

Protective and/or Combustion Material



CONTEXT

Traditional materials used in construction, such as wood, plaster, glass wool, or rock wool, offer good mechanical and insulating properties but have disadvantages, including sensitivity to moisture, low recyclability, and health risks associated with volatile fibers. These materials, although effective for thermal and acoustic insulation, require specific precautions during handling to limit health impacts and avoid the dispersion of constituent elements. Furthermore, their lack of durability and the presence of toxic substances in their composition highlight the need to develop safer and more sustainable alternatives.

INVENTION

The invention proposes a new protective and/or combustion material based on cellulosic plant materials and plant-based binding agents that are not chemically modified, offering properties of cohesion, rigidity, thermal insulation, and shock protection, while being ecological, recyclable, and cost-effective. The manufacturing process, which is simple and reproducible, involves mixing and compressing these components at a minimum temperature of 30°C to obtain a homogeneous structure and strong chemical bonds.

COMPETITIVE ADVANTAGES

Ecology and Sustainability: The material is made from cellulosic plant materials and natural binding agents, not chemically transformed, making it non-toxic, recyclable, biodegradable, and environmentally friendly.

Mechanical and Insulating Properties: The material combines good rigidity, shock resistance, effective thermal insulation, and homogeneous structural cohesion, meeting the varied requirements of construction, packaging, and protection sectors.

Cost and Availability: The constituent elements are inexpensive and derived from readily available resources, enabling low-cost production on a large scale.

Simplified Manufacturing Process: The process is simple, fast, reliable, and reproducible, requiring mixing and compression steps at low temperatures, while ensuring excellent performance of the constituent elements.



APPLICATIONS

Construction
Packaging
Non-woven textiles
Combustion materials

MARKETS

Good potential for penetration in the rapidly growing bio-sourced materials markets.

Ex : Bio-sourced construction materials

Etude	Période de prévision	Volume initial (en Mds USD)	CAGR	Zone
L.E.K. Consulting	2020	1,4 (2020)	10%	France
		2,25 (2025)		
Global Market Insights	2021-2030	49 (2021)	7%	Monde
		64,23 (2025)		

INTELLECTUAL PROPERTY

European Patent n° EP2718361

DEVELOPMENT STAGE TRL 5



PARTNERSHIP

Seeking one or more industrial partners to exploit the patented invention (license or transfer)