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(54) **Protective skirting board**

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**AU-B2- 720 739 CH-A- 527 339
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DE-U1- 29 904 194 GB-A- 1 292 450
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Description

[0001] The present invention firstly relates to a protective skirting board comprising a board core provided with a protective layer. Secondly, the present invention relates to a method for manufacturing a protective skirting board of this type.

[0002] The present invention relates in particular to a protective and/or decorative element for inter alia hygienic surroundings, as known, for example, in the foods industry and laboratory environments, in which the protective layer is made of stainless steel. The prime area of application is the protection of floors and walls, but also extends to corridors, demarcated zones, bordering garden paths, etc. The shape of the protective skirting board (element) or decorative element according to the invention can be modified depending on the application.

[0003] It is known, for example, to provide protective skirting boards at the transition between the wall and the floor in order to protect, for example, the lower side of walls mechanically against shock and impact by trolleys, pallet trucks, forklift trucks and the like.

[0004] The known conventional protective skirting boards are made of concrete. As skirting board made of concrete has the drawback that concrete may crumble, it is provided on the outer periphery with a layer of stainless steel in order to provide a hygienic finish and aesthetic appearance. As it is known that concrete and stainless steel do not adhere to one another or only with great difficulty when joined to one another in a simple manner, such skirting boards have the drawback that the layer of stainless steel will come away from the concrete over time. Document CH 527 339 describes a protective skirting board comprising a board core made of concrete and provided with a protective layer (sheet metal foil), which is chemically anchored to the concrete core.

[0005] Providing physical anchor points, as described in DE 43 40 953, offers a partial solution to the above-mentioned problem. However, with this solution, the stainless steel protective layer will only adhere to the concrete at the physical anchor points and it will not form a single unit with the concrete between the anchor points, which may result in the stainless steel coming away from the concrete core upon impact.

[0006] GB 1 292 450 describes a structural building unit comprising a slab-shaped body of concrete and a flexible metal sheet having a face thereof bonded to a face of the body and serving to reinforce the body, said body and sheet being bonded together by means of an adhesive layer between the adjacent faces of the body and sheet.

[0007] It is an object of the invention to provide a durable decorative element or protective skirting boards.

[0008] The object of the invention is achieved by providing a protective skirting board as defined in claim 1.

[0009] Anchoring the protective layer both physically and chemically to the board core results in a durable protective skirting board. The protective layer is preferably

made of stainless steel.

[0010] According to a more preferred embodiment of the protective skirting board according to the present invention, the protective layer comprises at least one end which extends into the board core in order to physically anchor the board core and the protective layer to one another.

[0011] The board core comprises a settable material, said settable material being concrete.

[0012] According to a particularly advantageous embodiment of the protective skirting board according to the present invention, the board core comprises reinforcement bars made of plastic and/or metal.

[0013] Another subject-matter of the present patent application relates to a method for manufacturing a protective skirting board as defined in claim 4.

[0014] The method according to the invention relates in particular to a method for manufacturing a protective skirting board as described above.

[0015] In order to illustrate the features of the present invention further and to explain the additional advantages and characteristics thereof, a more detailed description of a protective skirting board or decorative element according to the invention and the method for manufacturing such a skirting board or decorative element is given below. It will be clear that nothing in the description which follows should be interpreted as a limitation of the scope of protection requested in the claims.

[0016] In this description, reference numerals are used to refer to the attached drawings, in which:

- Figs. 1, 2 and 3 represent different embodiments of the protective skirting board according to the invention.

[0017] The protective skirting board (1) or decorative element according to the invention and as illustrated in the attached figures comprises a board core (2) provided with a protective layer (3) which, for hygienic and/or aesthetic reasons, is made of stainless steel. The protective layer (3) is provided on the visible side of the skirting board and on at least one side edge.

[0018] The purpose of the protective skirting board (1) according to the invention is, inter alia, to protect walls, floors, corridors and the like against shock or impact by, for example, trolleys or forklift trucks. It is obvious that the protective skirting board (1) according to the invention can also be used for other purposes, such as for example as a decorative element for demarcating zones or bordering garden paths.

[0019] The protective skirting board (1) according to the invention has several advantages, in particular it meets the hygiene standards, is water-repellent, is chemically resistant, is easy to install and is very sturdy and decorative.

[0020] According to the present invention, the protective layer (3) is both physically and chemically anchored to the board core (2) in order thus to produce a durable

product.

[0021] The board core (2) is made of high-quality concrete with a high cement content, low shrinkage and low water absorption. The concrete is provided with a plasticizer which reduces the addition of water to a minimum. In addition, the board core (2) may be reinforced by providing reinforcement bars (5) made of metal or plastic and additionally with polypropylene fibres.

[0022] The protective layer (3) is chemically anchored to the board core (2) by means of an adhesive layer. The adhesive used comprises modified silane (SiH_4) molecules. The adhesive connection is achieved by the fact that water (e.g. atmospheric humidity or water in concrete) reacts (polymerization) with the silane compounds. Such an adhesive is also referred to as SMP (Silyl-Modified Polymer, also known as MS polymer adhesive (Modified-Silane Polyether)).

[0023] The protective layer (3) is not only chemically anchored to the board core (2), but also physically. To this end, the protective layer (3) is formed in such a manner that at least one end (4) extends into the board core (2).

[0024] The protective skirting board (1) according to the invention is manufactured by means of a continuous production process in which the stainless steel protective layer (3) is placed in a pre-formed die, following which a board core (2) is formed by pouring concrete into said die (the die may be made to vibrate while the concrete is being poured in, in order to achieve a homogeneous core with a minimum of air bubbles). According to the present invention, an MS polymer adhesive is applied to the protective layer (3) before the concrete is provided into the die in order to chemically anchor the protective layer (3) to the board core (2).

[0025] The above method results in a protective skirting board (1) having a high compressive strength and a high bending strength.

Claims

1. Protective skirting board (1) comprising a board core (2) made of concrete as a settable material and provided with a protective layer (3), which is physically anchored to the board core (2), **characterized in that** the protective layer (3) is also chemically anchored to the board core by means of an adhesive layer comprising modified silane molecules.
2. Protective skirting board (1) according claim 1, **characterized in that** the protective layer (3) comprises at least one end (4) which extends into the board core (2) in order to physically anchor the board core (2) and the protective layer (3) to one another.
3. Protective skirting board (1) according to one of the preceding claims, **characterized in that** the board core (2) comprises reinforcement bars (5) made of

plastic and/or metal.

4. Method for manufacturing a protective skirting board (1), in which a protective layer (3) is placed in a pre-formed die, following which a board core (2) is formed by providing a settable material in said die, said settable material being concrete so that a protective skirting board (1) having a protective layer (3) is formed after the setting process, **characterized in that**, that an adhesive layer comprising modified silane molecules is applied to the protective layer (3) before the settable material is provided in order to chemically anchor the protective layer (3) to the board core (2).
5. Method according to Claim 4, **characterized in that** the method is intended for manufacturing a protective skirting board (1) according to one of Claims 1 to 3.

Patentansprüche

1. Schutzsockelleiste (1), umfassend einen Leistenkern (2), der aus Beton als abbindbares Material hergestellt ist und mit einer Schutzschicht (3) versehen ist, die physikalisch am Leistenkern (2) verankert ist, **dadurch gekennzeichnet, dass** die Schutzschicht (3) außerdem mithilfe einer Haftschrift, die modifizierte Silanmoleküle umfasst, chemisch am Leistenkern verankert ist.
2. Schutzsockelleiste (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Schutzschicht (3) zumindest ein Ende (4) umfasst, das zum physikalischen Verankern des Leistenkerns (2) und der Schutzschicht (3) aneinander in den Leistenkern (2) verläuft.
3. Schutzsockelleiste (1) nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** der Leistenkern (2) Verstärkungsstäbe (5) umfasst, die aus Kunststoff und/oder Metall hergestellt sind.
4. Verfahren zum Fertigen einer Schutzsockelleiste (1), wobei eine Schutzschicht (3) in einem vorgeformten Formwerkzeug angeordnet wird, wonach ein Leistenkern (2) durch Vorsehen eines abbindbaren Materials in dem Formwerkzeug ausgebildet wird, wobei das abbindbare Material Beton ist, so dass nach dem Abbindungsprozess eine Schutzsockelleiste (1) mit einer Schutzschicht (3) ausgebildet ist, **dadurch gekennzeichnet, dass** eine Haftschrift, die modifizierte Silanmoleküle enthält, auf die Schutzschicht (3) aufgebracht wird, bevor das abbindbare Material vorgesehen wird, um die Schutzschicht (3) chemisch am Leistenkern (2) zu verankern.

5. Verfahren nach Anspruch 4, **dadurch gekennzeichnet, dass** das Verfahren zum Fertigen einer Schutzsockelleiste (1) gemäß einem der Ansprüche 1 bis 3 ausgelegt ist.

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Revendications

1. Plinthe protectrice (1) comprenant une âme de plaque (2) faite de béton en tant que matière pouvant durcir et munie d'une couche protectrice (3), qui est physiquement ancrée à l'âme de plaque (2), **caractérisée en ce que** la couche protectrice (3) est également ancrée de façon chimique à l'âme de plaque au moyen d'une couche adhésive comprenant des molécules de silane modifiées. 10 15
2. Plinthe protectrice (1) selon la revendication 1, **caractérisée en ce que** la couche protectrice (3) comprend au moins une extrémité (4) qui s'étend dans l'âme de plaque (2) afin de physiquement ancrer l'âme de plaque (2) et la couche protectrice (3) l'une à l'autre. 20
3. Plinthe protectrice (1) selon une des revendications précédentes, **caractérisée en ce que** l'âme de plaque (2) comprend des barres de renfort (5) faites de plastique et/ou de métal. 25
4. Procédé pour fabriquer une plinthe protectrice (1), dans lequel une couche protectrice (3) est placée dans une matrice préformée, après quoi une âme de plaque (2) est formée en fournissant une matière pouvant être durcie dans ladite matrice, ladite matière pouvant être durcie étant du béton de sorte qu'une plinthe protectrice (1) ayant une couche protectrice (3) est formée après le processus de durcissement, **caractérisé en ce qu'**une couche adhésive comprenant des molécules de silane modifiées est appliquée à la couche protectrice (3) avant que l'on ne fournisse la matière pouvant durcir pour ancrer de façon chimique la couche protectrice (3) à l'âme de plaque (2). 30 35 40
5. Procédé selon la revendication 4, **caractérisé en ce que** le procédé est destiné à fabriquer une plinthe protectrice (1) selon une des revendications 1 à 3. 45

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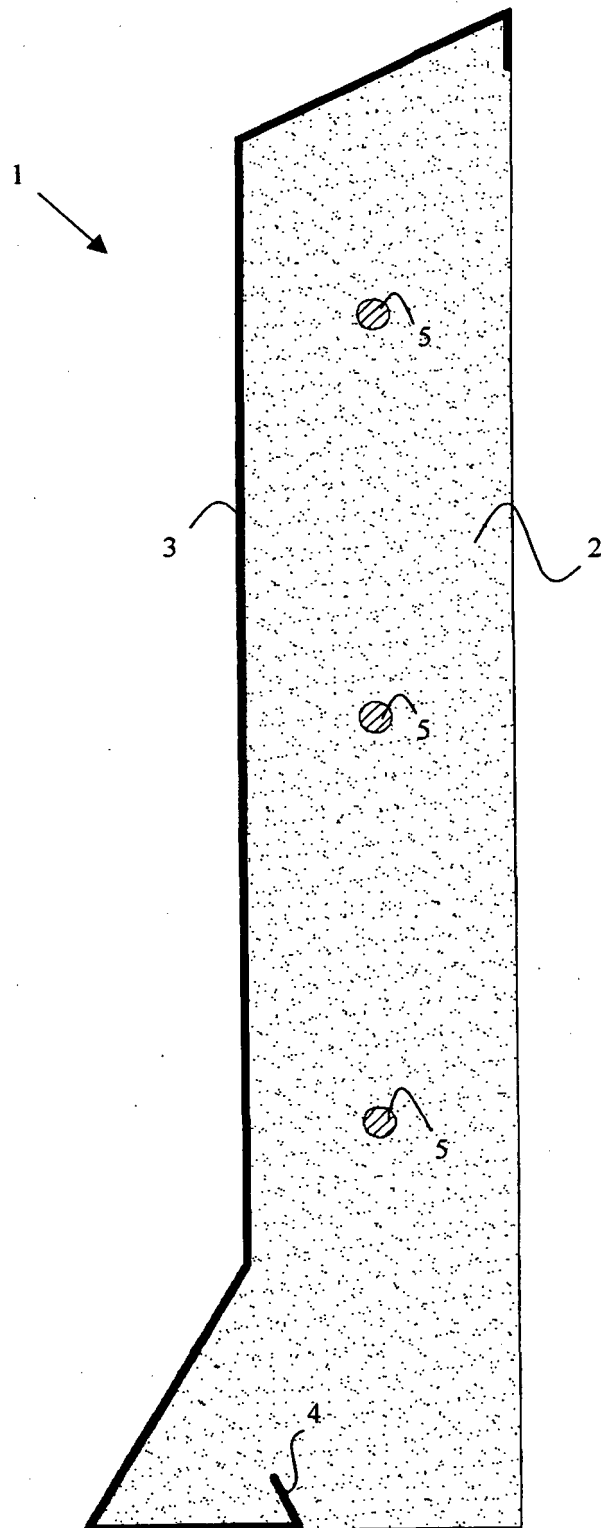


Fig. 1

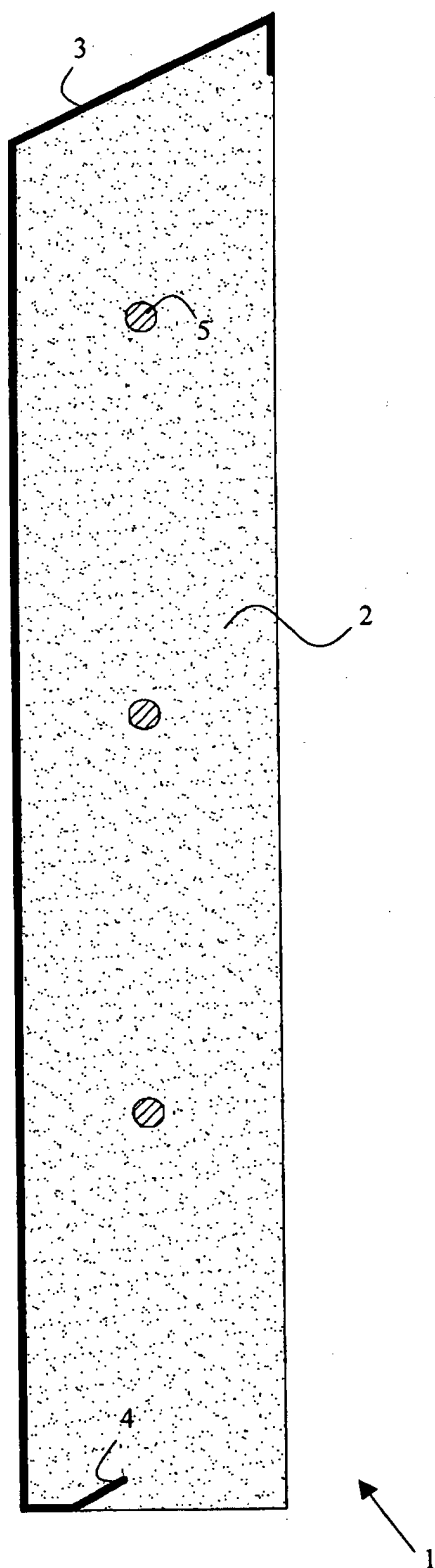


Fig. 2

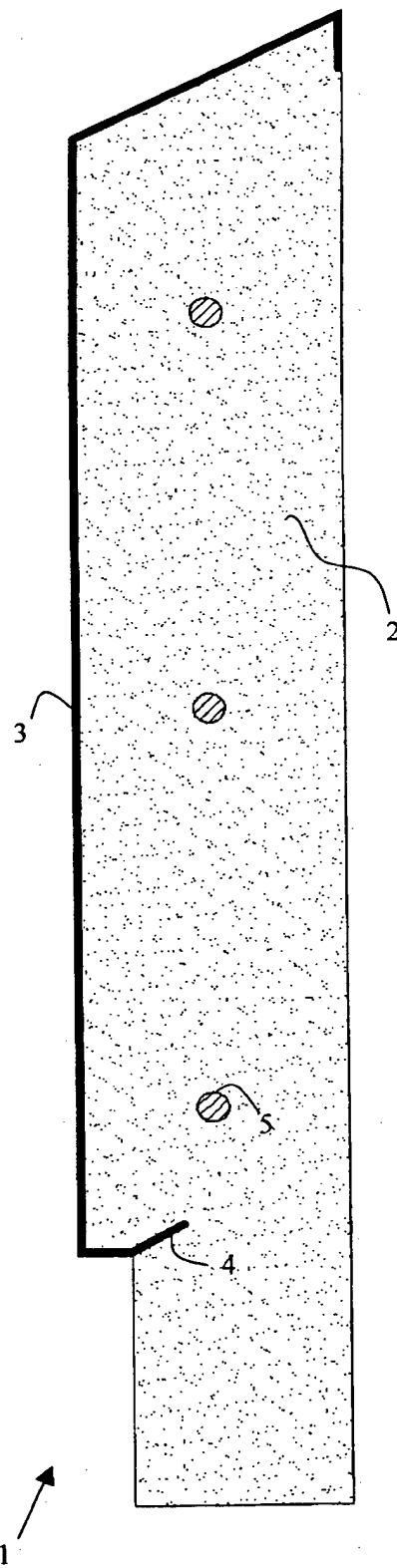


Fig. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CH 527339 [0004]
- DE 4340953 [0005]
- GB 1292450 A [0006]