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Remarks:
Claims 16 - 17 are deemed to be abandoned due to non-payment of the claims fees (Rule 45(3) EPC).

(54) INSULATING DAMP COURSE ELEMENT

(57) The present invention relates to a damp course element for placement between a foundation and a superstructure of a building. The present invention further relates to a method for manufacturing such a damp course element and a damp course comprising such damp course elements. Accordingly, in a first aspect, a damp course element is provided for placement between a foundation and a superstructure of a building, wherein the superstructure of the building is comprised of building walls, at least comprising an inner wall and an outer wall and wherein the damp course element comprises a foundation side oriented towards the foundation, and a superstructure side faced towards the superstructure. At least one of the aforementioned objectives is achieved by a damp course element which is substantially manufactured from insulating material and comprised of a repeating pattern of through-holes between the foundation side and the superstructure side.

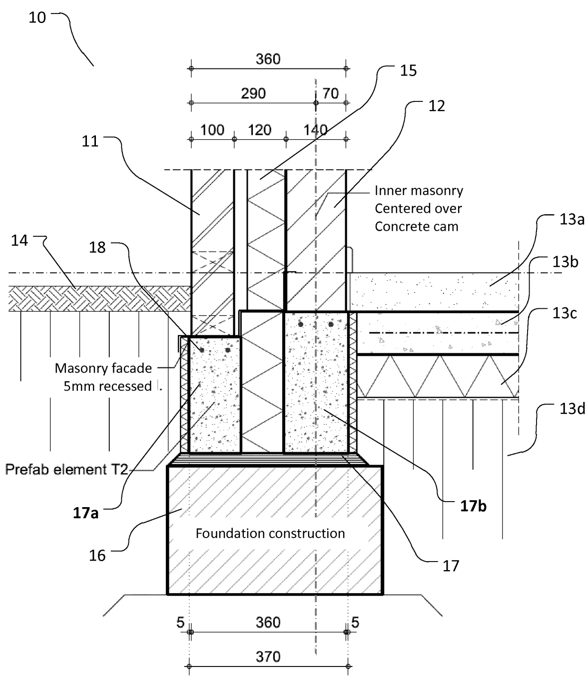

Fig. 1

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Description

[0001] The present invention relates to a damp course element for placement between a foundation and a superstructure of a building.

[0002] The present invention further relates to a method of manufacturing such a damp course element, and a damp course comprising such damp course elements.

[0003] A damp course, also referred to as a concrete damp course, is often a masonry wall of a certain height, often 5 or 6 layers of bricks below, and up to 5 or 6 layers of bricks above the ground level. A plurality of damp course elements on top of a foundation together form a damp course. On the damp course the inner and outer wall are subsequently pulled up.

[0004] A damp course is generally carried out in a hard brick stone or a hard mortar, such to prevent moisture from the soil surrounding the building from pulling up. Without a damp course damage may be caused by frost formed in the lower layer of bricks, such as a result of damp pulling up into the stones and the subsequent freezing thereof. By expansion of the freezing moisture, the bricks can break, with all its consequences. To prevent this, known damp courses are mostly comprised of stones with low or virtually no capillary function. Often mortar is used as a binder between the bricks of the damp course. Also, the entire damp course can be carried out in mortar. Mortar, however, in turn has the disadvantage that the insulating value is relatively low and as a result thereof, a lot of energy is lost through the damp course.

[0005] In the context of this invention to both mortar and cement is referred to. Mortar is, however, not to be interpreted as limited in this context, but only as an example of a binder which is used for buildings. Mortar is in this context therefore considered to be also comprising other binders provided that include cement, concrete, mortar or other (fiber) cement products.

[0006] A disadvantage of known damp courses, is that the manufacturing thereof is labour-intensive. Not only is the brick-laying of the bricks of the damp course labour-intensive, but prior to the brick-laying a plurality of reference points or marker points between which the walls are to be built must also be set out. The precise conversion of the floor plan of the building towards the setting up of the reference points is also labour-intensive.

[0007] Another disadvantage of known damp courses is that the use of mortar is also labour-intensive, because a shuttering is to be made, which set-up is labour-intensive as well. Moreover, the insulation value of the mortar is relatively low and as a result thereof, the mortar-formed walls create a cold bridge.

[0008] With the ever increasing importance of insulation value of buildings and the desire to reduce costs in the construction process, there is a need for a simplified damp course with improved insulation value.

[0009] It is an object of the present invention to provide a damp course element for placement between a foundation and a superstructure of a building, in which the time for realisation of the damp course is reduced.

[0010] Another object of the present invention is to provide a damp course element for placement between a foundation and a superstructure of a building, in which the insulation value of the damp course in relation to known damp courses is relatively high.

[0011] The present invention accordingly provides, in a first aspect, a damp course element for placement between a foundation and a superstructure of a building, wherein the superstructure of the building comprises building walls which comprise at least an inner wall and an outer wall, in which the damp course element is comprised of a foundation side oriented towards the foundation and a superstructure side oriented towards the superstructure. At least one of the aforementioned objects is achieved by the damp course element being at least substantially constructed out of insulating material and comprises a repeating pattern of between the foundation and superstructure side provided through-holes.

[0012] A damp course formed by a plurality of the aforementioned damp course elements can be manufactured by placing the damp course elements on the foundation and to pour it with mortar or other building material comprising previously introduced binders. The damp course is thereby formed by the mortar present in the holes that extends from the foundation towards the superstructure. These mortar parts or support elements, also called cement lugs, ensure that the damp course has sufficient strength to support the construction of the building. Depending on the superstructure, larger holes or a larger amount of holes per linear metre can be selected in order to increase the level of mortar in the damp course and to thus increase the load capacity of the damp course. There where no holes are present in the damp course, the damp course is formed by the insulating material of the damp course element. This has the advantage that at least a larger part of the damp course is comprised of insulating material, which increases the insulation value of the damp course.

[0013] Because the damp course is built up from such damp course elements which correspond to the shape of the foundation and superstructure, the damp course does not have to comprise a plurality of rows of bricks from which it is to be manufactured. The use of such relatively large pre-formed building blocks strongly decreases the labour-intensiveness of the manufacturing of the damp course.

[0014] With a damp course element according to a first aspect of the invention the necessity of the setting up a plurality of reference points is also greatly reduced. Per building wall just a starting point and endpoint are to be set up, between which points one or more damp course elements can be placed. This also eliminates the necessity of the use of a profile along which the bricks are to be bricked or concrete is to be poured.

[0015] Because insulating material is often much lower in weight than bricks and/or mortar used in damp courses, a damp course element according to the invention is also more easy to install and handle.

[0016] In a further embodiment, the through-holes are arranged in two planes and the superstructure of the building comprises building walls comprised of at least an inner wall and an outer wall, wherein the two planes are formed by the inner wall and the outer wall of the superstructure.

[0017] Not the entire damp course construction is to be comprised in all cases of a solid part. By arranging the through-holes in two planes, which means two rows which in length of the damp course element are arranged parallel to each other and wherein one row is provided between the foundation and the outer wall and the other row between the foundation and the inner wall, the building superstructure is actually adopted in the damp course construction. Connecting elements, i.e. concrete- or mortar-filled holes, are provided at equal or unequal distances from each other, which can carry the inner and outer walls on the foundation. Since the area between the inner and outer walls is not provided with holes, thus not poured with mortar, the maximum insulation value is maintained. Seen from the cross-section of the damp course, this results in a high insulation value.

[0018] In an embodiment, the through-holes can be arranged in two rows parallel to each other. These rows correspond with the inner and outer wall. Naturally, there can also be more rows, for example three, in the case of a superstructure that consists of three walls, an outer wall, an inner wall and an intermediate wall.

[0019] The damp course element is poured with mortar after its placement on the foundation. This can be done continuously, but can also be done in various stages, wherein in a first stage, the damp course element is fixed by a first minimal layer of mortar, which after curing causes the damp course element to be fixated. In a next stage, the damp course element can be completely poured with mortar by which the full damp course is manufactured. The holes are then completely filled with mortar, by which the full damp course consists of original insulation material and holes filled with mortar.

[0020] In a further embodiment, the holes can also be connected with each other horizontally. That is to say, that no separate connecting elements are formed between the foundation and the superstructure but that these, preferably on the side of the foundation are connected with each other. In the longitudinal direction of the damp course element the holes form U-shaped hollow spaces, which are to be poured with mortar which creates a corresponding U-shaped bridge, or an inverted U-shaped bridge. After pouring the damp course elements with mortar, concrete, concrete mortar or the like, the damp course consists of insulating material with a plurality of U-shaped pillars of mortar or the like. In the bridge part of the U-shaped hollow space, a reinforcement element can be inserted in the mortar, for example a reinforcement such as Murfor carried out in, for example, 10 mm.

[0021] In a further embodiment, the positions of the through-holes in the one plane and the positions of the through-holes in the other plane are staggered relative to each other.

[0022] In a transverse view of the damp course, thus transversely to the longitudinal direction thereof, being the transverse direction from the outer wall to the inner wall or vice versa, by the staggered positions of the wall, the insulation value at each position in the damp course is equally high. When the positions of the holes would be the same for the first and second rows, and thus to the extension of the outer wall and the inner wall, a low insulation value would exist in situ the through holes, which is determined only or largely by the distance between the two rows. At those positions where no holes would be provided the whole thickness would consist of insulating material. Due to staggering of the positions of the holes relative to each other, it allows the thickness of the insulating material at any position to be equal to the thickness of the damp course minus one times the thickness of a hole that is filled with mortar.

[0023] If small holes are made, then the pillars or support elements which are created there after pouring the holes with mortar, are small. Depending on the construction of the building, it would be sufficient to use smaller holes and thus smaller pillars as long as they can carry the weight of the building. In case of small holes, the amount of insulation in the damp course is high. In addition to making larger holes, and in particular thicker holes seen transversely to the longitudinal direction of the damp course element, the carrying capacity may also be increased by placing the holes closer to one another within a row.

[0024] In another embodiment, the damp course element extends over the entire length of one of the superstructure walls of the construction.

[0025] The damp course elements can be carried out in standard building blocks with standard sizes, for example in the size of 50 cm wide, but also in various standard sizes such as 25 cm, 50 cm, 75 cm, 100 cm, 150 cm, etc. A damp course can thus be formed for most constructions with the aid of these different, standardized sizes.

[0026] However, in a preferred embodiment, a damp course element is manufactured with a length which is equal to the entire building wall, that is to say, a wall where there are no corners in it. This damp course element can then in advance be manufactured instantly in the correct dimension by a milling machine, CNC/CAD-CAM or the like. This greatly reduces the construction time for the damp course. For a simple square building with square-shaped foundation for example, only four damp course elements have to be manufactured. In addition, the number of set up points or reference points needed to properly align the damp course is significantly lower.

[0027] In a further embodiment, the through-holes comprise a cross-sectional shape according to any one selected from the group consisting of: round, square, pentagonal, hexagonal, star-shaped, polygonal and arch-shaped.

[0028] The through-holes can be provided in different forms. Assuming a two-dimensional form, these can be round, square, pentagonal, rectangular, hexagonal, star-shaped, polygonal or even arch-shaped. In a three-dimensional form, the round shape becomes a cylinder, or cone, the square a column or a pyramid shape, etc., etc. A skilled person will understand what other shapes are possible and appropriate.

[0029] In yet a further embodiment, the through-holes are tapered.

[0030] As indicated, these shapes can be straight but also tapered. This means that a round shape becomes a cone shape and a square shape may be trapezoidal or pyramid-shaped.

[0031] In yet a further embodiment, the tapered side of the through-holes of the damp course element are in one plane provided on the foundation side and in the other plane on the superstructure side.

[0032] By providing the tapered sides of the holes in one row on the bottom, that is to say, the side of the foundation, and in the other row at the top, that is to say, the superstructure side, a symmetrical whole is formed which is complementary to each other. As a result, not only at every position the width is equal to the thickness of the insulating material, but also seen in any position in the height of the element.

[0033] In a further embodiment, the damp course element is formed from a monolithic block of insulating material and in yet another embodiment, the damp course element comprises at least material from the group consisting of: plastic, foamed plastic, polystyrene, extruded polystyrene, expanded polystyrene.

[0034] The insulating material may be comprised of different materials. Some materials are already widely used in construction, such as EPS or XPS, also known under the names Styrofoam, polystyrene foam, isomo and blue-plate. However, other materials, whether or not foamed, with a high insulation value may also be suitable. In a preferred embodiment, the whole damp course element is created from insulating material. However, it may also be implemented such that there is a combination of materials, or that other materials are used with a less high insulation value, such as steal reinforcement bars, grids, etc.

[0035] In a second aspect, a method for manufacturing a damp course for placement between a foundation and a superstructure of a building is disclosed, wherein the superstructure of the building consists of building walls that comprise at least an inner wall and an outer wall, and the method comprises the steps of:

- providing a block at least substantially comprised of insulating material;
- machining the block to create a shape which corresponds at least substantially with at least a portion of a building wall and the foundation;
- machining the block to provide a plurality of through-holes from a first side to an opposite side of the block.

[0036] In a further embodiment, the through-holes are provided in two planes which are parallel to each other, wherein the two planes correspond to the inner wall and the outer wall of the building wall.

[0037] In a specific embodiment, the positions of the through-holes in the one plane and the positions of the through-holes in the other plane are staggered relative to each other.

[0038] In another embodiment, the shape of the machined block has a length which substantially corresponding to the length of the building wall.

[0039] In a further embodiment, the provided through-holes comprise a transverse cross-sectional shape according to any one selected from the group consisting of: round, square, pentagonal, hexagonal, star-shaped, polygonal and arch-shaped.

[0040] In another embodiment, the through-holes are provided as tapered through-holes.

[0041] In a further embodiment, the tapered edges of the through-holes are provided in the one plane on the one side and in the other plane on the opposite side.

[0042] In a third aspect, a damp course is provided for placement between a foundation and a superstructure of a building, comprising a plurality of damp course elements characterised according to any of the aforementioned descriptions.

[0043] The present invention will hereafter be described in more detail with reference to the accompanying figures, in which figure:

Fig. 1 shows a cross-section of a damp course element according to an embodiment of the invention;
Fig. 2 shows a cross-section of a damp course element according to an embodiment of the invention with other dimensions;
Fig. 3 shows a cross-section of a damp course element according to an embodiment of the invention in a single-wall embodiment;
Fig. 4a and 4b show a front inside and outside view of the damp course element according to an embodiment of the invention;
Fig. 5 shows a top view of a damp course element according to an embodiment of the invention;
Fig. 6 shows a top view of a damp course element according to an embodiment of the invention in a single-wall embodiment;
Fig. 7 shows in detail a sectional view of a damp course element according to an embodiment of the invention in a single-wall embodiment;
Fig. 8 shows in detail a section of a damp course element according to an embodiment of the invention in an inner wall and outer wall embodiment;
Fig. 9 shows from different perspectives a damp course element according to an embodiment of the invention after it is poured with mortar and wherein

the mortar, for illustrative purposes, is the only part that is shown;

Fig. 10 shows in a three-dimensional view a damp course element in accordance with fig. 9;

[0044] For the purpose of better understanding of the invention, corresponding parts in the various figures are designated with the same reference number.

[0045] In fig. 1 an example is shown of a cross-section of a damp course element 10 according to an embodiment of the invention. With reference number 16 the foundation is indicated, which is arranged in a conventional manner into the ground, or poured. Above the ground level 14, on the outside of the building, a superstructure 11, 12, can be seen, which in this case not only consists of an outer wall 11 and an inner wall 12, but also of an insulating layer 15 comprised therein and contained in between the two walls. On the inside of the building is a layered floor structure provided, which is comprised of the parts 13c, 13b and 13a, and composed of a concrete layer with an optional insulating layer and a screed.

[0046] A damp course 17 is provided between the outer wall 11 and inner wall 12 and the remote foundation 16. In this case, the damp course 17 is located completely below the ground level 14. However, there are also embodiments of the damp course according to the invention in which the damp course is above or at least partially above and partially below the ground level 14. Accordingly, the invention is not limited to the examples shown in this figure.

[0047] The damp course is constructed from at least two main materials. Firstly, the insulating material forming the main material. In the insulating material two rows 17a, 17b are visible, which rows are formed by the above present inner wall and outer wall. In these rows holes are provided, these through-holes enable the insulating material to be removed between the foundation and the inner wall, and the outer wall respectively. When the damp course element, thus at the moment of placement with holes in the insulating material, is placed on the foundation, the holes can be poured with mortar, concrete or other strong construction material. This pouring can be performed all in once, or in steps. That means, that first a small layer of mortar is poured in the holes to make sure that the damp course element is fixedly attached to the foundation, and subsequently at a later moment the rest of the holes are poured, such that the element is ready for use and the construction of the outer wall and inner wall can be built thereupon. Then actually two rows of concrete pillars are formed between the outer wall 11 and the foundation 16 through the first row of concrete connecting elements 17a, and between the inner wall 12 and the foundation 16 through the thickened row of concrete connection elements 17b. The rest of the damp course is formed by insulating material. This results in a total insulation value of such a damp course which is higher than of those known in the art.

[0048] The damp course element shown in fig. 1 is an exemplary embodiment shown with such dimensioning in which the width of the building wall, thus the total of inner wall 12 and outer wall 11 and the insulating material 15 optionally present therein, is 360 cm. In fig. 2 a corresponding damp course element is shown, however with a different, standard building wall width of 380 cm. In this case, the insulation 15 and the inner wall 12 are made 10 cm wider. This makes the structure of the building heavier, and thus the pressure load on the damp course 17 higher as well. In order to cope with this pressure, on the one hand the holes in the row corresponding to the inner wall are made wider. For example as shown in fig. 2, in which the holes have the same width as the above present outer wall, respectively the inner wall. On the other hand, one could also choose a stronger mortar, which can resist a higher load. This way, one would require less mortar, less big holes are needed, and there is more insulating material and thus the insulation value of the damp course will go up.

[0049] In the damp course elements of fig. 1 and 2 there is further included a reinforcement 18, in this case for example in the form of a Murfor reinforcement. This reinforcement is included in these examples in the upper side of the damp course element and in the longitudinal direction of the rows with holes. A skilled person will understand that there are several other variants that are also applicable.

[0050] In fig. 3 an alternative embodiment of a damp course element 17 is shown according to the invention, which damp course element 17 is formed by manufacturing a block of insulating material in which only one row of holes is incorporated therein. This results in only a single row of connecting elements 17c being formed after pouring of the holes. This variant is particularly suitable for manufacturing a damp course for an inner wall 12.

[0051] In fig. 4a and 4b two rows are shown from a perspective in which it can be clearly seen which part is formed by insulating material and which part by the holes which are subsequently filled with mortar, concrete or the like. Fig. 4a is a side view from the outer side, that is to say that the herein shaped connecting elements 52 are located between the foundation and the outer wall. The damp course element 17a is formed by insulating material such as plastic, foamed plastic, polystyrene, extruded polystyrene, expanded polystyrene or the like. Prior to installing the foundation, the insulating material is provided with holes are provided or parts are removed, for example by a milling machine. A mould in accordance with figures 4a, 4b is thus provided. With 51 the original insulating material is designated. The rest, i.e. 52, has been removed and will be poured with mortar after placement. As such, at some distance from each other, connecting elements are provided which carry the walls (inner and outer) of the superstructure and are disposed between these walls and the foundation. In these examples, also an optional reinforcement in the form of a double 10 mm diameter steal reinforcement as a Murfor reinforcement 18 is provided.

[0052] What stands out in figures 4a and 4b is that the holes 52 in the row in the front of the outer wall 17a in fig. 4a are offset/staggered relative to the holes 52 in the row in front of the inner wall 17b in fig. 4b. The result thereof is that transversely to the longitudinal direction of the damp course elements there is always one and the same thickness of insulating material. Seen from the outside it is indeed at any position the case that seen from the outside wall to the inside wall there is either insulating material 51 and subsequently mortar 52 or mortar 52 and subsequently insulating material. In a cross-sectional perspective such as in fig. 1 and 2 in case of a ratio of 1/3 1/3 1/3 for row 17a, insulating material, row 17b, at each position seen in the width of the damp course element 2/3 insulating material is present because due to the staggered holes, the layer is always built up out of insulating-insulating-mortar or mortar-insulating-insulating and not at a single position insulating-insulating-insulating and at a different position mortar-insulating-mortar. In the latter, there arises a cold bridge, which has a negative effect on the total insulation value of the damp course and thus the building.

[0053] In fig. 4a and 4b a shape is shown which corresponds to a trapezium, that is to say that there is a tapered side at the holes. In this embodiment, the tapered side of the holes for the two rows are disposed on the same side. According to the invention this can also be on the top side of the one row and for the other row at the bottom. Also other shapes for the holes apply, examples of which are straight, columnar holes, straight cylindrical holes, tapered cylindrical holes such as cones or variants thereof.

[0054] In fig. 5 a top view is shown of a damp course element according to the invention. Here, too, the superstructure is clearly shown in the transverse direction, namely row 17a, insulating material, row 17b. Also, it can be seen here that the holes 52 are staggered relatively to each other such that transversely to the longitudinal direction of the damp course element 17, there is always only one part formed by mortar. Murfor is provided here as well as reinforcement 18 in order to give the whole structure more strength by forming a complete reinforced concrete structure.

[0055] In fig. 6 a different variant is shown, also from a top view, but then in accordance with the damp course element for a single (inner) wall as shown in fig. 3. In this case, the holes are also located at some distances from each other and tapered holes are provided, in which trapezium-shaped connecting elements/concrete lugs are provided.

[0056] In fig. 7 and 8 cross-sectional detailed views are shown of a damp course element 17 having a single row of holes (fig. 7) for a single wall, and with a double row of holes (fig. 8) for building a wall from an inner and outer wall. As indicated in the figures, the height of the damp course element and thus the damp course is variable. For example, the whole damp course can be constructed below ground level, above, or in most cases partially underneath and partially above. Also, it can be used in different thicknesses and the invention is thus not limited to those dimensions, such as the ones used throughout the several figures.

[0057] In fig. 8 a damp course element is shown in detail according to a superstructure comprised of two planes, wherein the holes are divided in two rows which correspond to the planes as formed respectively by the inner wall and the outer wall.

[0058] When placing the damp course elements, there is no need, as is the case of known damp courses, to define set-up points or reference points in a plurality of places. In its most minimal embodiment, this only needs at the corners of the building. This provides significant timesaving but also an embodiment with most customisation capabilities. More in particular, is in such an example a damp course element in length corresponding to the entire length of the building wall to be built up later in the damp course element wherein only a single pre-manufactured damp course element per superstructure is to be placed and subsequently poured with mortar. However, intermediate solutions are also conceivable. For example, variants wherein the damp course element is not 100% custom, but corresponds to the standard dimensions of an inner wall or a combination of an inner and an outer wall. In this case, the damp course element can be manufactured in the standard lengths of for example 50 cm, 75, cm, 100 cm, 150 cm, 250 cm etc. It is however also possible to manufacture larger standard sizes which are customised on site. In case of for example polystyrene or blue-plate or other easy to process insulating material, this is particularly simple. In an intermediate solution, the length of the damp course elements correspond to the length of the walls of the superstructure, but then the damp course elements still need to be further supplemented with conventional bricks or the like to form the entire damp course. In this variant, the structure is thus set as follows: foundation, damp course elements of mortar and insulating material, and the remainder of the damp course of conventional bricks for such a damp course and subsequently the superstructure.

[0059] In fig. 9 a top, front and side view is disclosed of a damp course constructed from damp course elements according to the invention. From the top view 90a it is clear to see that in the width of the damp course elements two rows can be recognised. These rows are rows of holes which after having been poured with mortar, form cement cams/lugs. These cement cams are clearly disclosed in the front view 90c and side view 90b. Also in these figures it is clear how the role of cams 17a, 17b, 52 or connecting elements 17a, 17b, are disposed on the foundation, after the holes are filled with mortar. To clarify, an integral construction is formed after pouring the mortar and in fig. 9 only part of the mortar of this integral construction is shown, in other words, the mortar that is poured in the holes and those parts taken away from the insulating material. In fig. 10 the hole corresponding to fig. 9 is shown in three-dimensional perspective. Again, it is clear to see that the positions of those holes and thus the concrete lugs which are formed thereon, are not aligned but are biased or staggered relative to each other. On the upper side the cams are interconnected with each other in an inverted U-shape wherein optionally reinforcement is provided.

Claims

1. Damp course element for placement between a foundation and a superstructure of a building, wherein the superstructure of the building comprises building walls comprised of at least an inner wall and an outer wall, wherein the damp course element comprises a foundation side oriented towards the foundation and a superstructure side oriented towards the superstructure and at least substantially manufactured from insulating material, wherein the damp course element is comprised of a repeating pattern of through-holes provided between the foundation side and the superstructure side.

2. Damp course element according to claim 1, wherein the building wall comprises at least an inner wall and an outer wall, and wherein the through-holes are arranged in two planes, which two planes are formed by the inner wall and the outer wall of the building wall.

3. Damp course element according to claim 2, wherein the positions of the through-holes in one plane and the positions of the through-holes in the other plane are staggered relative to each other.

4. Damp course element according to one of the preceding claims, wherein the damp course elements extend over the entire length of one of the walls of the building construction.

5. Damp course element according to any of the preceding claims, wherein the through-holes have a cross-sectional shape according to any one selected from the group consisting of: round, square, pentagonal, hexagonal, star-shaped, polygonal and heart-shaped.

6. Damp course element according to any of the preceding claims, wherein the through-holes are tapered.

7. Damp course element according to claim 6, wherein the tapered sides of the through-holes in the one plane are present in the foundation side and the tapered sides of the through-holes in the other plane are present in the superstructure side.

8. Damp course element according to any of the preceding claims, wherein the damp course elements are formed from a monolithic block of insulating material.

9. Damp course element according to any of the preceding claims, wherein the damp course element comprises at least a material from the group consisting of: plastic, foamed plastic, polystyrene, extruded polystyrene, expanded polystyrene.

10. A method of manufacturing a damp course for placement between a foundation and a superstructure of a building, wherein the superstructure of the building is comprised of building walls and comprising at least an inner wall and an outer wall, wherein the method comprises the steps of:

    - providing a block at least substantially manufactured from insulating material;
    - machining the block to provide a shape which corresponds at least substantially to a portion of the building walls and the foundation;
    - machining the block to provide a plurality of through-holes from a first side to an opposite side of the block.

11. A method of manufacturing a damp course element according to claim 10, wherein the through-holes are provided in two planes, oriented parallel to each other in longitudinal direction, wherein the two planes correspond to the inner wall and the outer wall of the building.

12. A method of manufacturing a damp course according to claim 11, wherein the positions of the through-holes in the one plane and the positions of the through-holes in the other plane are staggered relative to each other.

13. A method of manufacturing a damp course according to any of the claims 10-12, wherein the shape of the machined block has a length which substantially corresponding to the length of the building wall.

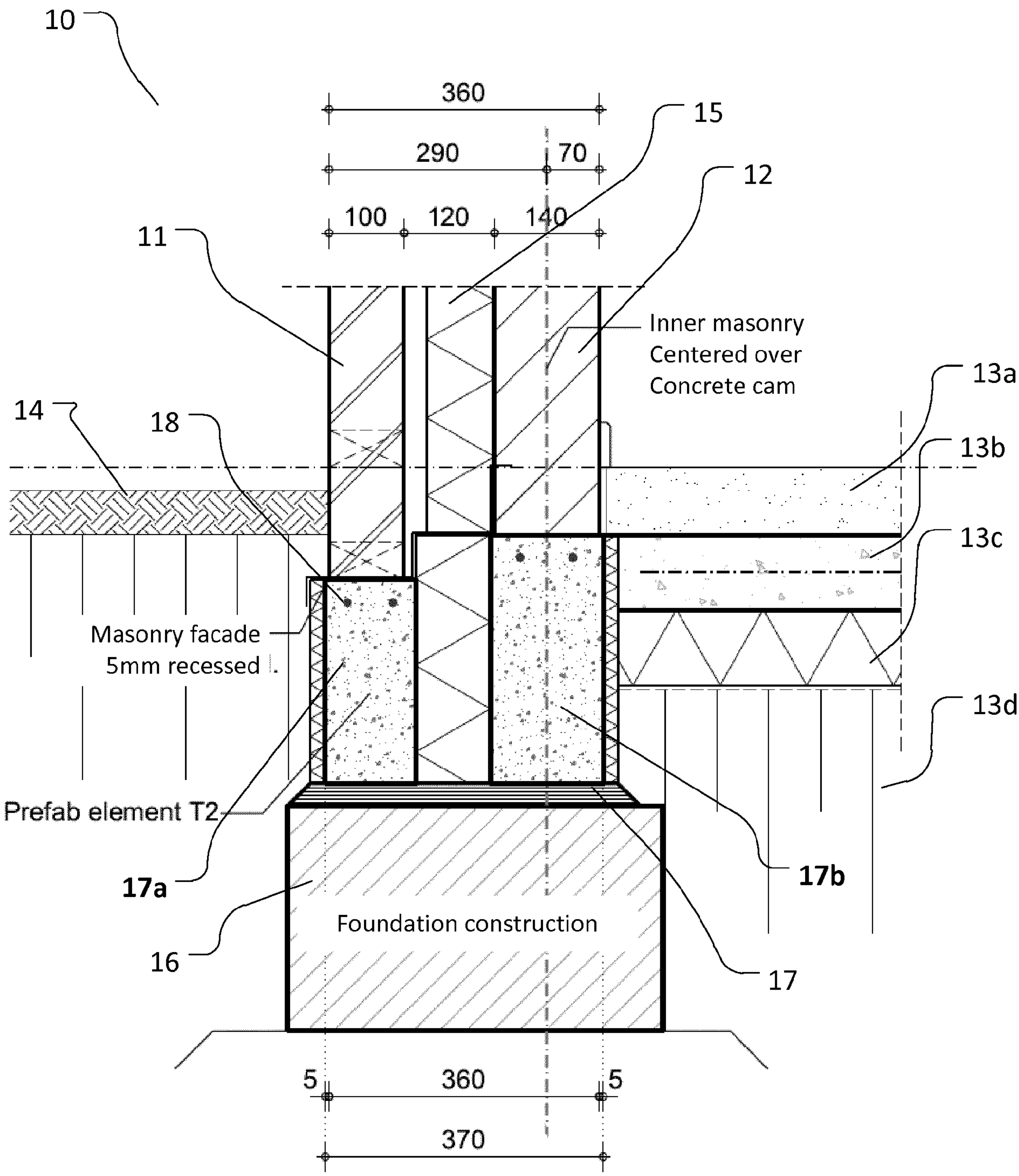
14. A method of manufacturing a damp course according to any of the claims 10-14, wherein the provided through-holes comprise a cross-sectional shape according to any of the group consisting of: round, square, pentagonal, hexagonal, star-shaped, polygonal and arch-shaped.

15. A method of manufacturing a damp course according to any of the claims 10-14, wherein the through-holes are tapered.

16. A method of manufacturing a damp course according to any of the claims 10-15, wherein the tapered sides of the through-holes in the one plane are provided

on the one side and the tapered sides of the through-holes in the other plane are provided on the opposite side.

17. Damp course for placement between a foundation and a superstructure of a building comprising a plurality of damp course elements according to any of the claims 1-9.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11
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Centered over
Concrete cam
13a
14
18
13b
13c
Masonry facade
5mm recessed
13d
Prefab element T2
17b
17a
Foundation construction
16
17
5
360
5
370

Fig. 1

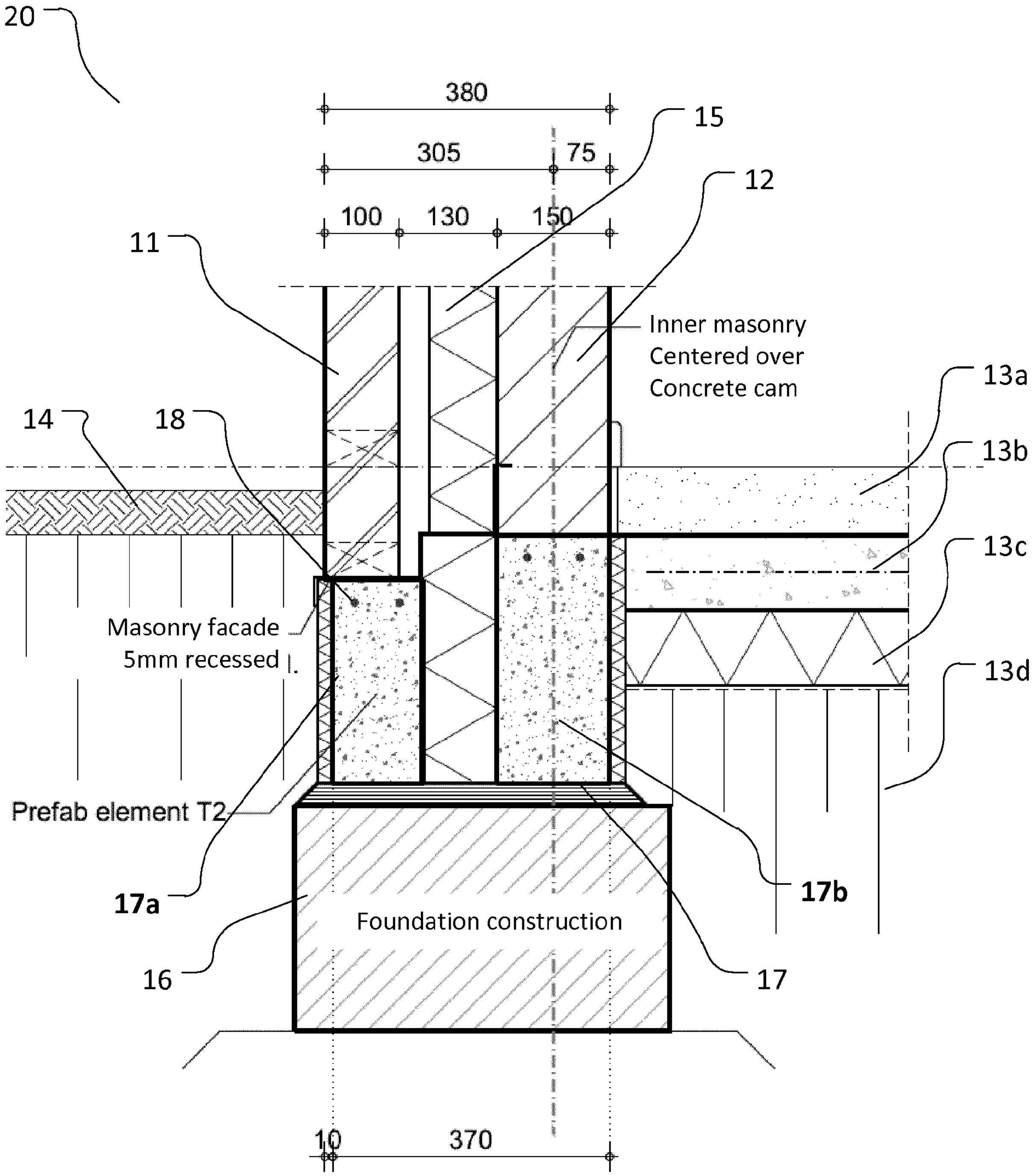
20
380
305
75
100
130
150
15
12
11
Inner masonry
Centered over
Concrete cam
13a
14
18
13b
13c
Masonry facade
5mm recessed
13d
Prefab element T2
17a
17b
Foundation construction
16
17
10
370

Fig. 2

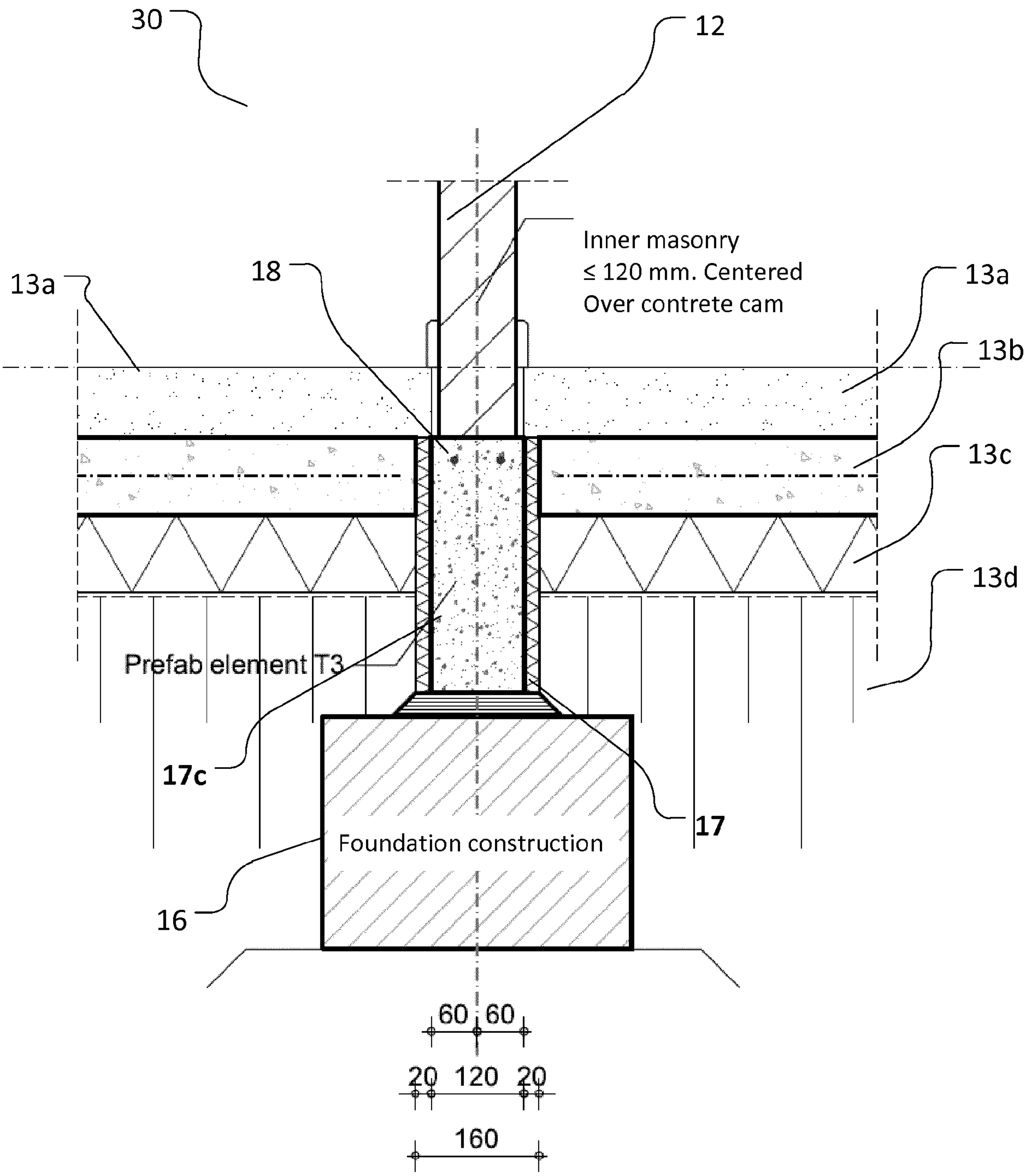
30
12
Inner masonry
≤ 120 mm. Centered
Over contrete cam
13a
18
13a
13b
13c
13d
Prefab element T3
17c
17
Foundation construction
16
60 60
20 120 20
160

Fig. 3

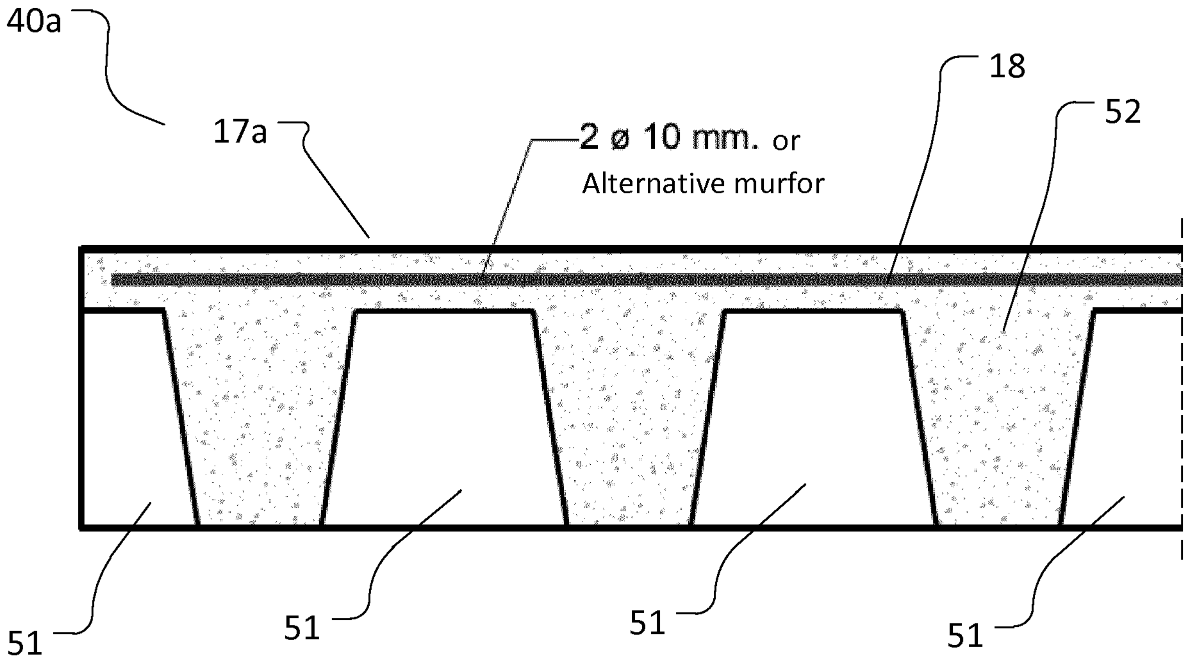
40a
17a
18
52
2 ø 10 mm. or
Alternative murfor
51
51
51
51

Fig. 4a

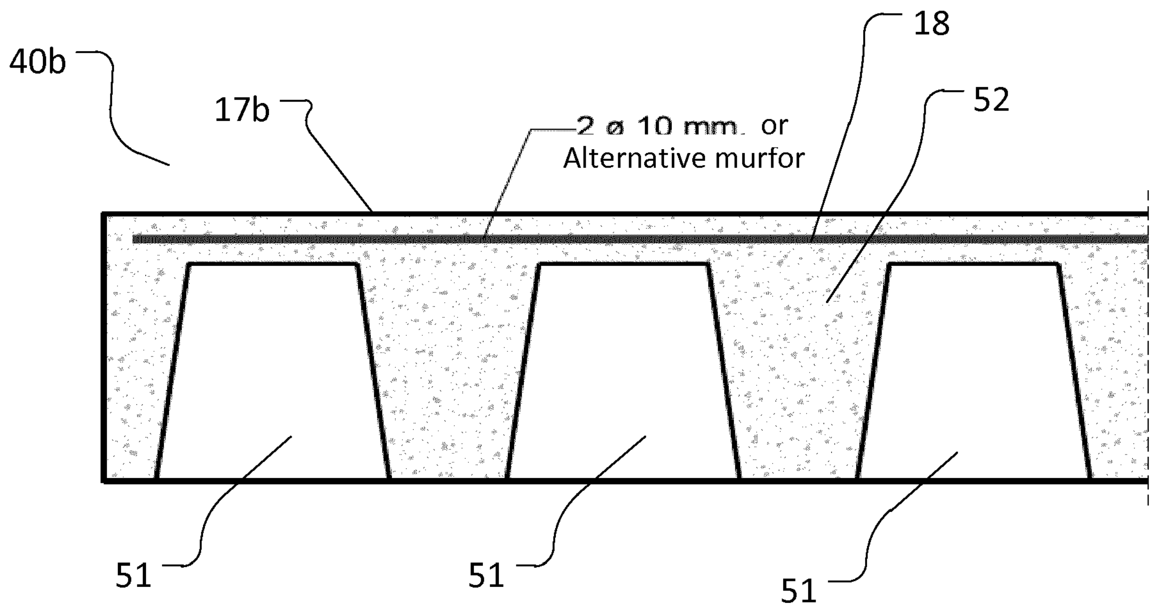
18
40b
17b
52
2 ø 10 mm. or
Alternative murfor
51
51
51

Fig. 4b

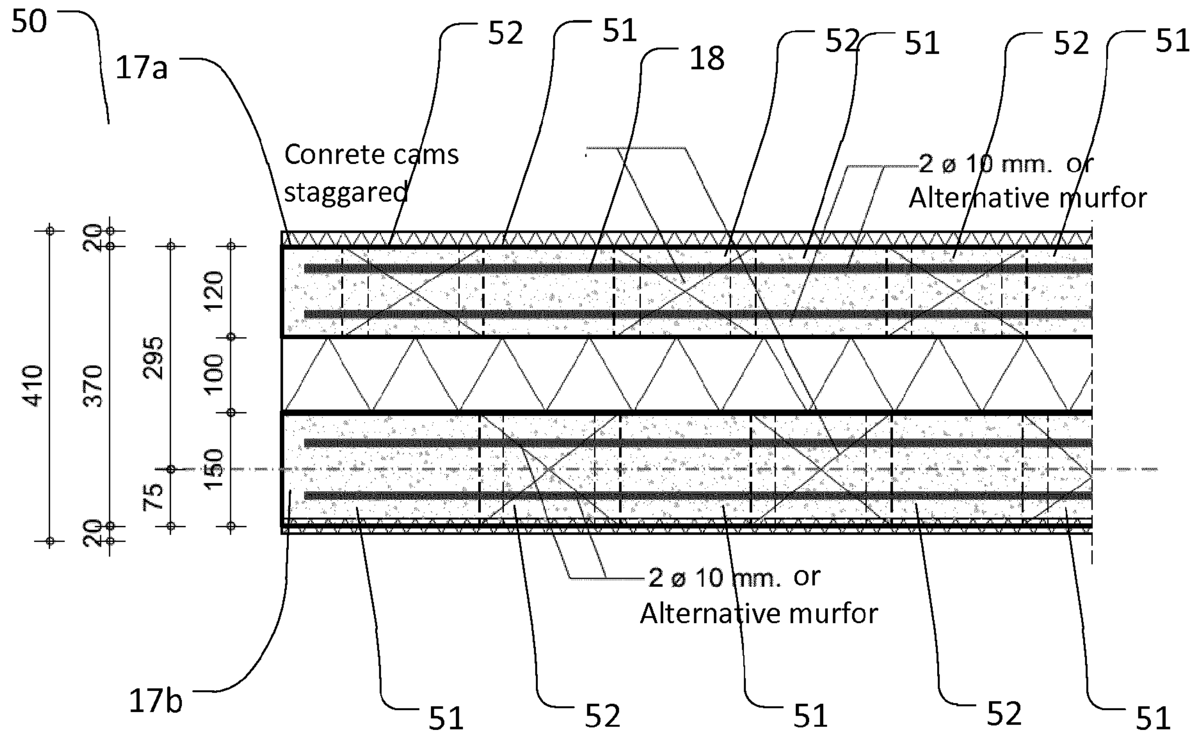
50
17a
52
51
18
52
51
52
51
Conrete cams
staggared
2 ø 10 mm. or
Alternative murfor
410
370
295
120
100
150
75
20
20
2 ø 10 mm. or
Alternative murfor
17b
51
52
51
52
51

Fig. 5

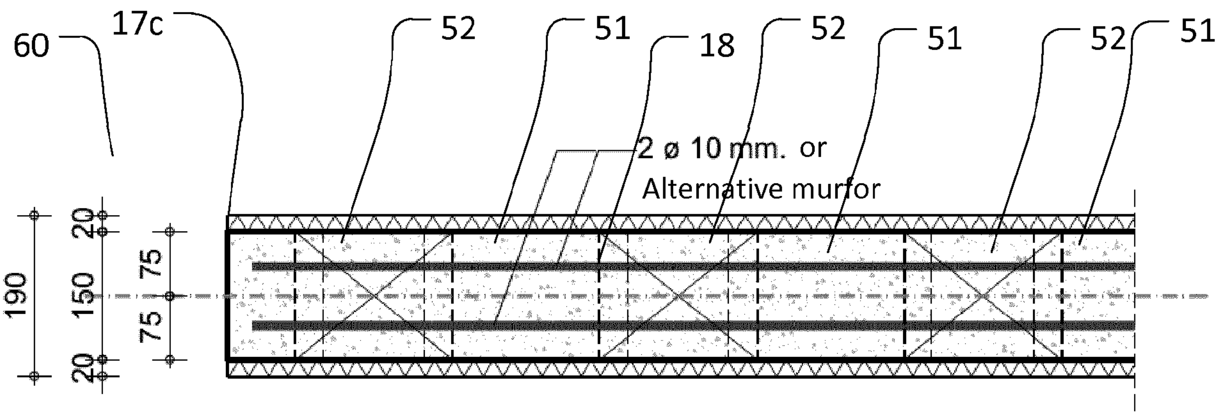
60
17c
52
51
18
52
51
52
51
2 ø 10 mm. or
Alternative murfor
190
20
150
20
75
75

Fig. 6

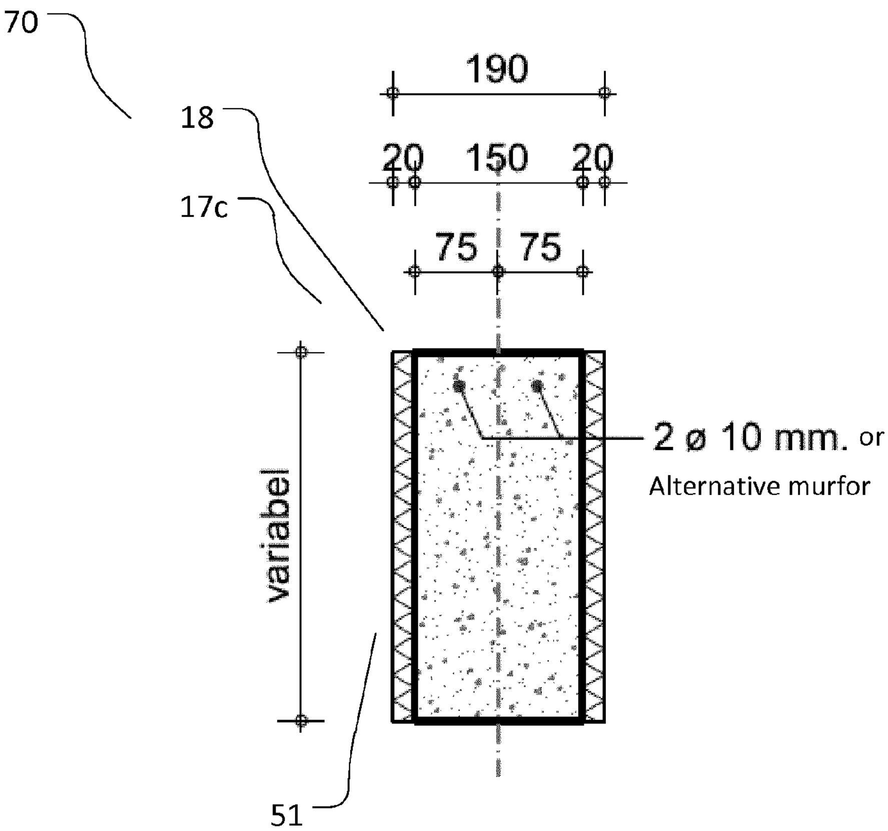
70
18
17c
190
20
150
20
75
75
variabel
2 ø 10 mm. or
Alternative murfor
51

Fig. 7

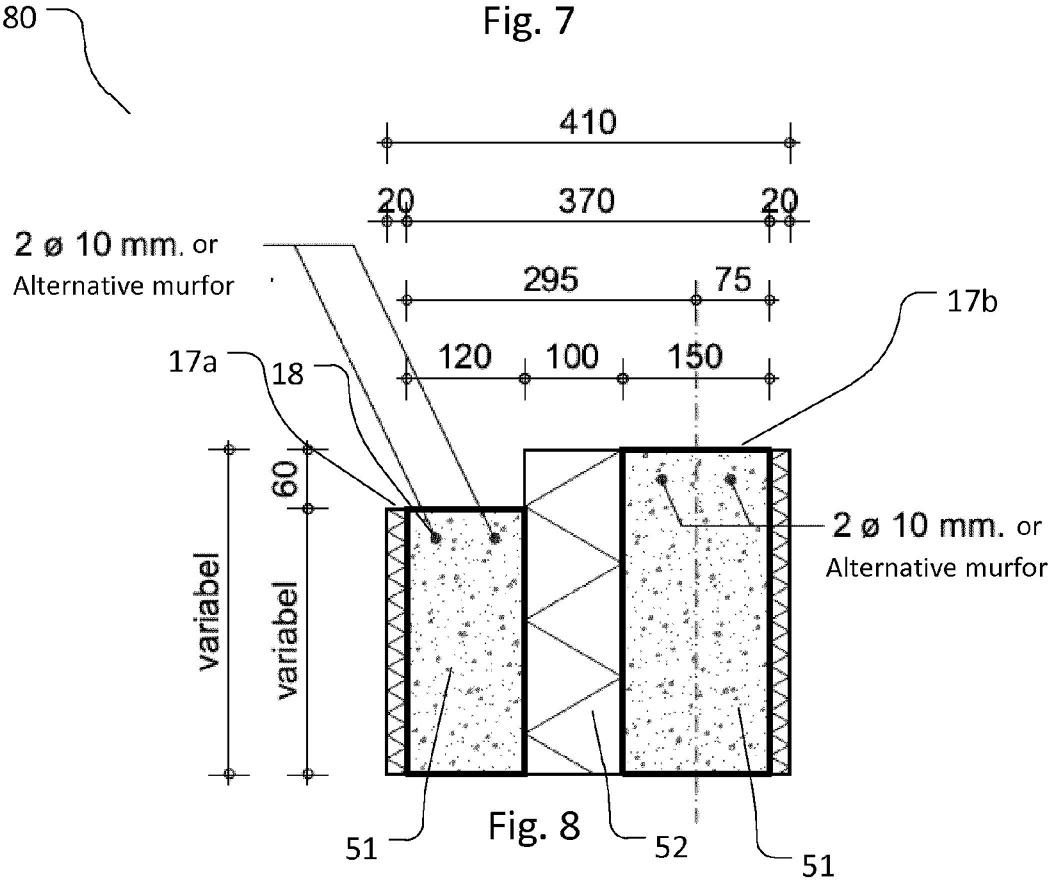
80
410
20
370
20
2 ø 10 mm. or
Alternative murfor
295
75
17b
17a
18
120
100
150
60
variabel
variabel
2 ø 10 mm. or
Alternative murfor
51
52
51

Fig. 8

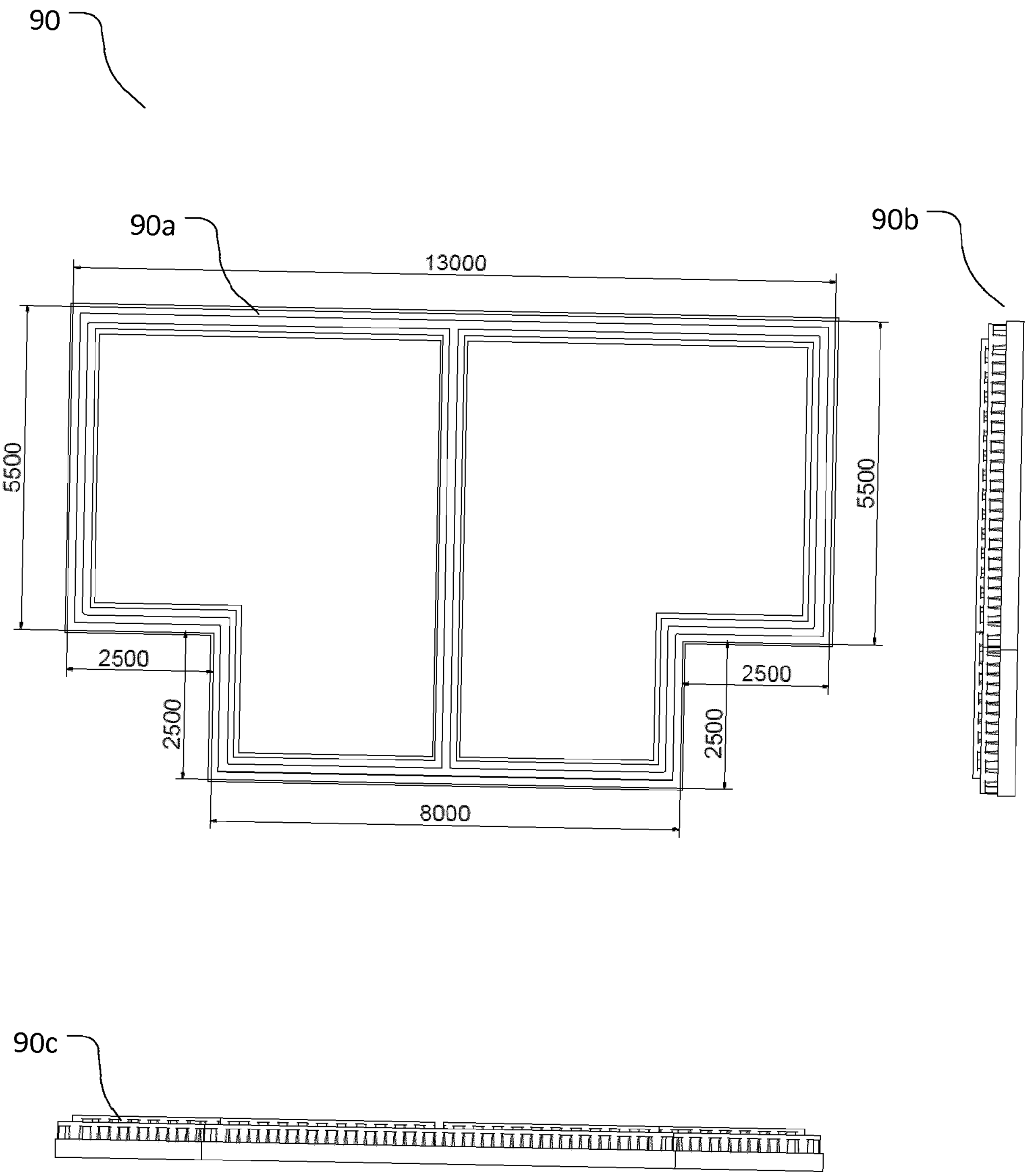

Fig. 9

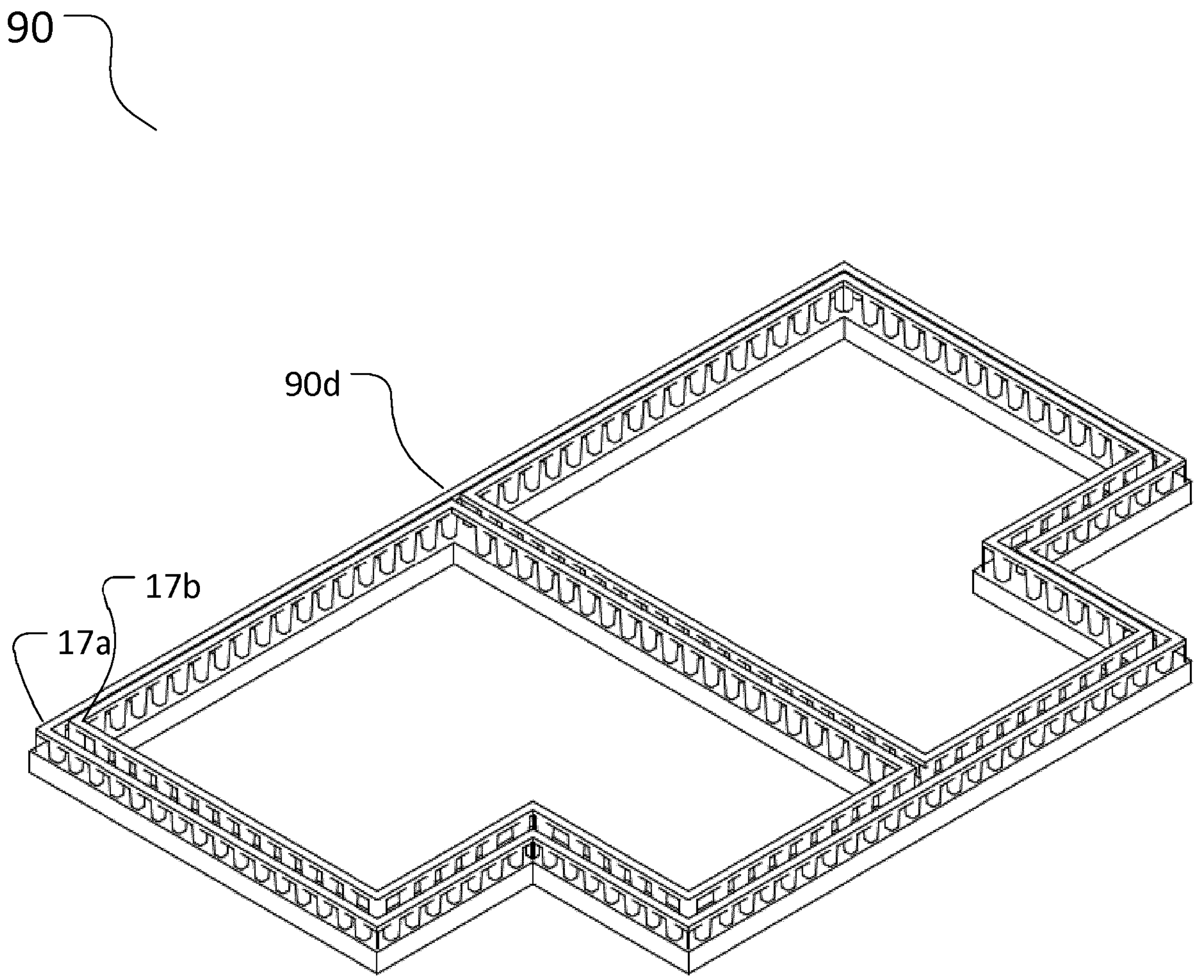

Fig. 10

Europäisches Patentamt
European Patent Office
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EUROPEAN SEARCH REPORT

Application Number
EP 15 16 3517

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	BE 1 010 365 A3 (HEIRWEGH ETIENNE [BE]) 7 July 1998 (1998-07-07) * the whole document * -----	1-17	INV. E02D27/01
			TECHNICAL FIELDS SEARCHED (IPC)
			E02D

The present search report has been drawn up for all claims

1

Place of search	Date of completion of the search	Examiner
Munich	25 January 2016	Geiger, Harald

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons
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25-01-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
BE 1010365 A3	07-07-1998	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82