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Mycelium Brick Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Product Type (Pure mycelium bricks, Mycelium agricultural waste composites, Mycelium wood waste composites, Others), By Form (Bricks & Blocks, Panels & Boards, Insulation Materials, 3D printed or custom forms, Others), By Application (Residential, Commercial, Institutional & Public Buildings, Others), By Region, and By Competition, 2020-2030F

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Abstracts

Market Overview

Global Mycelium Brick Market was valued at USD 1.18 Billion in 2024 and is expected to reach USD 1.85 Billion by 2030 with a CAGR of 7.59% during the forecast period.

The global Mycelium Brick Market is gaining rapid traction as sustainable construction practices continue to reshape the building materials industry. Mycelium, the root-like structure of fungi, is being increasingly explored for its ability to produce biodegradable, lightweight, and insulating bricks that offer a compelling alternative to conventional materials such as concrete, plastic, and foam. As environmental concerns and carbon reduction commitments rise, developers, architects, and governments are turning to eco-innovative materials like mycelium composites to reduce construction-related emissions and promote circular economies. The market is driven by key advantages of mycelium bricks, including their fire resistance, thermal insulation properties, lightweight composition, and ability to be grown from agricultural and organic waste, thus significantly lowering raw material costs and carbon footprint.

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Technological advancements and growing research and development investments are accelerating product innovation in this space. Leading companies such as Ecovative Design, Mogu S.r.l., MycoWorks, and Biohm are pioneering the development of durable, mold-resistant, and structurally stable mycelium bricks suited for a range of applications in residential and commercial construction. These materials are also being used in interior architecture, modular structures, acoustic panels, and even temporary art installations. A growing number of startups and research labs are entering the market, attracted by the scalability potential of low-energy, low-cost biofabrication techniques. Moreover, government support in the form of green building certifications, carbon offset incentives, and sustainability mandates is creating a favorable regulatory landscape, particularly in North America and Europe.

Key Market Drivers

Reduced Environmental Impact

Mycelium bricks offer a significantly lower environmental footprint compared to conventional building materials, making them attractive for sustainable construction practices. The production of mycelium-based materials requires only about 7.7 MJ of energy per kilogram, compared to approximately 83.5 MJ/kg for synthetic insulation products—reflecting a more than 90% reduction in energy consumption. The carbon emissions associated with their production are also considerably lower, emitting just 0.37 kg CO? per kg, which is about 45% less than petroleum-based alternatives. When used as insulation in walls, these materials can reduce a building’s operational greenhouse gas emissions by 72–73% annually. In construction envelopes, mycelium bricks contribute up to 89% of total thermal resistance in masonry systems and 91% in timber-frame systems, underscoring their efficiency. Additionally, scaling production from laboratory to industry level can reduce overall environmental impact by another 68%, strengthening the market's drive toward decarbonization and eco-certification alignment.

Key Market Challenges

Limited Structural Strength for Load-Bearing Applications

One of the most critical challenges faced by the global Mycelium Brick Market is its limited structural strength, which restricts its use to non-load-bearing applications. Mycelium bricks are lightweight and eco-friendly but lack the compressive strength

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typically required for load-bearing walls or foundations. While traditional fired clay bricks or concrete blocks can withstand pressures exceeding 10–20 MPa, mycelium bricks usually exhibit compressive strength in the range of 0.2–1 MPa depending on composition and fabrication. This limitation makes them unsuitable for structural elements in high-rise or seismic-prone constructions.

This challenge significantly narrows the customer base to niche segments such as interior walls, decorative panels, acoustic insulation, and temporary architecture. Builders and contractors tend to be cautious with new materials, and the absence of well-established building codes that accept mycelium bricks as structural components exacerbates the problem. Additionally, insurance companies and regulators often require proven mechanical properties for approval in residential and commercial construction.

While R&D is ongoing to reinforce mycelium with natural fibers or bio-binders to improve its strength, current solutions remain costly or lack scalability. As a result, widespread adoption of mycelium bricks for structural purposes remains constrained, which limits revenue growth and investment appeal in mainstream construction. Unless major breakthroughs are achieved, this challenge will continue to impede full integration of mycelium materials into the broader construction materials market.

Key Market Trends

Integration into Green Building Certifications and ESG Goals

As global investors and developers increasingly align with Environmental, Social, and Governance (ESG) frameworks, there is a growing demand for materials that actively reduce environmental impact. Mycelium bricks, being compostable, low-emission, and produced from agricultural waste, are gaining traction among companies seeking green building certifications such as LEED, BREEAM, WELL, and Living Building Challenge.

These certifications often reward the use of renewable, low-carbon, and non-toxic materials in construction projects. While mycelium bricks are still emerging, their potential to replace chemically intensive insulation panels or synthetic acoustic tiles makes them attractive in projects aiming for higher sustainability scores. Architects and designers are beginning to specify mycelium-based panels and bricks in projects targeting platinum or gold ratings, even if only for interior cladding, ceiling panels, or decorative partitions.

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Moreover, ESG-conscious investors are actively seeking supply chains that demonstrate biodiversity preservation, waste valorization, and minimal carbon output. Mycelium brick manufacturing—if scaled responsibly—checks all these boxes, making it attractive for venture capital firms, green infrastructure funds, and public procurement agencies.

Many companies are also including material traceability and life cycle analysis (LCA) as part of their procurement mandates. Mycelium bricks, grown with full transparency and minimal emissions, enable easier compliance with such corporate standards. This is accelerating experimentation in corporate campuses, educational institutions, and municipal buildings.

Key Market Players

Ecovative Design

Mogu S.r.l.

MycoWorks

Biohm

GROWN bio

Mycotech

Biomyc Ltd

Mushroom Material LLC

Mycelia NV / BVBA

Mushlabs GmbH

Report Scope:

In this report, the Global Mycelium Brick Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

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Mycelium Brick Market, By Product Type:

Pure mycelium bricks

Mycelium agricultural waste composites

Mycelium wood waste composites

Others

Mycelium Brick Market, By Form:

Bricks & Blocks

Panels & Boards

Insulation Materials

3D printed or custom forms

Others

Mycelium Brick Market, By Application:

Residential

Commercial

Institutional & Public Buildings

Others

Mycelium Brick Market, By Region:

North America

United States

Canada

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- Mexico

Europe

- Germany
- France
- United Kingdom
- Italy
- Spain

South America

- Brazil
- Argentina
- Colombia

Asia-Pacific

- China
- India
- Japan
- South Korea
- Australia

Middle East & Africa

- Saudi Arabia

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UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Mycelium Brick Market.

Available Customizations:

Global Mycelium Brick Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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