix.

The ready-mix segment is expected to witness robust growth during the forecast period owing to

consistency in quality achieved through digital control of sand aggregates and water particles, coupled with the reduction in cement wastage and pollution-free construction activities.

For instance, in October 2018, scientists from Nanyang Technological University, Singapore (NTU Singapore) developed a 3D printing technology where two robots can work in unison using a specially formulated ready-mix concrete.

The market is further categorized by end-user into architectural, commercial, infrastructural, and residential. The residential segment is leading by market share owing to rapid urbanization in developing countries, efficient use of materials, faster building process, and flexible design.

The segment is expected to continue its dominance over the forecast period as more companies invest behind the concept of affordable housing projects using eco-friendly building materials in quicker times.

For instance, in May 2018, the city of Eindhoven, Netherlands, announced the adoption of Project Milestone involving the construction of five planned 3D-printed concrete houses over the next five years.

Geographical Share

The global 3D concrete printing market is segmented geographically by region into North America, South America, Europe, Asia-Pacific, and the Rest of the World (RoW).

Asia-Pacific is expected to witness robust growth during the forecast period owing to increased regional efforts of urbanization and a rise in the disposable income of consumers. China and India are poised to be the major contributors to the overall regional growth, owing to technological innovation and product development of 3D printing techniques.

The companies are thus focused on launching advanced printing centers to capture significant market share. For instance, in March 2018, Wipro3D, the additive manufacturing arm of Wipro Infrastructure Engineering, announced the launch of an experience center for 3D printing in Bengaluru, India, with capabilities such as post-processing, research, characterization, and validation for 3D additive manufacturing techniques.

Market Key Companies

The 3D concrete printing market is at a relatively nascent stage, and as such contains huge growth potential during the forecast period. The key market players include LafargeHolcim Ltd, Sika AG, Heidelbergcement AG, CyBe Construction B.V., and XtreeE SAS France.

The companies are thus focused on innovative product launches and strategic partnerships to strengthen their market position. For instance, in February 2018, Apis Cor completed an on-site house using 3D printing technology in Moscow, Russia, in collaboration with PIK. In November 2017, LafargeHolcim Ltd announced that it would participate in the University of Nantes' 3D printed social housing project Yhnova, to build a 95m² house, in an attempt to digitally transform the affordable social housing sector.

Industry Insights

The residential sector is the leading segment by end-user owing to rapid urbanization in developing countries, efficient use of materials, faster building process, and flexible design.

Asia-Pacific is expected to witness rapid market growth due to increased regional efforts of urbanization, the rise in the adoption of 3D printing technologies, and the rise in disposable income of consumers.

The companies increasingly focus on the formation of strategic collaborations and partnerships to expand market reach. For instance, in September 2016, LafargeHolcim Ltd and XtreeE SAS France successfully constructed Europe's first concrete load-bearing structural element in France using 3D printing technology.

Report Scope

By Concrete Type Precast

- ReadyMix
- Others

By End-User

- Architectural
- Commercial
- Infrastructural
- Residential Chapter

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