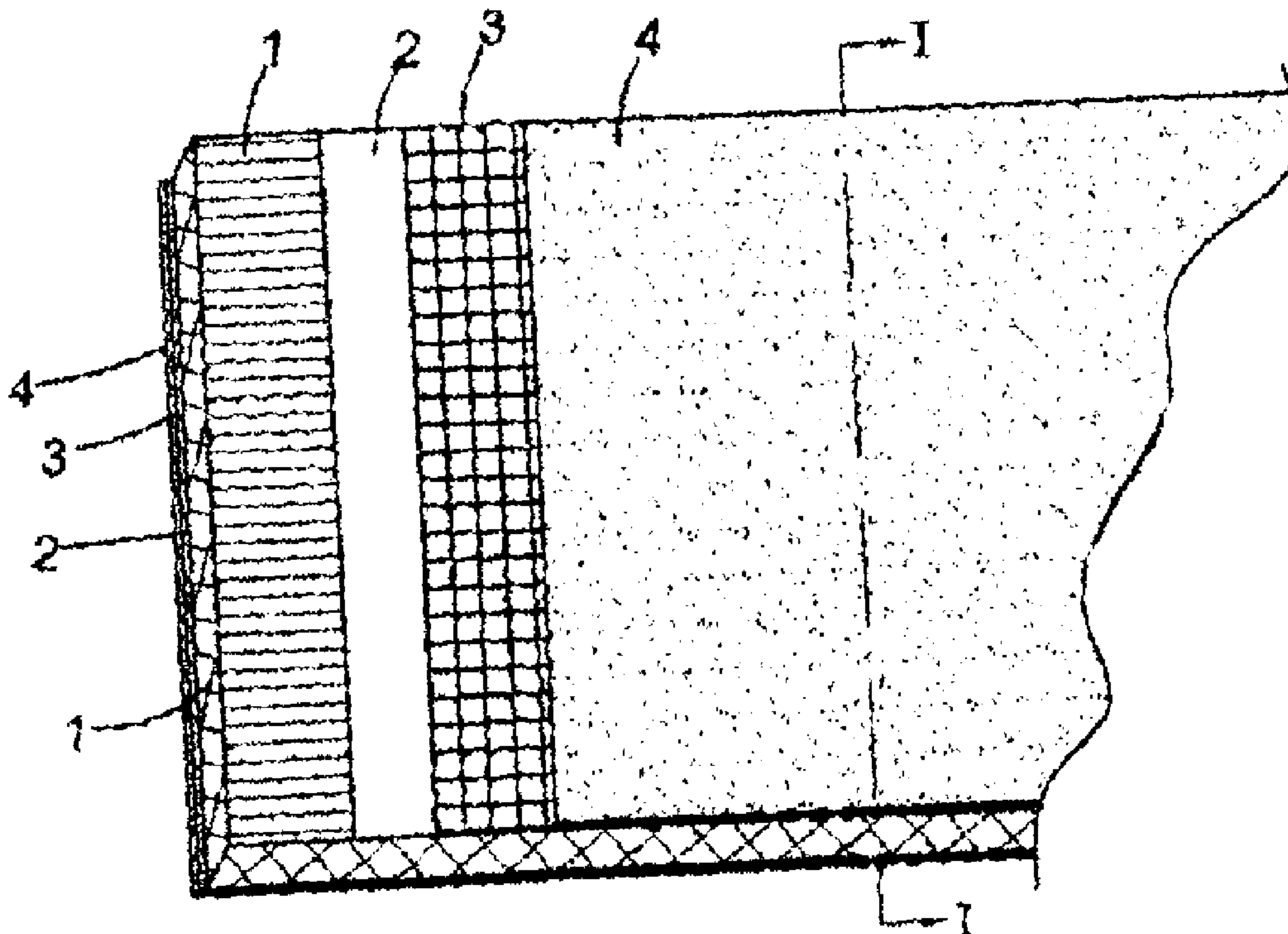




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(54) Titre : PANNEAU DE CONSTRUCTION SERVANT DE SUPPORT POUR BARDAGE DES SURFACES DE CARREAUX DE CERAMIQUE, D'UN OUVRAGE EN STUC OU DE MORTIER APPLIQUE A LA TRUELLE EN COUCHE MINCE, OU BIEN SUR DES BATIMENTS OU A L'INTERIEUR DE CEUX-C
(54) Title: BUILDING BOARD FOR USE AS A CARRIER FOR A SURFACE CLADDING OF CERAMIC TILES, A STUCCO, OR A THIN-LAYER TROWEL MORTAR, ON OR IN BUILDINGS



(57) Abrégé/Abstract:

A building board is proposed as a carrier for a surface cladding of ceramic tiles, a stucco, or a thin-layer trowel mortar, on or in buildings, in which a moisture-resistant foam-material core layer is covered with a nonwoven fabric layer on both sides, whereby first, a paper web or thin plastic-film web 2 is glued onto the foam-material core layer 1, onto which web a web 4 of nonwoven fabric or a knitted or loom-knitted woven fabric is glued.



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Abstract

A building board is proposed as a carrier for a surface cladding of ceramic tiles, a stucco, or a thin-layer trowel mortar, on or in buildings, in which a moisture-resistant foam-material core layer is covered with a nonwoven fabric layer on both sides, whereby first, a paper web or thin plastic-film web 2 is glued onto the foam-material core layer 1, onto which web a web 4 of nonwoven fabric or a knitted or loom-knitted woven fabric is glued.

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Building board for use as a carrier for a surface cladding of ceramic tiles, a stucco, or a thin-layer trowel mortar, on or in buildings

Building boards for the stated use are known, in which a board of moisture-resistant foam material is coated on both sides with cement mortar and a coarse-mesh woven fabric lattice, to provide the necessary reinforcement.

Building boards are also known from DE 92 00 687.6 U1, in which the foam-material core layer consists of polyurethane, having a closed-cell outer skin, approximately having a thickness of 25 mm. A web of fiberglass nonwoven fabric is foamed in on the visible side of this foam-material core layer, whereby the foam material penetrates through the nonwoven fabric web.

A similar building board, as a sandwich component, is known from DE 19 27 794 U, in which a nonwoven fabric web is also foamed in onto the foam-material core layer. In this connection, another web of an air-permeable and water vapor-permeable material can be disposed between the cover layers of nonwoven fabric and the foam-material core layer, for example made of a mesh structure or a network, whereby this intermediate layer can be glued on.

An insulation panel, particularly for covering an outside wall of a building, or as a tile carrier in wet-cell construction, is also known from DE 199 40 423 C2; it has a panel-shaped insulation material layer of a foamed-on or cast insulation material, whereby a woven nonwoven fabric is foamed in or cast in at the surface, on one or both sides of this foam-material core layer, as a carrier material for an exterior stucco or a tile mortar, which material itself forms a cover layer.

Multi-layer laminates are known from FR 2 351 784, consisting of a stretchable plastic resin layer having a thermoplastic resin layer, which does not stretch or stretches only slightly, applied on both sides, which layer in turn is covered with a third layer, in each instance. In this connection, this third layer can consist of plastic, woven fabric or paper. The stretchable core layer can consist of foamed polystyrene. However, these are laminates that are not capable of support, such as those used for lining furniture, vehicles, etc.

All known building boards, which are used in the interior and exterior region of buildings, but preferably in moisture areas such as bathrooms or the like, are supposed to form a moisture-resistant substrate, capable of supporting, for the subsequent

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- surface claddings, such as tiles, for example. They replace usual sheetrock panels, panels made of wood materials, or plaster coatings, which are not considered to be moisture-resistant. The disadvantage of such building boards, which are
- 5 either cement-coated or also covered with nonwoven fabric, is that these distort or warp before being installed, particularly in the case of moisture impact from one side, and therefore make plane-parallel installation on walls impossible, in some instances.
- 10 Some embodiments of the invention may provide building boards on the basis of foam-material boards, as moisture-resistant carriers for surface claddings on or in buildings, which do not demonstrate the disadvantage of distortion in the case of unintentional moisture impact, while having sufficient bending
- 15 resistance.

According to an aspect of the present invention, there is provided a building board adapted for use as a carrier for a surface cladding of ceramic tiles, a stucco, or a thin-layer trowel mortar, on or in buildings, the building board

20 comprising: a moisture-resistant foam-material core layer, wherein on said core layer there is glued on both sides a water-resistant paper web or non-stretchable plastic-film web, onto which webs in each case a web of nonwoven fabric or of a knitted or loom knitted woven fabric is glued to form an

25 adhesion base for the cladding, and wherein the water-resistant paper or non-stretchable plastic-film webs reinforce the foam-material core layer to resist at least one of distortion and warping.

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By means of directly gluing paper webs or thin, non-stretchable plastic webs onto both sides of the foam-material core layer, the building board covered in such a manner becomes unchangeable in length even in case of unintentional moisture impact, since the glued-on water-resistant paper web or the non-stretchable plastic

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web cannot change in length. The board, therefore, cannot altogether distort or warp. Subsequently, a web of nonwoven fabric or a knitted or loom-knitted woven fabric is glued onto this foam-material core layer with the glued-on layer; this web then forms the suitable carrier, as an adhesion base for the adhesive of a surface cladding or ceramic tiles, a stucco, or a thin-layer trowel mortar. The building boards according to the invention are therefore also blocked from moisture impact with regard to their foam-material core layer. In particular, building boards having a low thickness, essentially below 50 mm, are reinforced to a particular degree.

An additional reinforcement can take place by means of the installation of a coarse-mesh lattice or of a coarse-mesh woven fabric between paper or plastic-film web and nonwoven fabric web.

Nonwoven fabrics are understood to be textile surface structures as interlaid scrims or individual fibers or threads. In contrast to this, woven fabrics, knitted fabrics, and loom-knitted fabrics are produced from regularly disposed threads or yarns. Felts are included among nonwoven fabrics.

In order to make the foam-material core layer that is used particularly moisture-resistant, it is preferred to use a closed-cell foam material. In the case of particular demands with regard to the bearing capacity and bending resistance, the foam-material core layer can consist of multiple layers glued and/or bonded to

one another, which are preferably disposed crosswise to one another, in each instance.

In the following, the invention will be explained in greater detail using an exemplary embodiment that is shown. The figures show:

Fig. 1: in a schematic, perspective view, the structure of a building board

and

Fig. 2: a section along the line I-I in Fig. 1.

The core of the building board is formed by a moisture-resistant foam-material core-layer board 1, preferably of a polystyrene, having a closed-cell foam structure. A water-resistant paper sheet 2 or a non-stretchable plastic film is glued onto both sides of this foam-material core layer 1. Onto this, in turn, a web 3 of a lattice material or woven fabric material is applied. On this, a nonwoven fabric web 4 is glued on, using a suitable adhesive, or laminated on. All the webs 2, 3, and 4 reinforce the building board, and prevent changes in length and warping of the

building board, which has a sandwich-like structure, when influences of moisture occur. In this connection, the adhesives that are used also do not change as the result of moisture influences, after they have hardened.

A building board according to the invention is also sufficiently bending-resistant for installation. It is furthermore sufficiently bending-resistant to bridge the free interstices when installed on a stud frame, for example for interior walls.

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CLAIMS:

1. Building board adapted for use as a carrier for a surface cladding of ceramic tiles, a stucco, or a thin-layer trowel mortar, on or in buildings, the building board

5 comprising:

a moisture-resistant foam-material core layer,

wherein on said core layer there is glued on both sides a water-resistant paper web or non-stretchable plastic-film web, onto which webs in each case a web of nonwoven fabric
10 or of a knitted or loom-knitted woven fabric is glued to form an adhesion base for the cladding, and

wherein the water-resistant paper or non-stretchable plastic-film webs reinforce the foam-material core layer to resist at least one of distortion and warping.

15 2. Building board according to claim 1, wherein a web of a lattice material or of a woven fabric material is attached between at least one of the paper or plastic-film webs and the nonwoven fabric web.

3. Building board according to claim 1 or claim 2,
20 wherein the foam-material core layer comprises a closed cell foam material.

4. Building board according to one of claims 1 to 3, wherein the foam-material core layer comprises multiple layers, the multiple layers at least one of glued and bonded to one
25 another.

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5. Building board according to claim 4, wherein the multiple layers of the foam-material core layer are disposed crosswise to one another.

6. Building board according to one of claims 1 to 5,
5 wherein adhesives used for gluing are moisture-resistant after hardening.

