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Rinsche(10) **Pub. No.: US 2008/0209831 A1**(43) **Pub. Date: Sep. 4, 2008**(54) **LOOSELY LAID NATURAL STONE PANEL FLOOR**(75) Inventor: **Heiner Rinsche, Anrochte (DE)**Correspondence Address:
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E04F 15/14 (2006.01)(52) **U.S. Cl.** **52/316; 52/402; 428/15**(57) **ABSTRACT**

The invention relates to a natural stone panel floor, whereby the floor panels thereof (1) are laid at a distance from each other on an essentially flat base. The base panels (1) comprise, respectively, a groove (11) which is arranged on the lateral surface thereof (10) and respectively a plastic spacer (2) which is arranged between adjacent floor panels (1), said spacer supports a clamping crosspiece (20, 21) on both sides thereof, which is maintained in a clamped manner in the groove (11).

LOOSELY LAID NATURAL STONE PANEL FLOOR

[0001] The invention relates to a natural stone panel floor, whereby the floor panels thereof are laid at a distance from each other on an essentially flat base.

[0002] It is well-known to loosely lay natural stone floor coverings on an essentially flat base for meetings, shift fairs etc. for later further use. As a compensation for variations, narrow gaps are formed between the panels, employing for example cross-shaped plastic spacers, which are commonly used for laying fixed panels. In this case however, the result is not an immovable composite structure of the panels, and any height differences of the ground cause the panels to tilt and/or form steps at the joints, which makes the floor more difficult to walk on and possibly brings about a risk of falling. Also the free edges of the panels can be damaged, which in particular impairs their re-use.

[0003] It is the aim of the invention to create a loosely laid natural stone panel floor which exhibits a mostly flat, joint-free surface and which is easy to lay and to take up again.

[0004] The solution is attained in such a way that the floor panels comprise, respectively, a groove which is arranged on the lateral surfaces thereof and respectively a plastic spacer which is arranged between adjacent floor panels, said spacer supporting a clamping crosspiece on both sides thereof, which is maintained in a clamped manner in the groove.

[0005] Favourable embodiments are indicated in the sub-claims.

[0006] The clamping crosspieces preferably exhibit a horizontal boundary surface and clamping lamellas in opposite orientation, which are held in the groove in a clamping fit. The boundary surface gives an exact reference to the adjacent groove surface. Favourably, the spacer extends upward from the clamping crosspieces in the joint up to the level of the stone panel, distancing the plates, so that a smooth, well-closed surface is formed above the joint.

[0007] Furthermore, it proves to, be favourable, to use a relatively firm plastic such as PP, PE or ABS for the clamping crosspieces and the intermediate region and to use a softer component for the upper joint region which is moulded on by injection.

[0008] Preferably the upper edges of the soft region extend laterally above the joints, far enough to fill the respective chamfer of the stone, which is bevelled of approximately 1 mm.

[0009] This way no dirty or washing water etc can penetrate. Also small variations of the joint remain invisible, which by can occur due to the cutting of the stone and/or misalignments during use.

[0010] FIG. 1 shows favourable embodiments.

[0011] FIG. 1 shows a cross section of a joint region with a stone panel attached.

[0012] The side surfaces of the stone panels 1 are provided with a groove 11, which is preferably situated in the middle at half the height of the plate.

[0013] A joint spacer 2 extends between the stone panels 1, extending respective clamping crosspieces 20, 21 into the corresponding grooves 11 on both sides. Preferably the clamping crosspiece 20, 21 exhibits an essentially smooth reference surface 22 at the top, defining the height at which it is situated in relation to the upper surface of the groove. The

soft plastic knobs (24B) attached by means of injection-moulding, increase the clamping effect and ensure a sealing against moisture.

[0014] Retaining lamellas 23 of conical and/or knob shape extend downward from the continuous clamping crosspiece region in a flexible manner providing a clamping fit in the groove 11. A joint region 24 of the spacer 2 extends upward from the reference surface 22 in the joint, where the upper joint region 24A is made from a substantially more flexible material.

[0015] The flexible joint region 24A projects from the vertical joint with diverging edge regions 25 into the respective chamfer 12 bevelled on the stones 10 and fills it in a sealing manner.

[0016] The grooves are for example 3.0 mm wide and 7 mm deep.

[0017] Accordingly, before the installation, the lateral crosspieces of the connecting element are about 3.2 mm high and 6.8 mm wide. The joint region 24 of the connecting element is for example 7 mm high, which corresponds to the interval between the reference level 22 and the surface of the stone. The chamfer 12 on the stone 10 is about 1 mm wide; the projecting region 25 of the joint connector and spacer 2 is shaped accordingly. The stone panels and the joint connectors/spacers are also a separate commodity.

REFERENCE SYMBOLS

[0018]	1 stone panel
[0019]	11 grooves
[0020]	12 chamfers
[0021]	2 plastic spacers
[0022]	20, 21 clamping crosspieces
[0023]	22 reference surface
[0024]	23 lamellas
[0025]	24 joint region
[0026]	24A upper, soft joint region
[0027]	24B sealing and clamping knobs (soft)
[0028]	25 covering edge regions

1. Natural stone panel floor, the floor panels (1) of which are laid at a distance from each other next to each other and comprise, respectively, a groove (11) which is arranged on the lateral surfaces thereof (10) and whereby, respectively, a plastic spacer (2) is arranged between adjacent floor panels (1), said spacer supporting a clamping crosspiece (20, 21) on both sides thereof, which is maintained in a clamped manner in the respective groove (11), and whereby the stone panels (1), at their upper edges, exhibit a chamfer (12), which, together with an upper joint region (24A), is flexibly sealed, characterized in that the clamping crosspieces (20, 21) present, towards the top, an essentially flat reference surface (22) with short soft plastic knobs (24B) formed by injection and only at the bottom have retaining lamellas (23) of a conical shape, and that the spacer (2) extends, in a self-sealing manner, with its upper joint region (24A) into the regions of the chamfers (12), this part of the spacer consisting of a softer flexible material than the rest.

2. Natural stone panel floor according to claim 1, characterized in that the grooves (11) are formed in the sides of the stone panel (1) at a symmetrical height.

3. Natural stone panel floor according to claim 1, characterized in that the grooves (11) are 3 mm high and more than 6 mm deep.

4. Natural stone panel floor according to claim 1, characterized in that the clamping crosspieces (20, 21) present, towards the top, an essentially flat reference surface (22) with short soft plastic knobs (24B) formed by injection and, at the bottom, have retaining lamellas (23) of a conical shape.

5. Natural stone panel floor according to claim 4, characterized in that the joint spacer (2) extends from the reference surface (22) and to a surface of the stone, with which it is aligned.

6. Natural stone panel floor according to claim 5, characterized in that the top part of the spacer (2), located in the

upper region of the joint (24A) is made of a softer flexible material than the rest of the spacer.

7. Natural stone panel floor according to claim 6, characterized in that the stone panels (1) exhibit a chamfer (12) at their upper edges which is filled-in by the spacer (2).

8. Natural stone panel (1) for the construction of a natural stone panel floor in accordance with claim 1.

9. Joint spacer (2) for the construction of a natural stone panel floor in accordance with claim 1.

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