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(54) **Clinker and paving with such a clinker**

(57) Clinker for incorporation in a paving, having an upper surface, a lower surface, and four circumferential surfaces, namely two longitudinal surfaces and two end surfaces, the longitudinal surfaces having a length of approximately 20-22 cm and the end surfaces having a

length of approximately 10-11 cm, at least one of the circumferential surfaces being provided with a profile having recesses extending over the full height, which recesses are limited by protrusions having flat abutment surfaces, the abutment surfaces being situated in the circumferential surfaces.

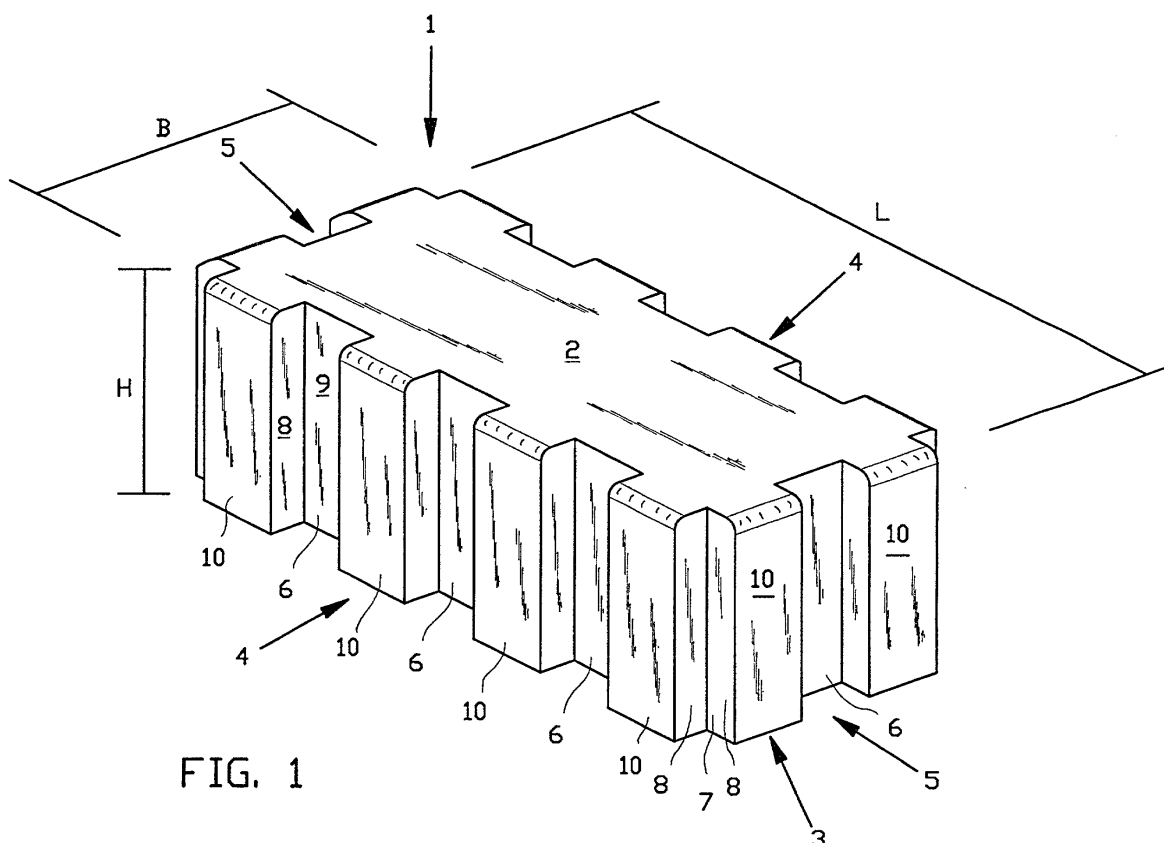


FIG. 1

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Description

[0001] The invention relates to a clinker for incorporation in a paving. The invention furthermore relates to a paving with such a clinker.

[0002] Pavings with clinkers having flat surfaces of a length of 21 cm, a width of 10.5 cm and a height of 5-12 cm have been known for a long time and have been incorporated in many pavings.

[0003] It may be desirable to provide a paving with an increased drainage capacity. This may for instance be desirable in systems for temporary storage situated underneath the paving, in order to delay or otherwise regulate the discharge of precipitation. This is for instance used in the pavings of storage yards, where precipitation may contain pollutions and may not be discharged to the common sewer system. To that end it is known to use standard clinkers having a regularly distributed porosity (pores). However, a drawback of these clinkers is that after a while the pores get clogged up and cleansing of the clinkers is necessary, up to once or twice a year.

[0004] It is an object of the invention to improve on this.

[0005] It is a further object of the invention to provide a clinker which easily provides existing pavings with a selected drainage capacity.

[0006] From one aspect the invention to that end provides a clinker for incorporation in a paving, having an upper surface, a lower surface, and four circumferential surfaces, namely two longitudinal surfaces and two end surfaces, the longitudinal surfaces having a length of approximately 20-22 cm and the end surfaces having a length of approximately 10-11 cm, at least one of the circumferential surfaces being provided with a profile having recesses extending over the full height, which recesses are limited by protrusions having flat abutment surfaces, the abutment surfaces being situated in the circumferential surfaces.

[0007] Such a clinker provides one or several, distinguishable drainage passages within and at the circumferential surfaces, which passages have a permanent drainage capacity in the long term as well.

[0008] Preferably at least one of the longitudinal surfaces and/or end surfaces has been provided with the profile.

[0009] It is even more preferred that both longitudinal surfaces have been provided with the profile, or that both end surfaces have been provided with the profile. When all circumferential surfaces have been formed like that the clinker universally placeable.

[0010] Preferably the bottom of the recesses forms a flat surface, preferably parallel to the flat abutment surfaces. Laid in pattern, rectangular drainage passages are then obtained. The depth of the recesses can here remain limited, which is advantageous for the strength of the clinker.

[0011] Preferably the distance between the flat bottom surfaces and the flat abutment surfaces is approx-

imately half the length of the bottom surfaces, so that when laid in pattern substantially square drainage passages are obtained, also in herringbone pattern.

[0012] The length of the abutment surfaces may approximately correspond to the length of the bottom surfaces, it being preferred that the length of the abutment surfaces is slightly smaller than the length of the bottom surfaces, so that unwanted sliding together of the clinkers is prevented.

[0013] It is furthermore advantageous when one of the recesses has been formed at the location of at least one of the corners of the clinker, the length of the bottom surface of the corner recesses preferably being half the length of the other recesses. Thus a regular pattern of drainage passages is possible in almost all types of paving patterns.

[0014] For an optimal drainage it is preferred that the recesses define an open space of 13-15% within the contour of the circumferential surfaces.

[0015] From another aspect the invention provides a clinker for incorporation in a paving, having an upper surface, a lower surface, and four circumferential surfaces, namely two longitudinal surfaces and two end surfaces, the longitudinal surfaces having a length of approximately 20-22 cm and the end surfaces having a length of approximately 10-11 cm, the circumferential surfaces being merlon-shaped within the contour of the circumferential surfaces.

[0016] From a further aspect the invention provides a paving of clinkers, provided with one or several of the clinkers according to the invention.

[0017] From another aspect the invention provides such a paving, almost all clinkers being formed like the clinkers according to invention.

[0018] From yet a further aspect the invention provides a method for providing drainage holes in an existing clinker paving, a number of clinkers being replaced by clinkers according to invention.

[0019] The invention will be elucidated on the basis of an exemplary embodiment shown in the attached drawings, in which:

Figure 1 shows an exemplary embodiment of a clinker according to the invention, in perspective view;

Figure 2 shows a number of clinkers according to figure 1, laid in pattern in a paving, schematically shown; and

Figure 3 shows a number of clinkers of figure 1, incorporated in an existing paving.

[0020] The clinker 1 shown in figure 1 is usually made of concrete and has a length L, width B and height H of 21 cm, 10.5 cm and 5-12 cm, respectively. Clinkers having those dimensions have been used in many pavings, either in stretcher pattern or in herringbone pattern.

[0021] The clinker 1 shown in figure 1 has an upper surface 2, a lower surface 3, longitudinal surfaces 4 and end surfaces 5.

[0022] In the longitudinal surfaces 4 and end surfaces 5 recesses 6 have been formed, which recesses are continuous in vertical direction and U-shaped with side surfaces 8 and bottom surface 9. Between the recesses 6 there are flat abutment surfaces 10, which are situated in a vertical plane with each other, which is a part of the circumferential surfaces defining the dimensions B and L, that means the longitudinal surfaces 4 and the end surfaces 5, of the clinker 1.

[0023] The depth T (see figure 2) of the recesses 6 in this example is half the width L1 of the recesses 6, in this example 1.25 cm and 2.5 cm, respectively.

[0024] The bottoms 9 of the recesses 6 are in a vertical plane parallel to the vertical plane of the abutment surfaces 10.

[0025] Furthermore it can be seen in figures 1 and 2 that the recesses 6 are distributed regularly over the circumferential surfaces of the clinker 1 which as it were has a merlon-shaped circumference. In the end surfaces 5 there is one central recess 6 which is bounded by two abutment surfaces 10. At the location of the corners recesses 7 have been formed, that are bounded by two side planes 8, equal to the side planes 8 of the recesses 6. In the example of figure 2 the recesses 7 are therefore half as large as the recesses 6.

[0026] As can be seen in figure 2 this results in passages 16 being formed in the pattern shown in figure 2 at the location of the meeting points of bricks 2, which passages have a cross-section equal to the cross-section of the passages 16 formed by recesses 6 that cooperate with each other.

[0027] The pattern shown in figure 2 will not usually be preferred, instead the one row of stones will be offset half a length size with respect to the adjacent row of clinkers. Then as well, where two corners of two clinkers are situated in the one row, a passage 16 will be formed at the location of the middle of a clinker 1 in the next row, which passage is equal to the other passages 16 situated adjacently.

[0028] Because the abutment surfaces 10 have an equal length everywhere and are laid on a fixed grid size with respect to the corners, passages 16 are also obtained in a herringbone pattern, as schematically shown by dotted line S, in the clinker shown below to the right in figure 2.

[0029] Due to the flat abutment surfaces 10 a good abutment of the clinkers 2 one to the other is ensured.

[0030] When the clinkers 2 are placed in an offset pattern it is advantageous when the bottom width L1 is slightly smaller than the width L2 of the abutment surfaces 10, as indicated in figure 2. It is thus prevented that an adjacent clinker 2 with abutment surface 10 extends in a recess 6 of the adjacent clinker.

[0031] With the dimensions indicated above it is achieved that the total drainage surface area, formed by

the recesses 6, is approximately 14% of the surface area $B \times L$, which is advantageous for the drainage in pavings.

[0032] The drainage passages 16 are moreover such that there hardly is danger of clogging up. The clinkers 1 themselves need not or hardly be cleansed in order to retain the drainage capacity, for instance on terrains where there is question of polluted drainage water, such as storage yards.

[0033] With the clinker according to the invention it is also possible to realise a partially draining paving 15 in existing pavings with the usual clinkers 20, by replacing clinkers 20 by clinkers 1 here and there at selected locations. At those locations drainage of water in the direction A can take place in the direction B, via the passages formed by the recesses 6 and 7.

Claims

1. Clinker for incorporation in a paving, having an upper surface, a lower surface, and four circumferential surfaces, namely two longitudinal surfaces and two end surfaces, the longitudinal surfaces having a length of approximately 20-22 cm and the end surfaces having a length of approximately 10-11 cm, at least one of the circumferential surfaces being provided with a profile having recesses extending over the full height, which recesses are limited by protrusions having flat abutment surfaces, the abutment surfaces being situated in the circumferential surfaces.
2. Clinker according to claim 1, at least one of the longitudinal surfaces being provided with the profile, preferably both longitudinal surfaces.
3. Clinker according to claim 1 or 2, at least one end surface being provided with the profile, preferably both end surfaces.
4. Clinker according to claim 1, 2 or 3, the bottom of the recesses forming a flat surface, which flat bottom surface of the recesses preferably runs parallel to the flat abutment surfaces.
5. Clinker according to claim 4, the distance between the flat bottom surfaces and the flat abutment surfaces being approximately half the length of the bottom surfaces.
6. Clinker according to claim 4 or 5, the length of the abutment surfaces approximately corresponding to the length of the bottom surfaces.
7. Clinker according to claim 6, the length of the abutment surfaces being slightly smaller than the length of the bottom surfaces.

8. Clinker according to any one of the preceding claims, a recess being formed at the location of at least one of the corners of the clinker.
9. Clinker according to claims 4 and 8, the length of the bottom surface of the corner recesses being half the length of the other recesses. 5
10. Clinker according to any one of the preceding claims, the recesses defining an open space of 13-15% within the contour of the circumferential surfaces. 10
11. Clinker for incorporation in a paving, having an upper surface, a lower surface, and four circumferential surfaces, namely two longitudinal surfaces and two end surfaces, the longitudinal surfaces having a length of approximately 20-22 cm and the end surfaces having a length of approximately 10-11 cm, the circumferential surfaces being merlon-shaped within the contour of the circumferential surfaces. 15 20
12. Paving of clinkers, provided with a number of clinkers described in one or several of the preceding claims. 25
13. Paving of clinkers according to claim 15, almost all clinkers being formed like the clinkers according to one or several of the claims 1-11. 30
14. Method for providing drainage holes in an existing clinker paving, a number of clinkers being replaced by clinkers according to one or several of the claims 1-11. 35

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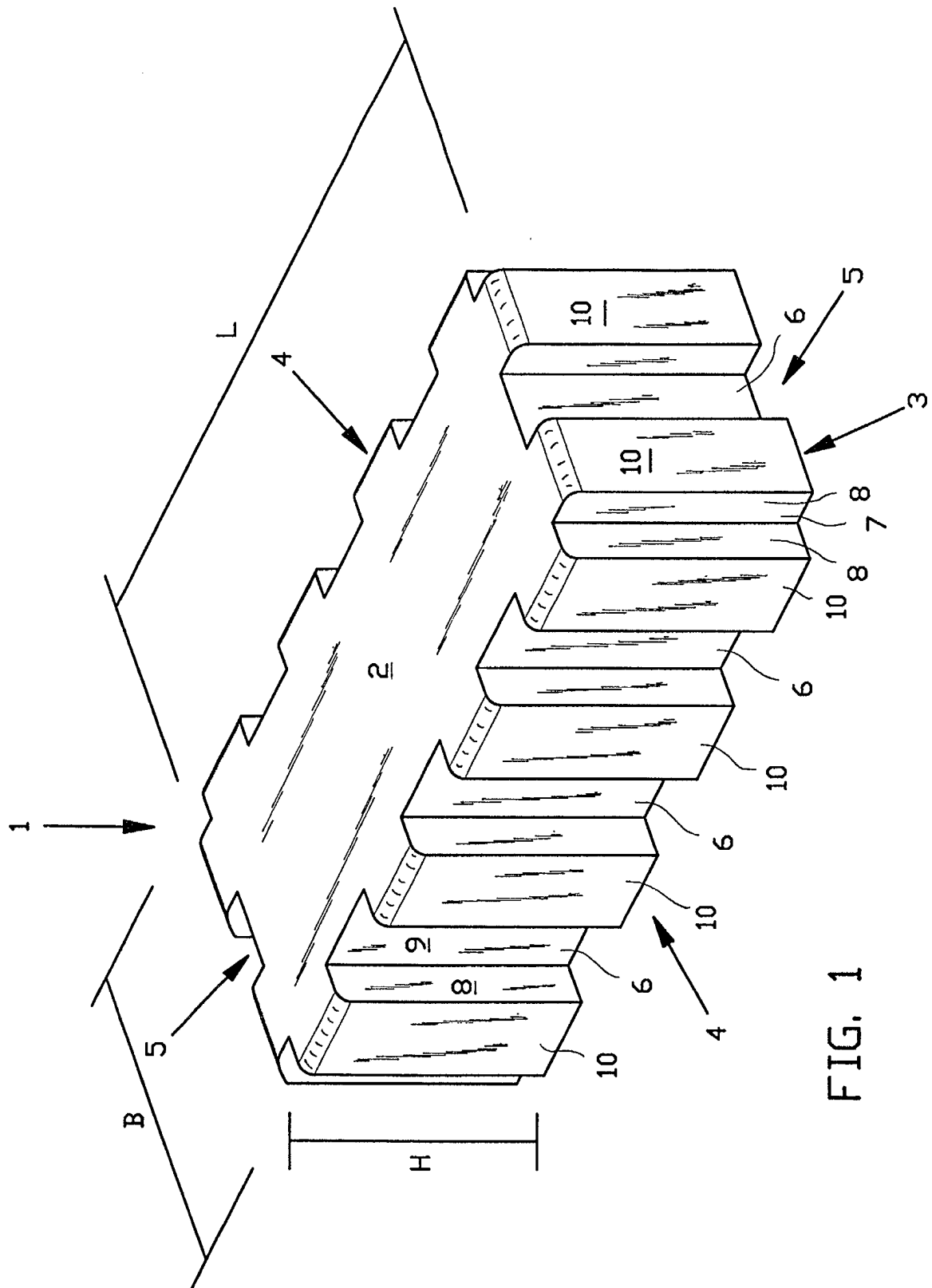


FIG. 1

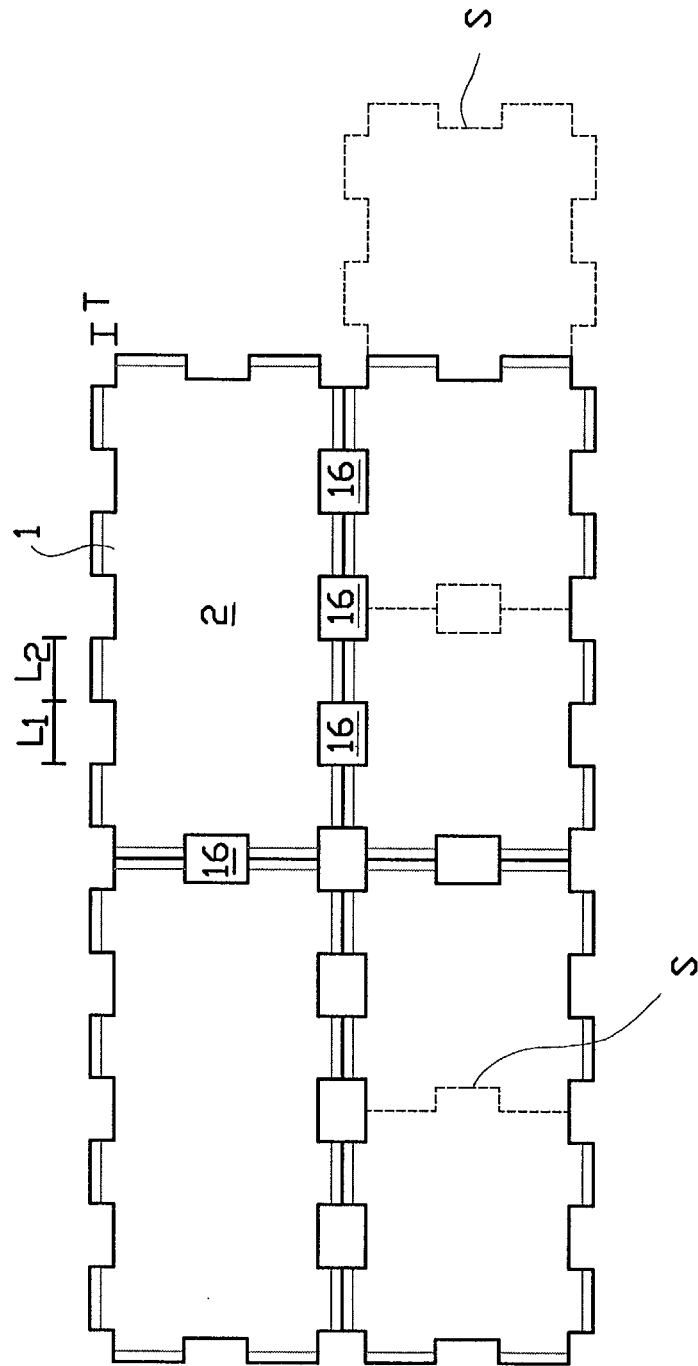


FIG. 2

