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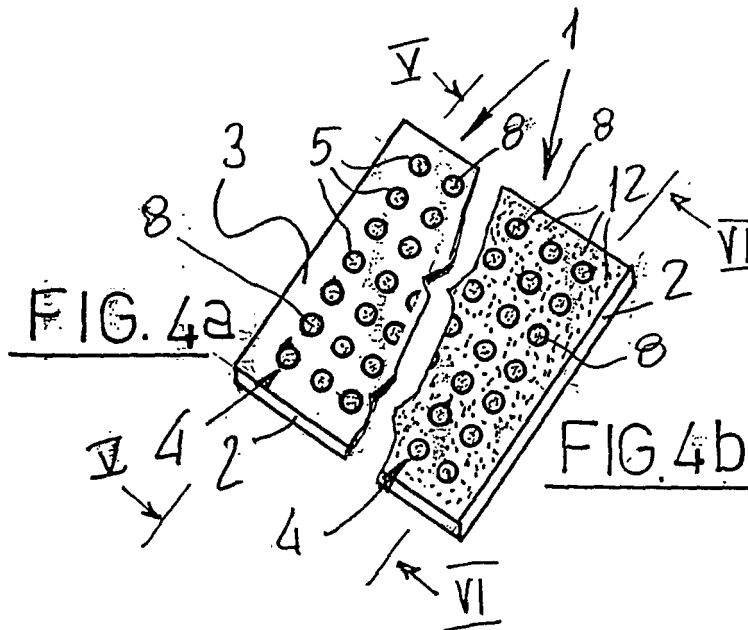
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(54) **Anti-slip product**

(57) The anti-slip product (1) comprises : a body (2) having a walk-on surface (3); first anti-slip means (4) in bas-relief/high-relief defined in said walk-on surface (3)

and turned in a walk-on direction; respective walk-on portions (7) defined in said first anti-slip means (4), said respective walk-on portions (7) having second anti-slip means (10) turned in said walk-on direction.



## Description

**[0001]** The invention refers to an anti-slip product.

**[0002]** For laying floors, above all when intended for particular collocations such as, for example, swimming pools, bathrooms, toilets and changing-rooms, safety regulations require that the products used to cover walk-on surfaces have pre-established anti-slip characteristics.

**[0003]** Such characteristics are necessary because these floors are often covered with humidity or, even, with lots of water and this can represent a hazard for the people who walk on them.

**[0004]** Above all in the case of swimming-pools, the surrounding floors must provide the normally bare feet of the users with a surface on which to safely adhere even when, coming out of the pool, the water drips off the bodies of the wet persons onto the floor.

**[0005]** According to background art, for these particular needs, the floors are covered with ceramic tiles or plastic tiles, which have a visible surface on which ribs are obtained in relief or sunken, or else swellings, so as to modify the smooth surfaces of the visible faces and create areas of strong adherence for the feet.

**[0006]** Normally, on the visible surfaces, bodies are obtained that are normally cylindrical in shape and with limited height, which extend upwards and which are enough to generate rough anti-slip surfaces.

**[0007]** Another characteristic required from the products to cover the floors in question is that they are able to easily drain off water and permit thorough cleaning using adequate equipment, such as absorbent rags, sponges, brushes, to prevent the accumulation of dirt and the formation of bacteria that could infect the bathers' feet. This state of the art does have several drawbacks.

**[0008]** A first drawback is that the surfaces made rough with grooves, ribs or swellings make careful cleaning very difficult using conventional equipment that removes the dirt by rubbing, such as brushes, cloths or sponges because the action of adherence generated by these rough surfaces strongly prevents their sliding and stops them from loading up with dirt and conveying it away; consequently, the dirt tends to fall off once it has been captured and to stagnate, above all in the corners that form between the flat surfaces of the tiles and the elements that are obtained in these, such as ribs in relief, grooves or swellings, to make them rough.

**[0009]** This stagnation generates infective bacteria that can become dangerous for human health, being transmittable through the skin pores or through small wounds or scratches in the skin.

**[0010]** Another drawback is that the drainage of water proves difficult and slowed-down and this also creates the stagnation of volumes of water in which the bacteria proliferate and multiply.

**[0011]** The technical aim of the invention is to improve the state of the art.

**[0012]** An object of the invention is to make an anti-

slip product that permits maintaining a high adherence between the walk-on surfaces of floors and the feet or the footwear of people who walk on these.

**[0013]** Another object of the invention is to make an anti-slip product that permits carrying out the cleaning of the walk-on surfaces in a substantially complete way, eliminating the generation of infective bacteria.

**[0014]** Another object of the invention is to make an anti-slip product that ensures easier and quick drainage of the water so as to avoid this stagnating on the walk-on surfaces. According to an aspect of the invention, an anti-slip product is provided comprising: a body having a walk-on surface; first anti-slip means in bas-relief/high-relief defined in said walk-on surface and turned in a walk-on direction; respective walk-on portions defined in said first anti-slip means, characterized in that said respective walk-on portions have second anti-slip means turned in said walk-on direction.

**[0015]** According to another aspect of the invention an anti-slip product is provided comprising: a body having a walk-on surface; first anti-slip means, in bas-relief/high-relief defined in said walk-on surface and turned in a walk-on direction; respective walk-on portions defined in said first anti-slip means, characterized in that said walk-on surface and said respective walk-on portions have second anti-slip means turned in said walk-on direction.

**[0016]** The anti-slip product thus has a walk-on surface able to provide good adherence for people's feet, even when these are bare and, at the same time, permits removing dirt in a substantially accurate way and easily draining off any liquids that have fallen on it and easily and thoroughly cleaning the walk-on surface of the product.

**[0017]** Further characteristics and advantages will appear even more evident from the description of an embodiment of an anti-slip product, illustrated indicatively by way of non limiting example, in the attached drawings wherein:

Figure 1 is a section view of an anti-slip product according to a first embodiment;

Figure 2 is a section view of an anti-slip product according to a second embodiment;

Figure 3 is a side view in enlarged scale of a portion of the product of Figure 1;

Figure 4a is an interrupted and perspective view in reduced scale, of an anti-slip product, in the first embodiment of Figure 1;

Figure 4b is a perspective view, in reduced scale, of an anti-slip product, in the second embodiment of Figure 2;

Figure 5 is an interrupted section view, taken according to a plane V-V of Figure 4a, in enlarged scale, of a portion of the anti-slip product of Figure 1;

Figure 6 is an interrupted section view, taken according to a plane VI-VI of Figure 4b, in enlarged scale, of a portion of the anti-slip product of Figure 2.

**[0018]** With particular reference to the Figure 1, by 1 is indicated an anti-slip product which comprises a body 2 with flattened shape, such as, for example, a tile or a sheet, and which has a walk-on surface 3 substantially flat and turned upwards, when the anti-slip product 1 is laid on a floor.

**[0019]** In the walk-on surface 3 first anti-slip means 4 are obtained comprising a plurality of bosses which are in relief with respect to the walk-on surface 3 and which have bodies 5 shaped like geometric solids, in the specific case, cylinders all of the same limited heights.

**[0020]** The bodies 5 are distributed on the walk-on surface 3 according to preset patterns and densities, so as to give them more or less accentuated anti-slip characteristics.

**[0021]** With reference to Figure 3, it should be noted that each body 5 comprises a side wall 6 that elevates from the walk-on surface 3 and an upper face 7, generally flat and parallel to the latter.

**[0022]** This face 7 is affected by second anti-slip means 10 that comprise, according to a first possible embodiment, an area affected by high-reliefs or bas-reliefs, such as, for example, a knurling, or a plurality of small teeth, generally indicated by 8.

**[0023]** As shown in the Figures, the side walls 6 are slanted so as to favour the sliding of cleaning equipment, such as, for example, rags, brush bristles and the like, which, in this way, can penetrate between the bodies 5 capturing the dirt and sliding away without the collected dirt being retained by any edges of these.

**[0024]** Between the bodies 5 draining channels 11 are defined which have as bottom the same walk-on surface 3 and by means of which the water that drips onto the anti-slip product 1 can be drained.

**[0025]** The bottom of these channels 11 can be substantially smooth, as indicated in Figure 1, or, according to a second embodiment of the invention, in turn equipped with elements 12 in high-relief or bas-relief, as indicated in the Figure 2, to increase the adhering surface of the anti-slip product 1.

**[0026]** The operation of the anti-slip product 1 is the following: it is placed on a floor to be covered alongside other anti-slip products 1 forming a covered surface.

**[0027]** The total of the small teeth or the knurlings 8 that are obtained in the upper faces 7 of the bodies 5 permits creating an anti-slip walk-on surface which, generally, is slightly raised with respect to the conventional walk-on surface 3 and which alone presents a high adherence able to enable the feet, even when bare and wet, to achieve a good grip and prevent people from slipping dangerously.

**[0028]** Another anti-slip action is in any case obtained by means of the bodies 5 which protrude from the walk-on surface 3.

**[0029]** In the event of its being necessary to obtain a very high coefficient of adherence, as in the case of floors laid in environments particularly prone to causing accidental slipping, it is also possible to equip the same walk-

on surface 3 with its own knurlings or small teeth 12, in addition to those 8 already obtained on the upper faces 7 of the bodies 5.

**[0030]** Furthermore, the presence of the knurlings or the small teeth 8 on the upper faces 7 of the bodies 5 permits curbing the heights of the latter within just a few millimetres with respect to the walk-on surface 3 and this circumstance, together with the fact that the side surfaces 6 of each body 5 are very slanted, permits cleaning the anti-slip products 1 very thoroughly and using the standard equipment used for cleaning, such as, for example, brushes and rags.

**[0031]** In fact, the resistance of the latter to sliding is considerably reduced and the side surfaces 6 permit the bristles of the brushes or the ends of the rags to easily enter the channels 11 and to slide inside these and to exit from these gradually, climbing along the slanted side surfaces 6, trapping the collected dirt and preventing this from falling off due to the movement.

## Claims

1. Anti-slip product (1) comprising : a body (2) having a walk-on surface (3); first anti-slip means (4) in bas-relief/high-relief defined in said walk-on surface (3) and turned in a walk-on direction; respective walk-on portions (7) defined in said first anti-slip means (4), **characterized in that** said respective walk-on portions (7) comprise second anti-slip means (10) turned in said walk-on direction.
2. Anti-slip product (1) comprising : a body (2) having a walk-on surface (3); first anti-slip means (4) in bas-relief/high-relief defined in said walk-on surface (3) and turned in a walk-on direction; respective walk-on portions (7) defined in said first anti-slip means (4), **characterized in that** both said walk-on surface (3) and said respective walk-on portions (7) comprise second anti-slip means (10) turned in said walk-on direction.
3. Product according to claim 1 or 2 wherein said body is shaped like a tile or a sheet (2).
4. Product according to any of the claims from 1 to 3 wherein said first anti-slip means (4) comprise a plurality of bosses (5) which are in relief with respect to said walk-on surface (3).
5. Product according to any of the claims from 1 to 3 wherein said first anti-slip means (4) comprise a plurality of channels (11) obtained in said walk-on surface (3) and defining bosses (5) in relief with respect to said walk-on surface (3).
6. Product according to claim 4 or 5 wherein said bosses have bodies (5) shaped like geometric solids hav-

ing respective side walls (6) that elevate from the walk-on surface (3) and joining with respective walk-on portions (7).

7. Product according to claim 6 wherein said respective side walls (6) are slanted and connected with said walk-on portions (7). 5
8. Product according to any of the claims from 1 to 7 wherein each of said respective walk-on portions comprises a face (7) substantially flat and parallel with said walk-on surface (3). 10
9. Product according to claim 8 wherein each face (7) of said walk-on portions is on the same plane with one another and slightly raised with respect to said walk-on surface (3) in said walk-on direction. 15
10. Product according to any of the claims from 5 to 8 wherein said bodies shaped like geometric solids comprise truncated conical elements (5) with limited height so as to define corresponding channels (11) between each element of said truncated conical elements (5) and adjacent elements. 20  
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11. Product according to claim 9 wherein said channels (11) have said walk-on surface (3) as bottom. 30  
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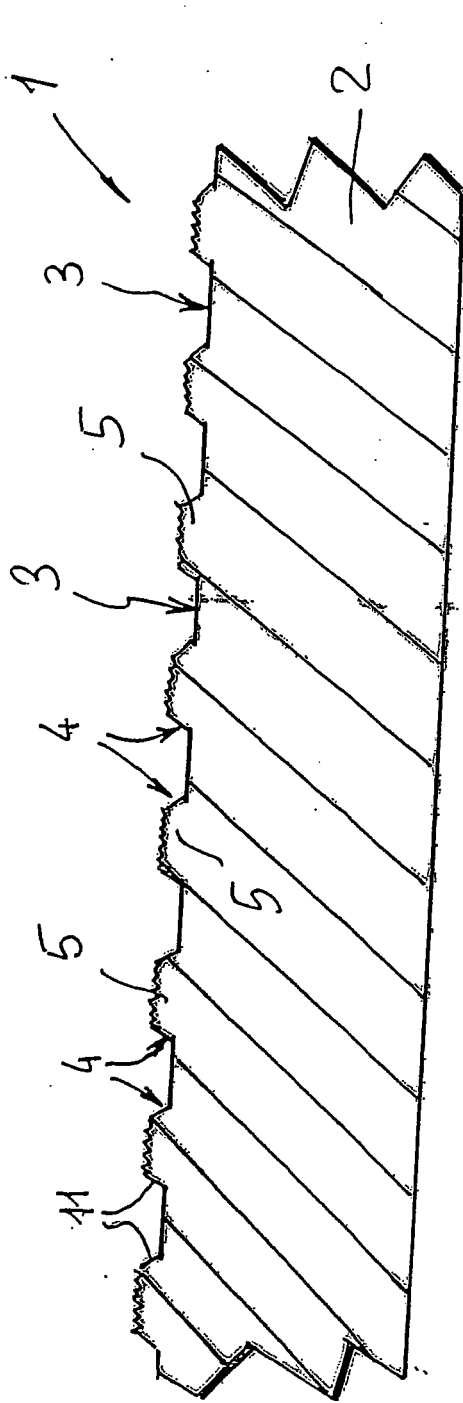


FIG. 1

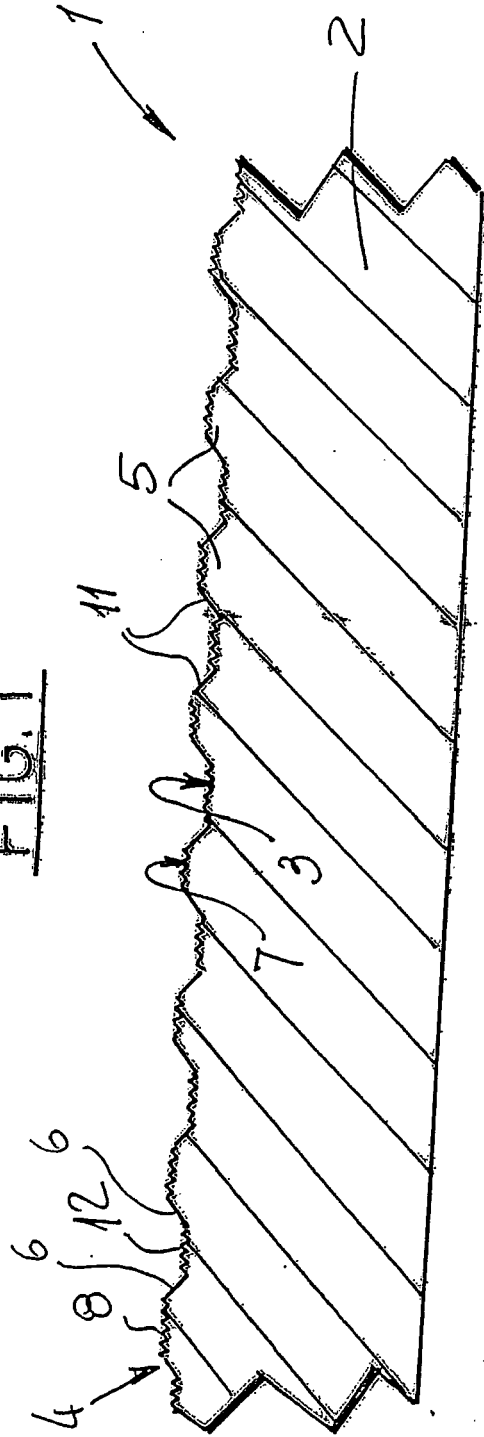


FIG. 2

