

# Living Building Materials Market Size, Share & Trends Analysis Report By Material Type (Self-Healing Concrete, Mycelium-Based Composites, Biocement, Algae-Based Materials), By End-use, By Region, And Segment Forecasts, 2025 - 2033

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## Abstracts

The global living building materials market size was estimated at USD 127.1 million in 2024 and is projected to reach USD 394.0 million by 2033, growing at a CAGR of 13.4% from 2025 to 2033. The demand for living building materials (LBMs) is rising as the construction industry seeks sustainable and self-healing alternatives to traditional cement and concrete.

These materials, which incorporate biological organisms such as bacteria, fungi, or algae, actively repair cracks, reduce carbon emissions, and improve insulation. The growing awareness of the carbon footprint of conventional construction materials and the urgent need for eco-friendly infrastructure are accelerating the adoption of sustainable alternatives.

Key drivers include advancements in biotechnology, increasing R&D investments in sustainable materials, and the cost benefits of reduced maintenance and repair. The integration of LBMs into smart city projects and circular construction models is also boosting market growth. In addition, global efforts to achieve net-zero carbon emissions are prompting the adoption of materials that can absorb CO<sub>2</sub> or produce oxygen, thereby contributing to the development of carbon-negative structures. The high thermal efficiency and long-term durability of LBMs make them ideal for use in energy-efficient buildings. Major construction firms and universities are collaborating to scale pilot projects into commercial applications, further stimulating demand.

Emerging trends include the development of self-healing bioconcrete, photosynthetic facades, and bio-bricks that grow using microbial processes rather than being kiln-fired. Startups are experimenting with genetically modified bacteria that secrete calcium carbonate for structural repair, while algae-based panels are being used for carbon capture and aesthetic building designs. Integration of AI and data analytics in monitoring LBM performance is also gaining traction. Another key trend is the use of modular construction with bio-grown components that are biodegradable and recyclable. The convergence of synthetic biology and construction technology is expected to redefine sustainability standards in the coming decade.

## Global Living Building Materials Market Report Segmentation

This report forecasts revenue growth at regional & country levels and provides an analysis on the industry trends in each of the sub-segments from 2021 to 2033. For this study, Grand View Research has segmented the global living building materials market report based on the material type, end use, and region:

### Material Type Outlook (Revenue, USD Million, 2021 - 2033)

Self-Healing Concrete

Mycelium-Based Composites

Biocement

Algae-Based Materials

Others

### End Use Outlook (Revenue, USD Million, 2021 - 2033)

Industrial

Residential

Commercial

### Regional Outlook (Revenue, USD Million, 2021 - 2033)

## North America

U.S.

Canada

Mexico

## Europe

UK

Germany

France

Spain

## Asia Pacific

China

Japan

India

South Korea

## Central & South America

## Middle East & Africa

Saudi Arabia

UAE

Egypt

Qatar

Kuwait

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