Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).
Description

[0001] The invention relates to a combination of a shower drain and a finishing layer F, such as a tile layer, wherein the shower drain comprises:

- a lower tray with a bottom surface and standing side walls along the edges of the bottom surface; and
- an outlet opening arranged in the lower tray,
- an insert with an upper surface wherein an inflow opening is defined by at least a part of the insert, and
- wherein the upper surface of the insert lies substantially flush with the upper edge of the side walls, or with the upper surface of an old finishing layer arranged adjacent to the lower tray.

[0002] Such a combination has been known for some years and in particular from DE 202006014959. The lower tray is usually placed in a sub-floor, for instance by being cast in concrete, or is placed in covering floors, such as for instance sand cement. In the lower tray an outlet opening is then further provided which is connected to an outlet pipe, normally via a siphon or stench trap.

[0003] A finishing layer is subsequently arranged over the sub-floor. This is often a tile layer, but can also be a cement layer, wood layer, moulding resin layer such as epoxy, vinyl layer, etc.

[0004] The first known shower drains had a relatively large width, wherein a grating was placed in the lower tray to cover the large inflow opening. Over a period of years the width of the shower drains has been reduced to even a very narrow inflow opening.

[0005] Since a shower drain is available in different widths, it will be necessary for the manufacturer to produce and stock different types of lower tray. This necessarily entails costs.

[0006] In addition, the design of prior art shower drains is limited mainly to rectangular shapes. Manufacturing a lower tray of differing form is costly.

[0007] When a shower space or sanitary space is renovated, it may be that a shower drain has already been arranged. This will have a relatively large width however, and this is undesirable nowadays. The old shower drain will therefore have to be removed from the floor, which will necessarily often involve demolition work. A new, narrower lower tray can then be arranged in the formed hole.

[0008] It is now an object of the invention to reduce or even obviate the above stated drawbacks.

[0009] This object is achieved according to the invention with a combination according to claim 1.

[0010] The insert fills a part of the lower tray, whereby the inflow opening, which is normally formed by the upper edges of the side walls of the lower tray, is narrowed. The finishing layer can be arranged over the insert, whereby the exterior of the shower drain appears narrow while the lower tray is wider. The water capacity of the lower tray is hereby maintained despite the narrowing.

[0011] A universal lower tray is in addition provided by the shower drain according to the invention, while the exterior appearance, which is formed substantially by the inflow opening, can be chosen as desired. This is because the insert can take any desired form without the water-tightness being adversely affected. The water-tightness is guaranteed by the universal lower tray in which the insert is arranged.

[0012] The insert narrows the original inflow opening, whereby the surface area is reduced. If water remains behind in the lower tray, for instance at the position of the siphon, the surface along which water can evaporate is likewise reduced due to the narrowing. In addition, the insert provides for a closed buffer space in which water can be stored.

[0013] For the manufacture of shower drains it is possible to opt for only one width of the lower tray while different inserts are provided in order to realize a desired visible inflow opening. The advantage of a lower tray in only one width is that the quality standards can be optimized. One of the quality standards is the water-tightness of the lower tray. When only one width is manufactured, the machines need not be reset repeatedly, as when a number of different widths are being manufactured.

[0014] Because an insert lies in the lower tray, it can be manufactured with lower quality standards, or at least in respect of water-tightness. In addition, the length of an insert can easily be shortened.

[0015] For the purpose of storage at the manufacturer or wholesaler it is also advantageous that, with a limited number of lower trays, a large number of different shower drains can be held in stock.

[0016] With a combination according to the invention it is further possible to easily narrow an old, wide shower drain without having to break the lower tray out of the floor. This is particularly advantageous during renovation of old shower spaces. It is usual here to arrange a new finishing layer over the old finishing layer. The insert then forms a support for the new finishing layer, which runs over the upper surface of the insert.

[0017] It is also possible with the combination according to the invention to adapt the form of the inflow opening with a suitable insert. In this way a square drain can for instance be converted to a round drain.

[0018] The insert can be supplied separately together with a lower tray, or the insert can be fixed in the lower tray at the factory. When it is supplied separately, it is still possible during installation to opt for a secondary drainage, wherein leakage water can still run under the tile between the insert and the wall of the lower tray and into the lower tray.

[0019] The insert is preferably arranged on the bottom wall. The insert hereby supports on the floor and possible bending of the insert is prevented as far as possible.

[0020] In an embodiment according to the invention the insert lies close to or lies against a standing side wall and extends along substantially the length of this side wall. Particularly in the case of a rectangular form of the insert

[0021] A finishing layer is subsequently arranged over the sub-floor. This is often a tile layer, but can also be a cement layer, wood layer, moulding resin layer such as epoxy, vinyl layer, etc.

[0022] In an embodiment according to the invention the insert narrows the original inflow opening, whereby the surface area is reduced. If water remains behind in the lower tray, for instance at the position of the siphon, the surface along which water can evaporate is likewise reduced due to the narrowing. In addition, the insert provides for a closed buffer space in which water can be stored.

[0023] For the manufacture of shower drains it is possible to opt for only one width of the lower tray while different inserts are provided in order to realize a desired visible inflow opening. The advantage of a lower tray in only one width is that the quality standards can be optimized. One of the quality standards is the water-tightness of the lower tray. When only one width is manufactured, the machines need not be reset repeatedly, as when a number of different widths are being manufactured.

[0024] Because an insert lies in the lower tray, it can be manufactured with lower quality standards, or at least in respect of water-tightness. In addition, the length of an insert can easily be shortened.

[0025] For the purpose of storage at the manufacturer or wholesaler it is also advantageous that, with a limited number of lower trays, a large number of different shower drains can be held in stock.

[0026] With a combination according to the invention it is further possible to easily narrow an old, wide shower drain without having to break the lower tray out of the floor. This is particularly advantageous during renovation of old shower spaces. It is usual here to arrange a new finishing layer over the old finishing layer. The insert then forms a support for the new finishing layer, which runs over the upper surface of the insert.

[0027] It is also possible with the combination according to the invention to adapt the form of the inflow opening with a suitable insert. In this way a square drain can for instance be converted to a round drain.

[0028] The insert can be supplied separately together with a lower tray, or the insert can be fixed in the lower tray at the factory. When it is supplied separately, it is still possible during installation to opt for a secondary drainage, wherein leakage water can still run under the tile between the insert and the wall of the lower tray and into the lower tray.

[0029] The insert is preferably arranged on the bottom wall. The insert hereby supports on the floor and possible bending of the insert is prevented as far as possible.

[0030] In an embodiment according to the invention the insert lies close to or lies against a standing side wall and extends along substantially the length of this side wall. Particularly in the case of a rectangular form of the insert
shower drain the width of the lower tray can easily be
narrowed with this embodiment.

[0021] In another embodiment the inflow opening is
defined by a number of upper edges of the standing side
walls and at least one edge of the insert.

[0022] In yet another embodiment of the combination
according to the invention the insert is height-adjustable.
The upper surface of the insert can hereby be set to the
same height as the surrounding floor, so that a finishing
layer can subsequently be arranged over the surrounding
floor and the insert. According to the invention the upper
surface of the insert lies substantially flush with the upper
dge of the side walls. This is particularly suitable for a
new installation. The new finishing layer, such as tiles,
is then arranged over the upper edge and on the upper
surface.

[0023] A horizontal flange can further be arranged
along the upper edge of the side walls. A sealing mem-
brane can for instance be easily arranged on this hori-
zontal flange. This membrane provides for a watertight
connection of the lower tray to the floor, wherein the mem-
brane normally runs under a finishing layer such as a tile
layer.

[0024] A preferred embodiment of the shower drain ac-
cording to the invention comprises a frame arranged in
the inflow opening, wherein the upper edge of the frame
protrudes above the upper edge of the side walls and the
upper surface of the insert. This frame protrudes above
the upper surface and thereby forms a finish for the side
of the finishing layer. It further provides for a protection
of the side of the finishing layer, so that this cannot be
damaged or form a sharp edge, for instance for feet.

[0025] This frame is preferably height-adjustable, so
that it can be easily adapted to the thickness of the fin-
ishing layer.

[0026] A grating arranged in the inflow opening can
further be provided in the shower drain according to the
invention.

[0027] In another preferred embodiment of the shower
drain according to the invention an edge of the upper
surface of the insert comprises a standing flange. This
flange can provide finish and protection for the side of
the finishing layer.

[0028] In a highly preferred embodiment of the shower
drain according to the invention the insert comprises a
removable part for the purpose of gaining access to the
outlet opening. When the inflow opening of the lower tray
is made very narrow, it is often difficult or impossible to
gain access to the outlet opening, for instance to unblock
the outlet or clean a siphon. In the invention the lower
tray is of a usual width, whereby an outlet and siphon of
usual dimensions can be provided. Removing the remov-
able part from the insert now creates sufficient space to
gain easy access to the outlet opening.

[0029] Because the finishing layer extends over the
upper surface of the insert, a part of the shower drain is
concealed from view and the shower drain appears nar-
rower. In addition, the insert forms a strong substrate for
the finishing layer since the insert is arranged on the bot-
ttom wall of the lower tray.

[0030] Although the invention is particularly suitable for
varying the width of the inflow opening, the same principle
can vary also be applied to vary the length of the lower tray,
which can for instance be advantageous if a second tile
layer is arranged on the wall, or if a new shower door of
different width is arranged above the shower drain. The
length of the shower drain can in this way also be adjusted
to a multiple of the tile width of a surrounding tile floor.

[0031] These and other features of the invention are
further elucidated with reference to the accompanying
drawings.

Figure 1 is a cross-sectional view of a first embodi-
ment of the invention.

Figure 2 is a cross-sectional view of a second em-
bodyment of the invention.

Figure 3 is a cross-sectional view of a third embod-
iment of the invention.

Figure 4 is a cross-sectional view of a fourth embod-
iment of the invention.

Figure 5 is a perspective view of a fifth embodiment
of the invention.

Figure 6 shows a sixth embodiment not according
the invention.

Figure 7 shows a seventh embodiment of the inven-
tion.

Figure 8 shows an eighth embodiment of the inven-
tion.

Figure 9 shows a ninth embodiment not according
the invention.

Figure 10 shows a tenth embodiment not according
the invention.

[0032] Figure 1 shows a shower drain 1. This shower
drain 1 has a lower tray with a bottom surface 2 and
standing walls 3 along the edges of bottom surface 2. A
horizontal flange 4 is arranged on the upper edge of stand-
ing walls 3. Arranged in lower tray 2, 3, 4 is an outlet
opening to which an outlet pipe 5 is connected.

[0033] An insert 6 is placed in lower tray 2, 3, 4. This
insert 6 has a U-shaped cross-section and the upper sur-
face of insert 6 lies flush with horizontal flanges 4.

[0034] Walls 3 and insert 6 define inflow opening 7, in
which a frame 8 is arranged. This frame 8 is preferably
height-adjustable.

[0035] Lower tray 2, 3, 4 is cast into sub-floor 10. Tiles
8 are arranged over this sub-floor 9, horizontal flanges 4
and insert 6. The sides of tiles 8 are finished with frame
9. When this frame 9 is height-adjustable, the thickness
of tiles 8 can easily be taken into account.

[0036] Figure 2 shows a second embodiment 20 of the
invention. The same lower tray 2, 3, 4 is shown in this
embodiment 20. Arranged in lower tray 2, 3, 4 are two
inserts 21, 22 which each lie with the respective upper
surface 23, 24 flush with horizontal flanges 4.

[0037] Using the two inserts 21, 22 the inflow opening
25 can be positioned relative to lower tray 2, 3, 4, for instance in the middle. It is also possible to arrange the inflow opening 25 asymmetrically.

[0038] Arranged once again in inflow opening 25 is a frame 26 which protects and finishes the sides of tiles 27.

[0039] Openings are arranged in the underside of inserts 21, 22 and frame 26 so that the water can also flow under inserts 21, 22. The capacity of lower tray 2, 3, 4 is hereby maintained.

[0040] Figure 3 shows a third embodiment 30 of the invention. The same lower tray 2, 3, 4 is also shown here. Placed in lower tray 2, 3, 4 is an insert 31 having standing walls 32, an upper surface 33 and a standing flange 34. Standing flange 34 is connected with a curved part to upper surface 33, thereby creating a cavity 35. When tiles 36 have been arranged over horizontal flanges 4 and upper surface 33, a seal can be arranged in this cavity 35.

[0041] A grating 38 is placed in the inflow opening 37 which is formed by standing flanges 34 of insert 31.

[0042] Figure 4 is a cross-sectional view of a fourth embodiment 40 according to the invention. This shower drain 40 is suitable for placing against a wall 41. The lower tray of shower drain 40 is provided with a bottom surface 42, a standing wall 43 which lies against wall 41, and a lower standing wall 44. A horizontal flange 45 is arranged on the upper edge of standing wall 44. Further provided in upper surface 42 is an outlet opening which connects to an outlet pipe 46.

[0043] An insert 47 is placed in lower tray 42, 43, 44, 45. This insert 47 has a U-shaped cross-section. A finishing layer 48 is arranged over the upper surface of insert 47 and horizontal flange 45.

[0044] A frame 50 is placed in the inflow opening 49 formed by standing wall 43 and insert 47. This frame 50 finishes the finishing layer 48 on one side. Frame 50 has on the other side a horizontal flange 51 on which wall tiles 42 can support.

[0045] Figure 5 shows a perspective view of a shower drain 60 according to the invention. The same lower tray 2, 3, 4 is once again shown here.

[0046] An insert 61 is placed in lower tray 2, 3, 4. This insert 61 has an upper surface 62 and side walls 63 depending from upper surface 62. Arranged on the underside of the sides are openings 64 for allowing water under insert 61.

[0047] Lower tray 2, 3, 4 is provided with an outlet opening to which an outlet pipe 65 connects. At the position of this outlet opening and outlet pipe 65 a removable part 66 is arranged in the upper surface 62, so that easy access can be gained to the outlet opening and outlet pipe 65.

[0048] When a finishing layer is arranged in this embodiment 60 on upper surface 62 of insert 61, provision must then be made in the finishing layer for removable part 66, so that removable part 66 can also be removed with the finishing layer.

[0049] Figure 6 shows a sixth embodiment 70 not according to the invention. This embodiment 70 has a lower tray with a bottom wall 71 and standing walls 72. An outlet pipe 73 is connected to a standing wall 72.

[0050] An insert 74 is placed in lower tray 71, 72. This insert 74 has a stepped upper surface 75, 76. A wall tile 77 is placed on the higher part 75. The lower part 76 of the upper surface forms a closure for lower tray 71, 72, so that the appearance of a shallow shower drain is obtained in which there is normally no water. In addition, this closure by part 76 ensures that the water in lower tray 71, 72 evaporates less quickly.

[0051] Figure 7 shows a seventh embodiment 80 according to the invention. This embodiment 80 also has a lower tray with a bottom surface 81, standing walls 82 and horizontal flanges 83. Lying on flanges 83 is an old finishing layer 84.

[0052] For renovation of such a wide shower drain, inserts 85 are placed in lower tray 81, 82, 83 which are height-adjustable by means of adjusting feet 86, so that the upper surface of inserts 85 can be set flush with the upper surface of the old finishing layer 84.

[0053] A new finishing layer 87 is then arranged on the old finishing layer 84 and inserts 85. Finally placed in the newly formed inflow opening is a grating 88 which can be adjusted in height with an adjusting foot 89 in order to set the upper surface of grating 88 flush with the upper surface of finishing layer 87.

[0054] Figure 8 shows an eighth embodiment 90 according to the invention. Shown in this figure is a lower tray 90 suitable for arranging against a wall. This lower tray has a bottom surface 91, a stepped wall flange 92 and a standing wall 93 with horizontal flange 94.

[0055] Old wall tiles 95 are arranged against wall flange 92 and old floor tiles 96 are arranged on horizontal flange 94.

[0056] An insert 97 having a C-shaped cross-section is subsequently placed on bottom surface 91. Wall tiles 99 and floor tiles 100 can then be placed on upper flanges 98, whereby the resulting inflow opening 101 is narrower than the original inflow opening.

[0057] Figure 9 shows a perspective view of a ninth embodiment 110 not according to the invention.

[0058] In this embodiment the lower tray is a square drain 111 with an outlet opening 112. In order to modify the shape of drain 111 an insert 113 is placed in lower tray 111. This insert 113 has a square shape with an H-shaped inflow opening 114 formed therein. A new tile 115, in which an H-shaped opening 116 is arranged, can then be arranged over insert 113. Flange 114 here forms a finish for opening 116 in tile 115.

[0059] With this embodiment 110 a square drain is transformed to an H-shaped inflow opening, and the appearance of the drain is thus modified.

[0060] Figure 10 shows a tenth embodiment 120 not according to the invention. Shower drain 120 has a lower tray with bottom wall 121, standing walls 122 and horizontal flanges 123 arranged thereon. An insert 124 is placed at the transition between standing walls 122 and
horizontal flanges 123. This insert 124 has a horizontal part 125 which reduces the inflow opening in size. In addition, insert 124 has a downward oriented centring flange 126 with which insert 124 can be positioned in centred manner in lower tray 121, 122, 123.

Claims

1. Combination of a shower drain (1; 20; 30; 40; 60; 80; 90) and a finishing layer (8; 27; 36; 48; 87; 100), such as a tile layer, wherein the shower drain, comprises:
   - a lower tray with a bottom surface (2; 42; 81; 91) and standing side walls (3; 43, 44; 82; 92, 93) along the edges of the bottom surface (2; 42; 81; 91); and
   - an outlet opening arranged in the lower tray;
   - an insert (6; 21, 22; 31; 47; 61; 85; 97) with an upper surface (33; 62; 98), wherein an inflow opening (7; 25; 37; 49; 101) is defined by at least a part of the insert (6; 21, 22; 31; 47; 61; 85; 97) and wherein the upper surface (33; 62; 98) of the insert (6; 21, 22; 31; 47; 61; 85; 97) lies substantially flush with the upper edge of the side walls (3; 43, 44) or with the upper surface of an old finishing layer (84; 96) arranged adjacent to the lower tray, characterised in that the finishing layer (8; 27; 36; 48; 87; 100) extends over the upper surface (33; 62; 98) of the insert (6; 21, 22; 31; 47; 61; 85; 97) and over the upper edge of at least one side wall (3; 44; 82).

2. Combination as claimed in claim 1, wherein the insert (6; 21, 22; 31; 47; 61; 85) is arranged on the bottom wall (2; 42; 81).

3. Combination as claimed in claim 1 or 2, wherein the insert (6; 21, 22; 31; 47; 61; 85; 97) lies close to or lies against a standing side wall (3; 44; 82; 92, 93) and extends along substantially the length of this side wall (3; 44; 82; 92, 93).

4. Combination as claimed in any of the foregoing claims, wherein the inflow opening (7; 25; 49) is defined by a number of upper edges of the standing side walls (3; 43) and at least one edge of the insert (6; 21, 22; 47; 61).

5. Combination as claimed in any of the foregoing claims, wherein the insert (85) is height-adjustable.

6. Combination as claimed in any of the foregoing claims, wherein a horizontal flange (4; 45; 83; 94) is arranged along the upper edge of the side walls (3; 44; 82; 93).

7. Combination as claimed in any of the foregoing claims, comprising a frame (26; 50) arranged in the inflow opening (25; 49), wherein the upper edge (26) of the frame (26; 50) protrudes above the upper edge of the side walls (3; 44) and the upper surface of the insert (21, 22; 47).

8. Combination as claimed in any of the foregoing claims, comprising a grating (38; 88) arranged in the inflow opening (37).

9. Combination as claimed in any of the foregoing claims, wherein an edge of the upper surface (33) of the insert (31) comprises a standing flange (34).

10. Combination as claimed in any of the foregoing claims, wherein the insert (61) comprises a removable part (66) for the purpose of gaining access to the outlet opening (65).

11. Combination as claimed in any of the preceding claims, wherein the upper surface (33; 62) of the insert (6; 21, 22; 47; 61; 85; 97) extends as far as the lower surface of the finishing layer (8; 27; 48; 87; 100).

Patentansprüche

1. Kombination aus einem Duschablauf (1; 20; 30; 40; 60; 80; 90) und einer Deckschicht (8; 27; 36; 48; 87; 100), wie etwa einer Fliesenschicht, wobei der Duschablauf umfasst:
   - eine Unterwanne mit einer Bodenfläche (2; 42; 81; 91) und stehenden Seitenwänden (3; 43, 44; 82; 92, 93) entlang den Rändern der Bodenfläche (2; 42; 81; 91); und
   - eine in der Unterwanne angeordnete Auslassöffnung;
   - einen Einsatz (6; 21, 22; 31; 47; 61; 85; 97) mit einer Oberseite (33; 62; 98), wobei eine Einsströmöffnung (7; 25; 37; 49; 101) durch mindestens einen Teil des Einsatzes (6; 21, 22; 31; 47; 61; 85; 97) definiert ist, und wobei die Oberseite (33; 62; 98) des Einsatzes (6; 21, 22; 31; 47; 61; 85; 97) im Wesentlichen bündig mit der Oberkante der Seitenwände (3; 43, 44) oder mit der Oberseite einer alten Deckschicht (84; 96), die benachbart zu der Unterwanne angeordnet ist, liegt, dadurch gekennzeichnet, dass die Deckschicht (8; 27; 36; 48; 87; 100) sich über die Oberseite (33; 62; 98) des Einsatzes (6; 21, 22; 31; 47; 61; 85; 97) und über die Oberkante mindestens einer Seiten-
2. Kombination nach Anspruch 1, wobei der Einsatz (6; 21, 22; 31; 47; 61; 85) auf der Bodenwand (2; 42; 81) angeordnet ist.

3. Kombination nach Anspruch 1 oder 2, wobei der Einsatz (6; 21, 22; 31; 47; 61; 85; 97) nahe an oder gegen eine stehende Seitenwand (3; 44; 82; 92, 93) liegt und sich im Wesentlichen entlang der Länge dieser Seitenwand (3; 44; 82; 92, 93) erstreckt.

4. Kombination nach einem der vorhergehenden Ansprüche, wobei die Einströmöffnung (7; 25; 49) durch eine Anzahl von Oberkanten der stehenden Seitenwände (3; 43) und mindestens eine Kante des Einsatzes (6; 21, 22; 47; 61) definiert ist.

5. Kombination nach einem der vorhergehenden Ansprüche, wobei der Einsatz (85) höhenverstellbar ist.

6. Kombination nach einem der vorhergehenden Ansprüche, wobei ein horizontaler Flansch (4; 45; 83; 94) entlang der Oberkante der Seitenwände (3; 44; 82; 92) angeordnet ist.

7. Kombination nach einem der vorhergehenden Ansprüche, umfassend einen in der Einströmöffnung (25; 49) angeordneten Rahmen (26; 50), wobei die Oberkante (26) des Rahmens (26; 50) über die Oberkante der Seitenwände (3; 44; 82; 92) hinausragt.

8. Kombination nach einem der vorhergehenden Ansprüche, umfassend ein in der Einströmöffnung (37) angeordnetes Gitter (38; 88).

9. Kombination nach einem der vorhergehenden Ansprüche, wobei eine Kante der Oberseite (33) des Einsatzes (31) einen stehenden Flansch (34) umfasst.


11. Kombination nach einem der vorhergehenden Ansprüche, wobei die Oberseite (33; 62) des Einsatzes (6; 21, 22; 47; 61; 85; 97) sich bis zu der Unterseite der Deckschicht (8; 27; 48; 87; 100) erstreckt.

Revendications

1. Combinaison d’un drain de douche (1; 20; 30; 40; 60; 80; 90) et d’une couche de finition (8; 27; 36; 48; 87; 100) telle qu’une couche de carreaux, dans laquelle le drain de douche comprend :

- un bac inférieur avec une surface de fond (2; 42; 81; 91) et des parois latérales verticales (3; 43; 44; 82; 92, 93) le long des arêtes de la surface de fond (2; 42; 81; 91) et
- une ouverture de sortie agencée dans le bac inférieur :
- un insert (6; 21, 22; 31; 47; 61; 85; 97) avec une surface supérieure (33; 62; 98), dans lequel une ouverture d’afflux (7; 25; 37; 49; 101) est définie par au moins une partie de l’insert (6; 21, 22; 31; 47; 61; 85; 97) et dans lequel la surface supérieure (33; 62; 98) de l’insert (6; 21, 22; 31; 47; 61; 85; 97) se trouve sensiblement en alignement avec l’arête supérieure des parois latérales (3; 43; 44) ou avec la surface supérieure d’une ancienne couche de finition (84; 96) agencée de manière adjacente au bac inférieur, caractérisé en ce que la couche de finition (8; 27; 36; 48; 87; 100) s’étend par-dessus la surface supérieure (33; 62; 98) de l’insert (6; 21, 22; 31; 47; 61; 85; 97) et par-dessus l’arête supérieure d’au moins une paroi latérale (3; 44; 82).

2. Combinaison selon la revendication 1, dans laquelle l’insert (6; 21, 22; 31; 47; 61; 85) est agencé sur la paroi de fond (2; 42; 81).

3. Combinaison selon la revendication 1 ou 2, dans laquelle l’insert (6; 21, 22; 31; 47; 61; 85; 97) se trouve près ou se trouve contre une paroi latérale verticale (3; 44; 82; 92, 93) et se trouve sensiblement le long de la longueur de cette paroi latérale (3; 44; 82; 92, 93).

4. Combinaison selon l’une quelconque des revendications précédentes, dans laquelle l’ouverture d’afflux (7; 25; 49) est définie par un nombre d’arêtes supérieures des parois latérales verticales (3; 43) et au moins une arête de l’insert (6; 21, 22; 47; 61).

5. Combinaison selon l’une quelconque des revendications précédentes, dans laquelle l’insert (85) est ajustable en hauteur.

6. Combinaison selon l’une quelconque des revendications précédentes, dans laquelle une bride horizontale (4; 45; 83; 94) est agencée le long de l’arête supérieure des parois latérales (3; 44; 82; 93).

7. Combinaison selon l’une quelconque des revendications précédentes, comprenant un cadre (26; 50) agencé dans l’ouverture d’afflux (25; 49), dans laquelle l’arête supérieure (26) du cadre (26; 50) fait saillie au-dessus de l’arête supérieure des parois la-
tréales (3 ; 44) et la surface supérieure de l’insert (21, 22 ; 47).

8. Combinaison selon l’une quelconque des revendications précédentes, comprenant une grille (38 ; 88) agencée dans l’ouverture d’afflux (37).


11. Combinaison selon l’une quelconque des revendications précédentes, dans laquelle la surface supérieure (33 ; 62) de l’insert (6 ; 21, 22 ; 47 ; 61 ; 85 ; 97) s’étend aussi loin que la surface inférieure de la couche de finition (8 ; 27 ; 48 ; 87 ; 100).
REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader’s convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

• DE 202006014959 [0002]