Technology Offer

Polyurethane modular elements used for house building

Summary

A Romanian SME has developed and patented FFB (Finished Foam Brick) modular elements that can be successfully used for house building. As compared with traditional building materials, the FFB modular elements offer improved thermal, phonic and waterproof insulation. The Romanian company is looking for industrial partners interested in licensing and technical cooperation.

Creation Date	28 July 2015
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Reference	TORO20140107001

Details

Description

A Romanian company active in the field of construction of residential and non-residential buildings has developed and patented FFB (Finished Foam Brick) modular elements that can be successfully used for house building. The FFB modular elements structure consists of a block made of polyurethane foam which includes a network of empty channels. Every type of modular element is coated with panels made of cement fiber, glass fiber or OSB (Oriental Strand Broad) surfaces.
The FFP (Finished Foam Panel) modular elements are designated for producing interior or exterior bearing walls utilized in civil, commercial and industrial buildings, residential type buildings, warm water accumulation tanks, cooling chambers, etc. Besides their thermal insulation capabilities, the FFP modular elements offer a great level of phonic insulation.
The FFP panel is a precast element utilized in manufacturing exterior insulations. The FFP modular element consists in a block of polyurethane foam which can be coated with cement fiber boards, glass fiber, wood, paper, carton, etc., depending on destination and necessity. After completing a house level, the builders introduce reinforcements on vertical channels followed by concrete which fills all empty channels structures.
The modular pillar consists of a block made of polyurethane foam which has inside an empty vertical channel. The modular pillar can be coated at the exterior, the same as the other products, depending on destination and necessity. The inside wall is made of plastic, which leads to a very good flowing of concrete and also to an easy joint of modules where needed. The section can be a circle, square, hexagon (polygon).
The advantage of the polyurethane foam consists in the fact that its thermal conductivity is less than that of polystyrene (0,024 W/m*k for polyurethane foam versus 0.036 W/ m*k for polystyrene; so, 10 cm of polyurethane foam insulates the same as 15 cm of polystyrene).
The Romanian company is looking for industrial partners interested in licensing and for technical cooperation for the future technological development.

Advantages and Innovations

Due to its closed cellular structure, the polyurethane foam used for panels is resistant to water, even salt water, parasites and diluted acids,
The product offers a great level of phonic insulation; the thermal insulation provided by a 10 cm thick wall made of polyurethane foam is the same as the one offered by 15 cm of polystyrene;
The polyurethane foam resists to temperatures between -40 and 100 Celsius degrees and its life is at least 80 years, guaranteed by the producer; - the polyurethane foam panels can also be used as such;
Due to the compactness of the polyurethane foam panels, the time for house building is considerably reduced.
The polyurethane foam panels can also be used for building passive and antiseismic houses due to the above presented advantages.

Stage of Development

Field tested/evaluated

Comments Regarding Stage of Development

The FFB modular elements have been successfully used in building ecological houses in Romania and their resistance and insulation characteristics have been confirmed.

IPR Status

Patents granted

Comment Regarding IPR status

Patents granted in Romania, Austria and France.

Profile Origin

Other

Keywords

Technology

02006001	Materials, components and systems for construction

Market

09007001	Construction companies
09007002	Manufacture of construction materials, components and systems

NACE

F.41.2.0	Construction of residential and non-residential buildings

Network Contact

Issuing Partner

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Open for EOI : Yes

Dissemination

Send to Sector Group
Sustainable Construction

Client

Type and Size of Organisation Behind the Profile

Industry SME 11-49

Year Established
0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken
English

Client Country
Romania

Partner Sought

Type and Role of Partner Sought

Type and role of partner sought: industrial partner interested in licensing and manufacturing FFB modular elements.
Specific area of the partner: building sector.
Task to be performed by the partner sought: production of FFB modular elements under license agreement.

Type and Size of Partner Sought

SME 11-50

Type of Partnership Considered

License agreement
Technical cooperation agreement