

Description

The invention relates to a building with a floor level resting upon a load bearing structure of said building, said floor level being capable of accommodating utility lines, as conduits, tubes and the like, and being provided with a covering layer.

Such a building is disclosed in WO87/03324, wherein the floor space is mainly intended to accommodate cables for electricity, telephone and computers. These cables have considerable space both vertically and horizontally to travel in and, to avoid entanglement and to guide their direction, special extensions in the frame are provided to facilitate the tying of cables to the frame. Although it could, possibly, also accommodate other lines such as water, heating, and sewage, it does not provide any guiding principle for the coordinated deployment of different kinds of lines and therefore risks a chaotic entanglement of all different systems.

Further it is generally usual to arrange the partition walls on the floor areas, which operation may or not be subject to the wishes of the user. These partition walls may be permanent or movable. All these systems have the drawback that the lines for gas, water, electricity and outlet pipes are fitted later, which involves much extra work with respect to channels to be hacked out and the like. Particularly in the case of prefab building the arranging of the lines demands a coordinated plan because decisions about one system (e.g. floors) are closely linked to decisions about another system. Passageways such as doors are moreover difficult to cross and special provisions have to be made for this purpose. All this makes the building cost comparatively high.

For further finishing the bearing floor is levelled off or covered with a covering construction in which the supply and drain lines have to be accommodated. With intersecting lines this may cause problems because a sufficient separation must be maintained between these lines. This requires much preparatory work such as determining the final arrangement and location of the lines, plotting the many dimensions, including the height dimensions. In addition, the floor and the different types of line are each laid by different craftsmen, which creates a coordination problem.

The invention has for its object to obviate the above mentioned drawbacks and provides for this purpose a building which is distinguished in that:

- the floor level comprises at least one substantially slab-like layer and said covering layer,
- said slab-like layer having grooves in its top surface having a predetermined pattern,

- said grooves being able to accommodate said utility lines of different kinds,
- duct-like parts are positioned above said grooves in a variety of layouts as described,
- said duct-like parts being capable of accommodating utility lines on a level above those placed in the said grooves,
- whereas partition walls are placed upon said duct-like parts to divide the floor area.

The concept of the invention has as starting point that the lines, which mostly extend along or in the partition walls, must be fitted directly before placing of the partition walls, and at the location where these are to be placed. This has become possible as a result of the duct-like parts which support the partition walls, these parts accommodating the required lines. Crossing at openings such as doors is furthermore easy to perform because the lines can run underneath the door opening. This makes possible the so-called "closed loop" in a "smart house".

In order to facilitate connecting of the lines to supply and outlet lines it is possible to have the covering slab-like layers of the floor provided with groove channels that are recessed out of it. These groove channels usually cross the partition walls and duct-like parts and therefore lines to be arranged in them so that easy connections can be carried out at the intersections.

Further the invention relates to a slab-like layer formed by tile-shaped elements, said tiles are provided with grooves in its top surface, these grooves forming a pre-determined pattern for accommodating utility lines of several kinds as well as for positioning duct-like parts and by grooves in its bottom surface for accommodating further utility lines on a lower level.

The advantage of the tile-shaped elements in a slab-like layer is not only that the lines can be easily placed where determining of their position is concerned, but also that supply and drain lines are placed on different levels, making it possible for the lines to cross one another without problem.

If a change is to be made, a detachable covering layer in the form of sheets attached to the tiles and the tile layer only have to be removed locally, so repair work can then be carried out in a relatively simple manner. Later placing and/or changing of lines remains possible without much breaking being necessary.

If the recesses on the upper face of the tiles are also used for attaching the upright parts, for example partition or dividing walls in the space to be laid out on the floor, it is recommended that the recesses in the upper face are arranged as grooves according to a grid pattern.

Finally the invention relates to a method for the partition of a building in separate spaces and for

the deployment of utility lines serving those spaces.

With such a method the starting point up to the current time has been the marking out of determined marker points on the covering construction of the rough floor, such marker points being used for placing of the upright parts in the space. These upright parts are for example partition or dividing walls, which normally have to be placed according to a pre-determined drawing plan. The inhabitant or user of the space has relatively little to say in this matter, because the desired changes entail difficulties in system building.

The invention has for its object to improve the above mentioned method such that each desired layout becomes possible without the demands of system building being disregarded.

The method is distinguished by:

- making a layered floor composition supported by the load bearing structure of the building,
- placing at least one slab-like layer having grooves in its upper and/or lower surface,
- placing utility lines running in the grooves of the lower surface, and/or
- placing utility lines running in the grooves of the upper surface,
- placing duct-like parts positioned above the grooves in the upper surface of the slab-like layer,
- erecting partition walls on said duct-like parts and
- placing a covering layer covering the slab-like layer between said duct-like parts.

The tiles are preferably laid abutting against one another in order to obtain a very fine-mesh matrix.

It is also possible to carry out the above stated method using the above mentioned tiles forming a slab-like layer provided with an upper surface having grooves arranged in a grid pattern, which grooves provide together with the other tiles the very fine-mesh character of the matrix. In a preferred method according to the invention there can be formed an interruption in at least one duct-like part to allow for a door or other opening in a partition wall, and in placing said covering layer leaving free the space of interruption, so as to form a recess allowing to continue utility lines placed in said duct-like part.

These and other features of the invention will be further elucidated in the figure description following hereinafter with reference to a number of embodiments.

In the drawing:

Fig. 1 shows a perspective view of a part of a building provided with an upright bearing construction having floor levels extending between,

fig. 2 is a perspective top view of a part of a floor area having placed on it members for duct-like parts and a partition wall as according to a first embodiment,

fig. 3 and 4 each show perspective views of a floor level corresponding to fig. 2 with respectively a second and third embodiment of the members for duct-like parts.

Fig. 5 shows a perspective top view of a part of a floor construction having the covering construction according to the invention arranged thereon,

fig. 6 shows a perspective top view of a complete floor having tiles according to a matrix pattern arranged thereon,

fig. 7 is a perspective view corresponding with fig. 5 of a detail of the tiles in a first embodiment,

fig. 8 shows a perspective top view corresponding with fig. 7 of a detail of the tiles as according to a second embodiment.

Indicated in the figures with the numeral 1 is the unfinished floor level of, for example, reinforced concrete. Also understood here by the term floor level is the floor of the ground floor and both higher and lower residential or user levels. The construction of the floor area can be of any type, being in prefab form or made from cast-in-situ concrete. Also falling within the idea of a floor area are floors of other materials, such as wood.

The building for residential or utility purposes shown in fig. 1 is only indicated schematically whereby a side wall 2 is shown and a floor part of the level lying directly above. In addition the rear wall 3 is shown only schematically while the wall located opposite side wall 2 is broken away for the sake of clarity.

It is assumed that the level spaces bounded by the floor areas 1 and walls 2, 3 have to be divided up into smaller rooms, such as for example living room or bedrooms, kitchen, toilet and the like. The arrangement of the living space is pre-determined and this arrangement is marked out on the rough floor 1. This is done by means of lines for instance which are designated in the drawing by 4. These lines define the position of the duct-like parts 5 to be arranged thereon, thus enabling a complete overview of the rooms to be arranged. The duct parts 5 are further explained with reference to the fig. 2-4. It is noted that at the points where there must be passageways the duct parts 5' take a recessed form.

The partition walls can next be arranged on the duct-like parts 5. The construction of these partition walls may be of random type and fall otherwise outside the scope of the invention. Conceivable here are brickwork, prefab wall panels, or a wooden bearing frame with a random sheet covering, which

may or may not be sound-proofing.

Where necessary however the duct-like parts 5 are provided in advance with lines for gas, water, electricity and also for discharge pipes.

In order to obtain an easy connection, floor 1 can be pre-formed with groove channel-like recesses 7 which extend for example along the whole periphery of floor 1, or alternatively, parallel to each other and distributed over the floor surface for example, see groove channels 7' in the upper floor level 1.

Opening into such a groove channel 7 are the exterior lines 8 fitted by the contractor. The desired line system can in this way be disposed in the building in a simple manner, without any hacking or breaking being necessary.

The duct-like parts 5 can finally be fixed in place by applying a screed layer 9, which is shown schematically in fig. 1 only in the left-hand rear corner. The principal function of the screed layer is however to obtain a "submerged" line system, as a result of which passage beneath floor level at openings is effected without problem.

Various embodiments of duct-like parts will now be explained with reference to the fig. 2-4.

The duct-like part in fig. 2 thus consists of a metal part 10 substantially bent into a U-shape, which part consists of a vertically directed standing body part 11 formed along the upper edge with an outward facing flange 12 and on the bottom edge with an outward facing flange 13. In the embodiment shown two such profiles are in each case placed back-to-back so that a substantially I-shaped profile is obtained.

The lower flange 13 is also provided with an upright end edge 14, the function of which is further described later.

Placing of such duct-like parts along the layout lines 4 and subsequent adhering in random manner of these parts to the floor 1 results in ducts opening to the outside in which the lines L can be accommodated. Such a duct intersects at some point a groove channel 7 recessed into the floor area 1 and having main lines H arranged therein. Connections can be made at the intersection of lines L and main lines H.

As a result of the laying of screed layer 9 the duct-like parts and profiles 11, and therefore also the lines L, come to lie slightly recessed relative to the top layer of the floor. These lines can in this way be fed underneath a passageway 6 that may be formed, whereby the group of lines at this passageway 6 can be covered off at the top by a hollow sill consisting for example of a U-shaped duct part 15. This duct part opening to the top can be covered off by a sill beam 15'. It is also possible to fit duct part 15 in a reverse manner to that shown. In this way a floor without sills is obtained.

The upper flanges 12 serve to accommodate a continuous strip 16 onto which a partition wall 17 can be placed. It will be apparent that after placing of this partition wall 17 the line duct and therefore the lines L remain accessible on both sides of the partition wall. The ducts can be covered off on both sides by a skirting board (not shown).

From fig. 2 it will be apparent that the height of the upright edge 14 has approximately the thickness of the screed layer 9 so that after applying of screed layer 9 the parts 11 can be completely fixed.

Fig. 3 shows an alternative embodiment, whereby the same parts are designated with the same reference numeral. A duct-like part 10 consists here of two body plates arranged at an interval from each other, whereby the upper flange 12 can be common to both body plates so that finally a reversed U-shaped cross section is obtained. The plate is formed on the underside with an outward facing flange 13 of a height such that the screed layer 9 can come to lie against it.

Duct-like parts 10 are arranged at a determined pitch s from each other so that between the duct-like parts 10 a space is left for keeping accessible the lines L fitted between body plates 11.

In order to obtain a solid construction a supporting layer 18 is laid beforehand on the floor area 1 and on this layer is arranged a batten 19 the width of which corresponds to the width of flange 12, so that the body plates 11 come down on either side of it.

Also shown in the embodiment in fig. 3 is a groove channel 7 in the floor area having therein the main lines H, which can be connected to the lines L. A line L can also be bent directly into main line 7. Also shown is a line L' accommodated parallel to the duct-like parts 10 in the screed layer, which line continues into groove channel 7 of the floor area. Such a line construction may be necessary due to separating of lines of different types, for instance electricity cables and water pipes.

After the lines are connected and the partition wall 17 positioned, the duct-like parts 11 can be covered on either side by a skirting board 20, the construction of which may likewise be random. Owing to the recesses between the duct-like parts 11, wall junction boxes 21 and the like can be located in the skirting board and replaced later.

Fig. 4 shows a third embodiment whereby the duct-like part consists of a gabion-like construction consisting of longitudinal rods 22 and cross-bars 23. The construction is such that a U-shaped cross section is obtained so that two standing body parts are realized arranged at an interval from each other, connected together at the bottom and reinforced by extra cross-bars 24. These rest on a continuous strip 18 which is pre-fitted on the floor

area 1.

Cross-bars 23 are joined to each other at the top by an angle piece 25 of which the horizontal outward facing flange serves as support surface for the partition wall 17 to be arranged thereon or a pre-laid bearing strip 16.

This embodiment lends itself for pre-laying of the lines L in between the standing cross-bars 23 while the lines L nevertheless remain accessible from the side after placing of the partition wall 17. The connection with main lines H lying in groove channel 7 is here also possible without a great deal of work.

As in the previously described embodiments the duct-like part is covered at the side by a random skirting board 20.

It will be apparent that in this embodiment the screed layer 9 can also fix duct-like part 5 in position.

The floor construction shown in fig. 5 consists of a supporting floor 31, which is manufactured, cast or prefabricated in advance in the building structure (not shown). The bearing construction 31 may be of any random dimensions and is considered to fall outside the scope of the invention.

According to the invention tiles 33 are arranged on the flat or, if required, levelled off upper surface 32 of the supporting floor, such tiles having predetermined dimensions. The tiles lie in rows parallel to a reference line A-A, which is predefined in a co-ordinate system X-Y determined by a longitudinal and transverse edge of the rough floor. The line A-A may also run diagonally.

The tiles are rectangular and preferably square. The upper face of each tile is provided with recesses, here in the form of intersecting grooves 34. The grooves shown are laid such that the raised parts lying between them again form a regular pattern, whereby they are disposed over the surface such that the raised parts 35 along the edges together with the parts of the adjoining tile will have the same dimension as the raised parts 36 located inside.

The tile is formed on the bottom with a recess 37, which preferably extends along the periphery thereof.

Laying of the tiles 33 against one another therefore creates from the grooves 34 continuous channels on the upper side and channels on the underside made up of the recesses 37. The channels at the top may be used for laying of lines 38, for example water pipes and electricity cables, which are separated from each other by the raised parts 36 of the tiles. On the underside outlet lines 39 may be arranged, from which is apparent that the crossing of supply and drain lines takes place on different levels, which enables system building to be carried out more easily.

If the drain line 39 is larger in diameter than the inner periphery of the channel formed by the recesses 37, an edge strip of the tile can then be easily removed owing to the small thickness between the edge groove 34 and the recess 37 in the tile.

Grooves 34 may also be used for arranging attachment means 40 for the upright parts, for example a partition wall 41 as illustrated in fig. 5. The attaching parts 40, for example in the form of wooden blocks, may be arranged in advance at the place where a partition wall 41 is planned (see fig. 2). Subsequently a foot part of the wall 41, for example in the shape of a skirting construction 47, may be laid on blocks 40, without additional work for the dimensioning thereof being necessary. A very fine-mesh matrix is in any case formed by the grooves 34, making it possible to determine the dimensioning of the area to be laid out above the floor in a simple manner during construction, without it being necessary to carry out additional measurements. Not only does this reduce mistakes during measurement, it also considerably accelerates the building process. In addition, the location of the partition walls 41 can be easily determined per space in accordance with the wishes of the future user, even during construction. In this way systematic construction is maintained without difficulty. The same applies to alterations in the layout which may be desired at a later stage. It is noted that the walls need not necessarily run along the grooves, but may also enclose an angle with them (see 41').

After the partition walls 41 have been placed on the tiles, a covering layer 42 can be fitted, which is shown here in the form of sheets of any desired material. These sheets too can have standard dimensions and are laid unattached on the tiles 33. The sheets can be fitted to one another along their edges by means of connecting strips 43, which are let into the grooves 34 beforehand. The sheets are subsequently attached onto the strips 43 by means of nails 44.

Owing to the continuous groove 34 under the partition wall 41, continuous strips 43 can also be arranged under partition wall 41, onto which strips the covering layer 42 can be nailed down in order to prevent flapping up along the edges of the room.

In an embodiment of the tiles as according to fig. 7 and 8, the grooves 34 are widened locally at 45 such that when the tiles 33 are laid against one another (see fig. 7), a recess in the form of a square or rectangle (see at 46) is obtained. In this recess a block can be inserted which may serve as a connection for four corner points of the sheets in the covering layer 42 by nailing of these corners to the block. It is on the other hand possible to use the recess for auxiliary material, e.g. junction boxes

and the like, for the lines to be placed in the recesses. In the embodiment according to fig. 8 the square recess 45' has been arranged in the tile itself, into which is inserted the associated block 47 for nailing.

Such an embodiment makes it possible to determine the position of the tile 33 relative to the space owing to the asymmetrical location of the recess 45', so that when the tiles are laid correctly, a main measurement of the matrix obtained can be determined in a simple manner. This makes it easier to determine the measurements required.

The invention is not limited to the embodiments described above. The tile for example need not be square, but may also have a rectangular form. The recess 34 may also take a form different from the grooves shown. The number of grooves per tile may deviate from that which is drawn. Finally, the tiles need not lie abutting one another, but some distance may also be maintained between them.

Claims

1. A building, with a floor level resting upon a load bearing structure (1, 31) of said building, said floor level being capable of accommodating utility lines (H, L, 38, 39), as conduits, tubes and the like, and being provided with a covering layer (42), characterized in that
 - the floor level comprises at least one substantially slab-like layer (9) and said covering layer (42),
 - said slab-like layer (9) having grooves (7, 34) in its top surface having a predetermined pattern,
 - said grooves being able to accommodate said utility lines of different kinds,
 - duct-like parts (5) are positioned above said grooves in a variety of layouts as desired within said predetermined pattern,
 - said duct-like parts (5) being capable of accommodating said utility lines on a level above those placed in the said grooves,
 - wherein partition walls (17) are placed upon said duct-like parts to divide the floor area.
2. A building with a floor level, as claimed in claim 1, characterized in that a separate interface part, like tongue means (40), is provided for helping to position the duct-like parts relative to the grooves (34) in the top surface of said slab-like layer.
3. A building with a floor level, as claimed in claim 1 or 2, characterized by at least one interruption (5') in at least one duct-like part (5) to allow for doors and other openings in the partition walls supported by them, wherein the covering layer (42) borders the space of interruption, leaving a recess for said utility lines.
4. A building with a floor level, as claimed in claim 3, characterized in that a special duct-like part (5', 15') fits in said recess to accommodate said utility lines (L) running from one duct-like part (5) to another.
5. A building with a floor level, as claimed in any of the claims 1-4, characterized in that the slab-like layer is formed by tile-shaped elements (33) and the said covering layer (42) is arranged over these tile-shaped elements, said grooves (34) are arranged according said predetermined pattern in the top surface of the tile-shaped elements.
6. A building with a floor level as claimed in any of the claims 1-5, characterized in that said grooves (34) in the top surface of said tile-shaped elements are intersecting according to a grid-like pattern.
7. A building with a floor level, as claimed in claim 5 or 6, characterized in that further grooves or recesses (37) are arranged in the bottom surface of the tile-shaped elements (33) to accommodate lines on a level below the one formed by the grooves (34) in the top surface of the slab-like layer.
8. A building with a floor level, as claimed in claim 7, characterized in that the recesses (37) on the underside extend along the periphery of the tile-shaped element (33), whilst said tile-shaped elements are placed contiguous adjacent to each other.
9. A building with a floor level, as claimed in claim 7 or 8, characterized in that the grooves (34) in the top surface of the slab-like layer differ in profile and width from the grooves (37) in the bottom surface.
10. A building with a floor level, as claimed in claim 7, characterized that the grooves (34) in the upper surface of the slab-like layer form a lay-out that is different from the lay-out formed by the grooves (37) in the bottom surface of the slab-like layer.



and the like, for the lines to be placed in the recesses. In the embodiment according to fig. 8 the square recess 45' has been arranged in the tile itself, into which is inserted the associated block 47 for nailing.

Such an embodiment makes it possible to determine the position of the tile 33 relative to the space owing to the asymmetrical location of the recess 45', so that when the tiles are laid correctly, a main measurement of the matrix obtained can be determined in a simple manner. This makes it easier to determine the measurements required.

The invention is not limited to the embodiments described above. The tile for example need not be square, but may also have a rectangular form. The recess 34 may also take a form different from the grooves shown. The number of grooves per tile may deviate from that which is drawn. Finally, the tiles need not lie abutting one another, but some distance may also be maintained between them.

Claims

1. A building, with a floor level resting upon a load bearing structure (1, 31) of said building, said floor level being capable of accommodating utility lines (H, L, 38, 39), as conduits, tubes and the like, and being provided with a covering layer (42), characterized in that
 - the floor level comprises at least one substantially slab-like layer (9) and said covering layer (42),
 - said slab-like layer (9) having grooves (7, 34) in its top surface having a predetermined pattern,
 - said grooves being able to accommodate said utility lines of different kinds,
 - duct-like parts (5) are positioned above said grooves in a variety of layouts as desired within said predetermined pattern,
 - said duct-like parts (5) being capable of accommodating said utility lines on a level above those placed in the said grooves,
 - wherein partition walls (17) are placed upon said duct-like parts to divide the floor area.
2. A building with a floor level, as claimed in claim 1, characterized in that a separate interface part, like tongue means (40), is provided for helping to position the duct-like parts relative to the grooves (34) in the top surface of said slab-like layer.
3. A building with a floor level, as claimed in claim 1 or 2, characterized by at least one interruption (5') in at least one duct-like part (5) to allow for doors and other openings in the partition walls supported by them, wherein the covering layer (42) borders the space of interruption, leaving a recess for said utility lines.
4. A building with a floor level, as claimed in claim 3, characterized in that a special duct-like part (5', 15') fits in said recess to accommodate said utility lines (L) running from one duct-like part (5) to another.
5. A building with a floor level, as claimed in any of the claims 1-4, characterized in that the slab-like layer is formed by tile-shaped elements (33) and the said covering layer (42) is arranged over these tile-shaped elements, said grooves (34) are arranged according said predetermined pattern in the top surface of the tile-shaped elements.
6. A building with a floor level as claimed in any of the claims 1-5, characterized in that said grooves (34) in the top surface of said tile-shaped elements are intersecting according to a grid-like pattern.
7. A building with a floor level, as claimed in claim 5 or 6, characterized in that further grooves or recesses (37) are arranged in the bottom surface of the tile-shaped elements (33) to accommodate lines on a level below the one formed by the grooves (34) in the top surface of the slab-like layer.
8. A building with a floor level, as claimed in claim 7, characterized in that the recesses (37) on the underside extend along the periphery of the tile-shaped element (33), whilst said tile-shaped elements are placed contiguous adjacent to each other.
9. A building with a floor level, as claimed in claim 7 or 8, characterized in that the grooves (34) in the top surface of the slab-like layer differ in profile and width from the grooves (37) in the bottom surface.
10. A building with a floor level, as claimed in claim 7, characterized in that the grooves (34) in the upper surface of the slab-like layer form a lay-out that is different from the lay-out formed by the grooves (37) in the bottom surface of the slab-like layer.



11. A building with a floor level, as claimed in any of the claims 1-10, characterized in that at least one groove of the slab-like layer is widened locally (46).

12. A building with a floor level, as claimed in claim 11, characterized in that the widening is found at intersections of two grooves (34).

13. A slab-like layer formed by tile-shaped elements and for use in a building as claimed in any of the preceding claims, characterized in that said tiles are provided with grooves (34) in its top surface, these grooves forming a predetermined pattern for accommodating utility lines of several kinds as well as for positioning duct-like parts and by grooves (37) in its bottom surface for accommodating further utility lines on a lower level.

14. A slab-like layer according to claim 13, characterized in that said grooves in the top surface are arranged such, as to form a grid-like pattern.

15. A method for the partition of a building in separate spaces and for the deployment of utility lines serving those spaces, characterized by:

- making a layered floor composition supported by the load bearing structure (1) of the building,
- placing at least one slab-like layer having grooves in its upper and/or lower surface,
- placing utility lines running in the grooves of the lower surface, and/or
- placing utility lines running in the grooves of the upper surface,
- placing duct-like parts positioned above the grooves in the upper surface of the slab-like layer,
- erecting partition walls (17) on said duct-like parts (5) and
- placing a covering layer (43) covering the slab-like layer between said duct-like parts.

16. A method according to claim 15, providing utility lines in said duct-like parts.

17. A method according to claims 15 or 16, characterized in forming an interruption (5') in at least one duct-like part (5) to allow for a door or other opening in a partition wall, and in placing said covering layer (43) leaving free the space of interruption, so as to form a recess allowing to continue utility lines placed in said duct-like part.

Patentansprüche

1. Ein Gebäude mit einer Bodenfläche, die auf einer lasttragenden Struktur (1, 31) des Gebäudes ruht, wobei die Bodenfläche in der Lage ist, Versorgungsleitungen (H, L, 38, 39), wie Leitungen, Rohre und dergleichen aufzunehmen, und mit einer Deckschicht (42) versehen ist, dadurch gekennzeichnet, daß

- die Bodenfläche zumindestens eine im wesentlichen plattenförmige Schicht (9) und die Deckschicht (42) umfaßt,
- die plattenförmige Schicht (9) in ihrer Oberseite Nuten (7, 34) mit einem vorgegebenen Muster aufweist,
- die Nuten in der Lage sind, die Versorgungsleitungen unterschiedlicher Arten aufzunehmen,
- kanalförmige Teile (5) über den Nuten in einer Vielzahl von gewünschten Auslegungen innerhalb des vorgegebenen Musters angeordnet sind,
- die kanalförmigen Teile (5) in der Lage sind, die Versorgungsleitungen in einer Höhenlage oberhalb der Versorgungsleitungen aufzunehmen, die in den Nuten angeordnet sind,
- während Trennwände (17) auf die kanalförmigen Teile aufgesetzt sind, um den Bodenbereich zu unterteilen.

2. Ein Gebäude mit einer Bodenfläche nach Anspruch 1, dadurch gekennzeichnet, daß ein getrenntes Übergangsteil wie z.B. ein Zungenteil (40) zur Unterstützung der Positionierung der kanalförmigen Teile gegenüber den Nuten (34) der oberen Fläche der plattenförmigen Schicht vorgesehen ist.

3. Ein Gebäude mit einer Bodenfläche nach Anspruch 1 oder 2, gekennzeichnet durch zumindestens eine Unterbrechung (5') in zumindestens einem kanalförmigen Teil (5) zur Berücksichtigung von Türen oder anderen Öffnungen in den Trennwänden, die von den kanalförmigen Teilen (5) getragen werden, wobei die Deckschicht (42) an den Unterbrechungsraum angrenzt und eine Ausnehmung für die Versorgungsleitungen übrig läßt.

4. Ein Gebäude mit einer Bodenfläche nach Anspruch 3, dadurch gekennzeichnet, daß ein spezielles kanalförmiges Teil (5', 15') in die Ausnehmung paßt, um die Versorgungsleitungen (L) aufzunehmen, die von einem kanalförmigen Teil (5) zum anderen verlaufen.



5. Ein Gebäude mit einer Bodenfläche nach einem der Ansprüche 1-4,
dadurch gekennzeichnet, daß die plattenförmige Schicht durch Formstücke (33) gebildet ist, und daß die Deckschicht (42) über diesen Formstücken angeordnet ist, wobei die Nuten (34) entsprechend dem vorgegebenen Muster in der oberen Fläche der Formstücke angeordnet sind. 5
6. Ein Gebäude mit einer Bodenfläche nach einem der Ansprüche 1-5,
dadurch gekennzeichnet, daß die Nuten (34) in der oberen Fläche der Formstücke Elemente sind, die gemäß einem gitterförmigen Muster schneiden. 10
7. Ein Gebäude nach Anspruch 5 oder 6,
dadurch gekennzeichnet, daß weitere Nuten oder Ausnehmungen (37) in der unteren Fläche der Formstücke (33) angeordnet sind, um Leitungen in einer Höhenlage unterhalb derjenigen aufzunehmen, die von den Nuten (34) in der oberen Fläche der plattenförmigen Schicht gebildet ist. 15
8. Ein Gebäude mit einer Bodenfläche nach Anspruch 7,
dadurch gekennzeichnet, daß sich die Ausnehmungen (37) auf der Unterseite entlang des Umfangs des Formstückes (33) erstrecken, während die Formstücke aneinander angrenzend angeordnet sind. 20
9. Ein Gebäude mit einer Bodenfläche nach Anspruch 7 oder 8,
dadurch gekennzeichnet, daß die Nuten (34) in der oberen Fläche der plattenförmigen Schicht hinsichtlich ihres Profils und ihrer Breite von den Nuten (37) in der unteren Oberfläche abweichen. 25
10. Ein Gebäude mit einer Bodenfläche nach Anspruch 7,
dadurch gekennzeichnet, daß die Nuten (34) in der oberen Fläche der plattenförmigen Schicht eine Auslegung bilden, die von der Auslegung abweicht, die durch die Nuten (37) in der unteren Oberfläche der plattenförmigen Schicht gebildet ist. 30
11. Ein Gebäude mit einer Bodenfläche nach einem der Ansprüche 1-10,
dadurch gekennzeichnet, daß zumindestens eine Nut der plattenförmigen Schicht (46) erweitert ist. 35
12. Ein Gebäude mit einer Bodenfläche nach Anspruch 11,
dadurch gekennzeichnet, daß sich die Erweiterung an der Schnittstelle von zwei Nuten (34) befindet. 40
13. Eine plattenförmige Schicht, die durch Formstücke gebildet ist und zur Verwendung in einem Gebäude nach einem der vorhergehenden Ansprüche bestimmt ist,
dadurch gekennzeichnet, daß die Formstücke in ihrer oberen Fläche mit Nuten (34) versehen sind, daß diese Nuten ein vorgegebenes Muster zur Aufnahme von Versorgungsleitungen verschiedener Arten sowie zur Positionierung von kanalförmigen Teilen bilden, und daß Nuten (37) in der unteren Oberfläche angeordnet sind, um weitere Versorgungsleitungen in einer niedrigeren Höhenlage aufzunehmen. 45
14. Eine plattenförmige Schicht nach Anspruch 13,
dadurch gekennzeichnet, daß die Nuten in der oberen Fläche so angeordnet sind, daß sie ein gitterförmiges Muster bilden. 50
15. Ein Verfahren zur Unterteilung eines Gebäudes in getrennte Räume und zum Verlegen von Versorgungsleitungen, die diese Räume versorgen,
gekennzeichnet durch die folgenden Schritte:
 - Herstellung einer geschichteten Bodenkonstruktion, die durch die lasttragende Struktur (1) des Gebäudes abgestützt ist,
 - Anordnung von zumindestens einer plattenförmigen Schicht, die Nuten in ihrer oberen und/oder unteren Fläche aufweist,
 - Anbringen der Versorgungsleitungen, die in den Nuten der unteren Fläche verlaufen, und/oder
 - Anbringen von Versorgungsleitungen, die in den Nuten der oberen Fläche verlaufen,
 - Anordnung von kanalförmigen Teilen, die oberhalb der Nuten in der oberen Oberfläche der plattenförmigen Schicht angeordnet sind,
 - Errichten von Trennwänden (17) auf den kanalförmigen Teilen (5), und
 - Aufbringen einer Schicht (43), die die plattenförmige Schicht zwischen den kanalförmigen Teilen abdeckt.
16. Ein Verfahren nach Anspruch 15, bei dem Versorgungsleitungen in den kanalförmigen Teilen verlegt werden. 55
17. Ein Verfahren nach Anspruch 15 oder 16,
dadurch gekennzeichnet, daß eine Unterbre-



chung (5') in zumindest einem kanalförmigen Teil (5) ausgebildet wird, um eine Tür oder eine andere Öffnung in einer Trennwand zu berücksichtigen, und daß die Deckschicht (43) so angeordnet wird, daß der Unterbrechungsraum freigelassen wird, so daß eine Ausnehmung gebildet wird, die die Weiterführung von Versorgungsleitungen in dem kanalförmigen Teil ermöglicht.

Revendications

1. Bâtiment, avec une plate-forme formant sol reposant sur une structure porteuse (1, 31) dudit bâtiment, ladite plate-forme formant sol pouvant recevoir les conduites des différents réseaux (H, L, 38, 39) telles que des canalisations, des tubes et similaires, et étant pourvue d'une couche de couverture (42), caractérisé en ce que

- la plate-forme formant sol comprend au moins une couche sensiblement de type dalle (9) et ladite couche de couverture (42),
- ladite couche de type dalle (9) présentant des gorges (7, 34) ménagées dans sa surface supérieure formant un dessin prédéterminé,
- lesdites gorges pouvant recevoir lesdites conduites des différents réseaux,
- des éléments de type goulottes (5) sont positionnés au-dessus desdites gorges selon une variété de dispositions, en fonction dudit dessin prédéterminé,
- lesdits éléments de type goulottes (5) peuvent recevoir lesdites conduites provenant des différents réseaux sur un niveau situé au-dessus des conduites placées dans lesdites gorges,
- les cloisons de séparation (17) sont placées sur lesdits éléments de type goulottes pour diviser la zone formant sol.

2. Bâtiment avec une plate-forme formant sol, selon la revendication 1, caractérisé en ce qu'un élément d'interface séparé, tel qu'un moyen formant languette (40) est prévu pour permettre de positionner les éléments de type goulottes par rapport aux gorges (34) dans la surface supérieure de ladite couche de type dalle.

3. Bâtiment avec une plate-forme formant sol, selon les revendications 1 ou 2, caractérisé en ce qu'au moins une interruption est prévue dans au moins un élément de type goutte (5) pour les portes et autres ouvertures ménagées dans les cloisons de séparation supportées par

ces éléments de type goulottes, la couche de couverture (42) bordant l'espace d'interruption, en laissant un évidement pour recevoir lesdites conduites des différents réseaux.

4. Bâtiment avec une plate-forme formant sol, selon la revendication 3, caractérisé en ce qu'un élément spécial de type goutte (5', 15') s'insère dans ledit évidement pour recevoir lesdites conduites des différents réseaux (L) passant d'un élément de type goutte (5) à l'autre.

5. Bâtiment avec une plate-forme formant sol, selon l'une quelconque des revendications 1 - 4, caractérisé en ce que la couche de type dalle est formée par des éléments en forme de carreaux (33) et ladite couche de couverture (42) est disposée au-dessus de ces éléments en forme de carreaux, lesdites gorges (34) étant disposées selon ledit dessin prédéterminé dans la surface supérieure des éléments en forme de carreaux.

6. Bâtiment avec une plate-forme formant sol, selon l'une quelconque des revendications 1 à 5, caractérisé en ce que lesdites gorges (34) ménagées dans la surface supérieure desdits éléments en forme de carreaux se croisent selon un dessin en forme de grille.

7. Bâtiment avec une plate-forme formant sol, selon les revendications 5 ou 6, caractérisé en ce que d'autres gorges ou évidements (37) sont prévus dans la surface inférieure des éléments en forme de carreaux (33) pour recevoir des conduites sur un niveau situé au-dessous du niveau formé par les gorges (34) dans la surface supérieure de la couche de type dalle.

8. Bâtiment avec une plate-forme formant sol, selon la revendication 7, caractérisé en ce que les évidements (37) ménagés sur la surface inférieure s'étendent le long de la périphérie de l'élément en forme de carreau (33), tandis que lesdits éléments en forme de carreaux sont contigus et adjacents les uns aux autres.

9. Bâtiment avec une plate-forme formant sol, selon la revendication 7 ou la revendication 8, caractérisé en ce que les gorges (34) ménagées dans la surface supérieure de la couche de type dalle présentent un profil et une largeur différente par rapport aux gorges (37) ménagées dans la surface inférieure.

10. Bâtiment avec une plate-forme formant sol, selon la revendication 7, caractérisé en ce que



les gorges (34) ménagées dans la surface supérieure de la couche de type dalle ont une disposition qui est différente de la disposition des gorges (37) ménagées dans la surface inférieure de la couche de type dalle.

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11. Bâtiment avec une plate-forme formant sol, selon l'une quelconque des revendications 1 à 10, caractérisé en ce qu'au moins une gorge de la couche de type dalle est localement élargie (46).

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12. Bâtiment avec une plate-forme formant sol, selon la revendication 11, caractérisé en ce que l'élargissement se situe au niveau de l'intersection de deux gorges (34).

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13. Couche de type dalle formée par des éléments en forme de carreaux, prévue pour être utilisée dans un bâtiment selon l'une quelconque des revendications précédentes, caractérisée en ce que lesdits carreaux sont pourvus de gorges (34) ménagées dans leurs surfaces supérieures, ces gorges formant un dessin prédéterminé pour recevoir des conduites des différents réseaux ainsi que pour positionner des éléments de type goulottes, ainsi que de gorges (37) ménagées dans leurs surfaces inférieures pour recevoir des conduites des différents réseaux sur un niveau inférieur.

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14. Couche de type dalle, selon la revendication 13, caractérisée en ce que lesdites gorges ménagées dans la surface supérieure sont disposées de telle sorte qu'elles forment un dessin en forme de grille.

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15. Procédé pour cloisonner un bâtiment en espaces séparés et pour disposer les conduites des différents réseaux desservant ces espaces, caractérisé en ce qu'il consiste à:

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- effectuer une composition de sol en couches supporté par la structure porteuse (1) du bâtiment,
- placer au moins une couche de type dalle présentant des gorges ménagées dans sa surface supérieure et/ou inférieure,
- placer des conduites des différents réseaux dans les gorges ménagées dans la surface inférieure et/ou,
- placer des conduites des différents réseaux dans les gorges ménagées dans la surface supérieure,
- placer des éléments de type goulottes positionnés au-dessus des gorges ménagées dans la surface supérieure de la couche de type dalle,

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- monter des cloisons de séparation (17) sur lesdits éléments de type goulottes (5) et,

- placer une couche de couverture (43) recouvrant la couche de type dalle entre lesdits éléments de type goulottes.

16. Procédé selon la revendication 15, prévoyant la pose de conduites de différents réseaux dans lesdits éléments de type goulottes.

17. Procédé selon les revendications 15 ou 16, caractérisé en ce qu'il consiste à former une interruption (5') dans au moins un élément de type goulotte (5) pour une porte ou une autre ouverture ménagée dans une paroi formant cloison, et à placer ladite couche de couverture (43) en laissant l'espace d'interruption libre, de manière à former un évidement permettant le passage des conduites des différents réseaux placées dans ledit élément de type goulotte.