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Published:

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(54) Title: A PRODUCT FOR PROVIDING HEAT INSULATION ON THE OUTER SIDINGS OF THE BUILDINGS AND A METHOD OF MOUNTING THEREOF

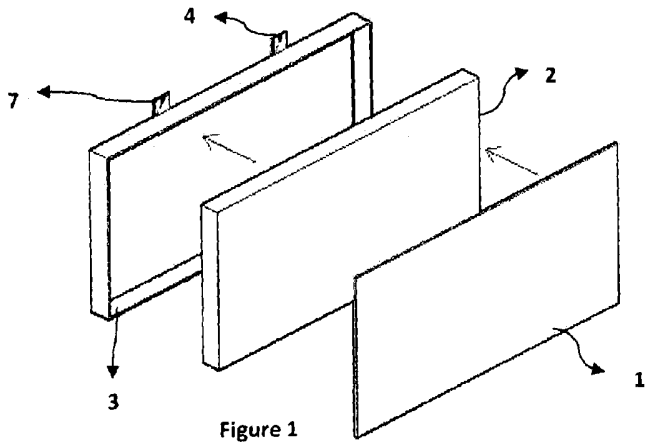

Figure 1

(57) Abstract: The present invention relates to a product to be used on the outer sidings of the buildings, providing heat insulation, possible to be applied without profile and providing a tile-covered facade as its apparent front surface is tile, and to the mounting method thereof. The product (5) according to the present invention is a one-piece (monolithic) structure comprising insulation material (2), surrounding wall (3) surrounding the insulation material, tile (1) on its front surface, and anchorage elements (4) located at the backmost surface of the surrounding wall (3) for providing mechanical mounting. It is possible that the tile (8) located on the outer front surface of the product be made of ceramic or plastic, wooden, glass, metal, aluminium, aluminium composite, granite, natural stone, marble, laminate, vinyl, pressed brick, flakeboard or composite materials or a different material appropriate for outer sidings, and also it is possible to use these materials within the present invention. The product is mounted both by being adhered from its rear surface and also by being located on the mounting surface through the anchorage elements (4) located on its rear part.

WO 2013/058720 A1

DESCRIPTION

A PRODUCT FOR PROVIDING HEAT INSULATION ON THE OUTER SIDINGS OF THE BUILDINGS AND A METHOD OF MOUNTING THEREOF

Subject of the Invention

The present invention relates to a product to be used on the outer sidings of the buildings, providing heat insulation, possible to be applied without profile and providing a tile-covered facade as its apparent front surface is tile, and to the mounting method thereof.

Present State of the Art

In the embodiments according to the state of the art, when the similar siding materials are used in the building facades, curtain walls are created by using ceramic plate, aluminum plate derivatives or other siding materials by means of profiled mounting method on condition that the gap that the profile has created will be covered with a heat insulation material or curtain walls are created by means of providing exterior thermal sheating by using heat insulation material, plaster, last layer covering plaster and external wall paint and at the same time heat insulation is provided.

As it wastes time to obtain the materials to be used for insulation in the embodiments according to the state of art one by one and to mount them during the application in the building site, it also causes some quality problems and additional costs along with some functional loss.

Description of the Figures

Figure 1: A view of the product elements according to the present invention

Figure 2: A view of the product montage according to the present invention

Figure 3: A view when the product according to the present invention is mounted on the surface

Description of the References:

1: Tile

2: Insulation material

3: Surrounding wall

4: Anchorage

5: Product

6: The surface on which the mounting process takes place

7: The holes on the anchorage elements

Description of the Invention

The present invention relates to a product to be used on the outer sidings of the buildings, providing heat insulation, possible to be applied without profile and providing a tile-covered facade as its apparent front surface is tile, and to the mounting method thereof.

The present invention ends the requirement that different materials are mounted one by one after having been obtained for providing insulation for the buildings. Therefore building heat insulation is provided by means of only one single product. Moreover although it is mounted without using profile, an outer siding having a longer physical life than that of a building generally is made possible as the apparent outer siding is made of ceramic or other materials that can be used on outer sidings of the buildings.

The product (5) according to the present invention is a one-piece (monolithic) structure comprising a tile (1) on its outer front surface, insulation material (2) located inside the wall on the rear part of the tile (1), surrounding wall (3) surrounding the insulation material and anchorage elements (4) located on the surrounding wall on the most rear surface of the product to provide the montage of the product mechanically. When ceramic tile is used on the front surface of the product according to the present invention, flexible facade designs become possible as the ceramic can be used in different sizes and colours. The used surrounding wall is a reinforced concrete structure, and within the present invention, it is also possible, for the surrounding wall to be made of a different material.

It is possible that the tile (8) located on the outer front surface of the product can be made of ceramic and also can be made of plastic, wooden, glass, metal, aluminum, aluminum composite, granite, natural stone, marble, laminate, vinyl, pressed brick, flakeboard or

composite materials or a different material appropriate for outer sidings, and also it is possible to use these materials within the present invention.

Although the product (5) according to the present invention is thinner, it can provide insulation which is normally obtained by using several materials. The detailed view of the product according to the present invention is shown in Figure 1. The tile (1) is located on the outer front surface of the product (5), and moreover as it has been mentioned above, within the present invention, the tiles made of different outer siding materials other than ceramic can also be used on the outer front surface of the product. Extrude polystyrene (XPS) or polyurethane-based insulation material (2) are located on the rear part of the tile (1). The insulation material (2) is located within the surrounding wall in a way that one of its surface is covered with tile, while all of its other surfaces and edges are surrounded by the surrounding wall (3). The product (5) is a one-piece (monolithic) structure comprising anchorage elements on its rear surface, the front surface of which is covered with tile, while all the other edges and surfaces are surrounded by the surrounding wall.

The products (5) developed within the present invention are mounted on the mounting surface (6) in a way that their front surfaces will be tile and they will be in contact with each other. The product (5) according to the present invention is provided to be adhered on the wall/surface (6) with a cement-based adhesive to be applied totally on its rear surface, and to be mounted mechanically onto the mounting surface or wall (6) by fixing wall plugs from the holes (7) on the anchorage elements (4) positioned on the upper part. After applying adhesive on the rear surface of the product (5) and adhering it to the mounting surface (6), the mounting surface/wall is pierced through the anchorage holes (7) and wall plugs are located on the wall surface from these holes. The used wall plugs can be the plastic wall plugs of the sheating, however it is also possible to carry out the mechanical montage of the product by mounting it onto the surface (6) by using anchorage elements by means of classical wall plug and screw. Other than being adhered onto the wall/surface by means of an adhering paste, the mounting of the product (5) onto the wall or surface from its anchorage elements allows the mechanical montage as well as adhesion. In Figure 3, the product (5) is shown as is mounted to the wall.

CLAIMS

1. A product developed for providing heat insulation on the outer sidings of the buildings and for creating a tile-covered curtain wall at the same time, comprising;
- tile (1) on the outer front surface
- insulation material (2) located inside the surrounding wall (3) and on the rear part of the tile (1)
- surrounding wall (3) surrounding the insulation material (2)
- anchorage elements (4) located at the backmost surface of the surrounding wall (3) in a way that they overflows upwards.

2. The product (5) according to claim 1, characterized in being a one-piece (monolithic) structure comprising tile (1) on its front surface, insulation material (2) on the rear part of the tile, surrounding wall (3) surrounding the insulation material (2) and anchorage elements (4) located at the backmost surface of the surrounding wall (3).

3. A method for mounting the product (5) to be used on the outer sidings of the buildings according to Claim 1, comprising the following steps;

   - adhering the product onto the mounting surface by applying a cement-based adhesive on the rear surface of the product
   - piercing the mounting surface through the holes (7) on the anchorage elements (4) positioned at the backmost surface of the surrounding wall
   - mounting the product mechanically onto the surface (6) through the said holes with wall plugs or by means of classical wall plugs and screwing

4. A method for mounting the product (5) to be used on the outer sidings of the buildings according to Claim 3, characterized in that the product is both adhered onto the wall/surface with an adhesive applied on the rear part of the product and is fitted onto the wall through the holes created on the mounting surface (6) through the holes (7) on the anchorage elements (4) or with classical wall plugs and screwing method through the said holes.

5. The product according to the preceding claims, characterized in that the tile (1) located on the front surface is ceramic.

6. The product according to the preceding claims, characterized in that tile (1) located on the front surface is made of plastic, wooden, glass, metal, aluminium, aluminium composite, granite, natural stone, marble, laminate, vinyl, pressed brick, flakeboard or composite materials or a different material appropriate for outer sidings.

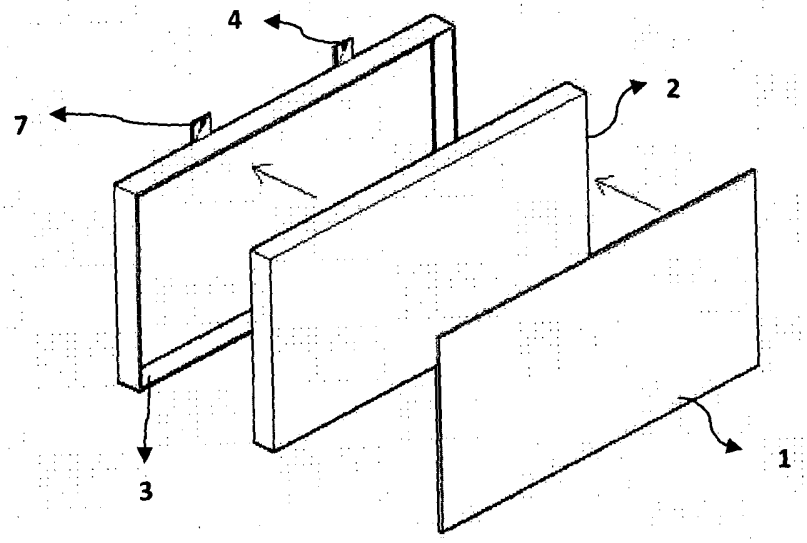

Figure 1

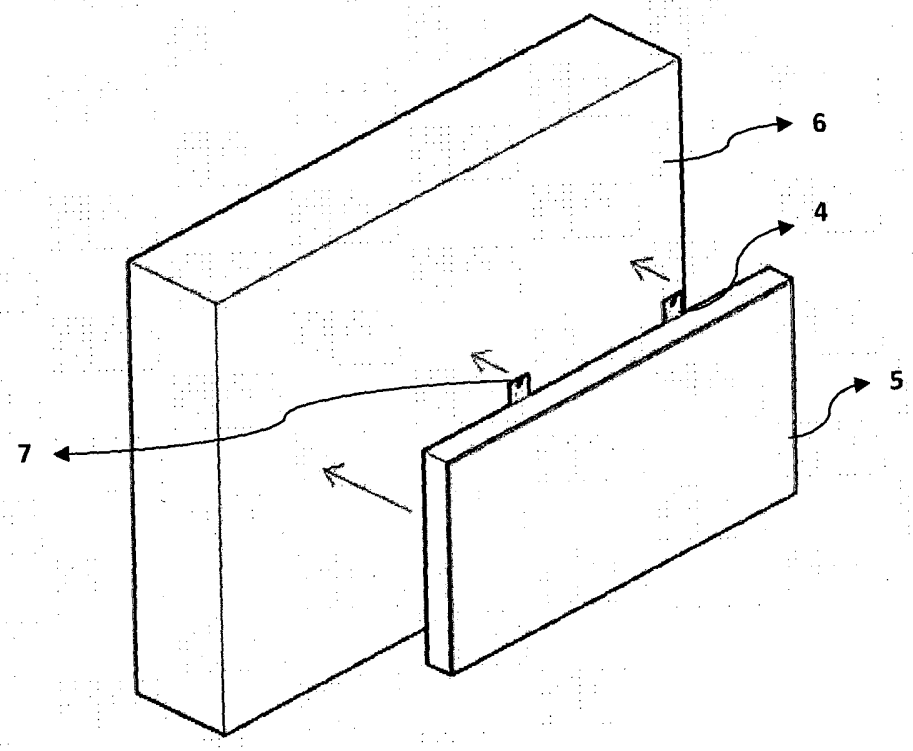

Figure 2

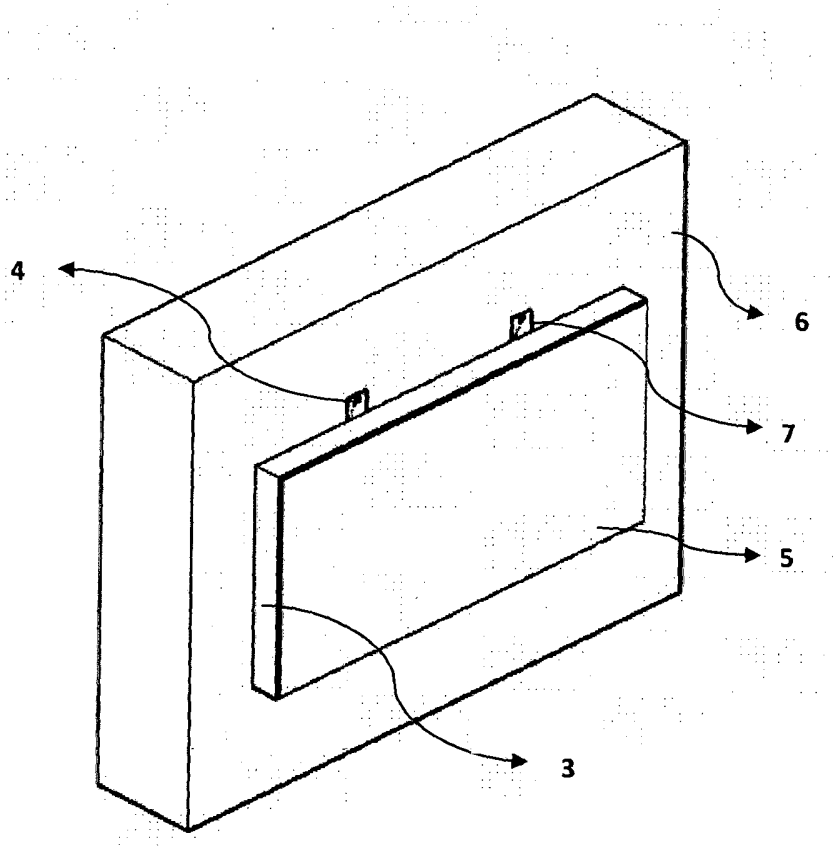

Figure 3

INTERNATIONAL SEARCH REPORT

International application No
PCT/TR2012/000045

A. CLASSIFICATION OF SUBJECT MATTER
INV. E04F13/14
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E04F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 200 414 099 Y1 (YONG-JIN AHN [KR]) 17 April 2006 (2006-04-17) the whole document -----	1,2,5,6
X	DE 42 28 803 A1 (KERSTEN B WERNER [DE]; BIESTERFELDT PETER [DE]) 13 January 1994 (1994-01-13) column 3, lines 11-19, 53-59; figures 1,3 column 5, lines 50-56; figure 5 -----	1,2,5,6
X	FR 2 885 376 A1 (DINAC SOC PAR ACTIONS SIMPLIFI [FR]) 10 November 2006 (2006-11-10) page 13, line 19 - page 14, line 29; figures 1,2,6 -----	3,4

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 June 2012	25/06/2012

Name and mailing address of the ISA/	Authorized officer
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1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/TR2012/000045

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 200414099 Y1	17-04-2006	NONE	
DE 4228803 A1	13-01-1994	NONE	
FR 2885376 A1	10-11-2006	NONE	