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(54) **Expendable form for floors**

Verlorene Schalung für Decken

Coffrage perdu pour planchers

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Description

[0001] The present invention relates to an expendable form for concrete floors as set forth in the preamble of claims 1 and 2.

[0002] US-A 4 157 640 discloses such forms in which the stiffener framework is embedded in the block exclusively in the areas of the V-shaped seats such that the upper portion of each stiffener element constituting the framework working in compression incorporated in a concrete slab cast on the floor, is removed from the insulating material. In this latter case, the framework is not used as a reinforcement system for the expendable form per se, but it is used to be connected to and embedded in the concrete of the floor.

[0003] EP-A-0 459 924 discloses expendable panels or forms consisting of foamed plastic material, usually polystyrene, having a generically rectangular parallelepiped shape provided with lateral half seats or ribs, which forms are being laid on a temporary support frame for casting the floors. The concrete lays on said expendable forms and on the framework of the beams forming, in this way, ribbed concrete floors. The expendable forms are very useful since they replace the classical hollow floor bricks but, on the other hand, it is necessary to fit out a complex temporary support frame for the framework of the beams and for the expendable forms.

[0004] The subject matter of the present invention is a new panel or an expendable form as characterized in claim 1 and 2. It is provided with a conglomerated metallic falsework in order to be self supporting during the transport and the casting phase.

[0005] The expendable form has a rectangular plan with modular width (for example 60 cm.), or a different plan corresponding to the distance between the centres of the main falsework of the floor, said plan is three-five metres long in connection to the clear span.

[0006] The vertical section of the expendable form is particularly conformed, that is, generically rectangular and, in a first alternative, with a central V-shaped seat which is in upper position. The width and the depth of said seat are as to house the falsework of the main beams of the floor for carrying out concrete ribbed floors.

[0007] The two sides of the section of the new expendable form have some parts with projection or flute shapes, in this way it is possible to position the expendable forms side by side inserting the projection of an expendable form to the flute of the adjacent one.

[0008] A falsework is conglomerated in the expendable form and in line with its length, said falsework supports the expendable form and the additional weight of the casting concrete of the slab and of the beams. Said conglomerated falsework of the expendable form consists of one or more rods arranged in a triangle with the top vertex (or the bottom one) joined by means of rods with a smaller diameter.

[0009] Said falsework of the expendable form is completely buried in the plastic material of the form; a lower section bar or channel can be arranged and buried in the plastic material as well. In this second chance the application of a false ceiling, as a plasterboard, to the form is made easier.

[0010] As a matter of fact, said section bar constitutes a solid seat for fastening the assembly screws of the panels of the false ceiling.

[0011] The expendable form can be provided with lightening holes lined up with the largest dimension of said form. Said holes reduce the weight of the form as well as the quantity of plastic material used for carrying out a form.

[0012] The new expendable forms carried out in this way show many advantages, first of all when they are being laid directly on the lateral abutments of the floor they instantly make up the ribs on which the falsework of the beams is inserted.

[0013] A further advantage is that said form is self-supporting. In case of great distance between the points of support a temporary support (intermediate support) can be inserted.

[0014] Another important advantage is the insulating capacity of the form, both from a thermic point of view and a from an acoustic one, without the presence of thermic conductions.

[0015] The new form can be realized with a different shape; instead of the central seat V-shaped in which the main falsework of the floor is housed, a second alternative provides two half seats or ribs so that the two forms positioned side by side can generate a seat or a whole rib between them. In this case, the section of the new form has an isosceles trapezoid shape with lateral ribs on the edges of the main base so as to space properly the two adjacent forms.

[0016] The accompanying illustration shows by way of example, but not limitative, an embodiment of the invention.

[0017] Figure 1 partially shows an axonometric view of the new form.

[0018] The shape of the part made of plastic material (1) is clearly shown with a generically rectangular section and a central upper section V-shaped (1.1), a projection (1.2) on one side and a flute (1.3) on the other side.

[0019] In the part made of foamed material (1) there are some lightening holes (1.4) whereas two falseworks (2) consisting of metallic rods cross the length of said part made of plastic material.

[0020] Figures 2 and 3 show two further forms of making the part made of plastic (1) in which in place of the central V-shaped seat there are two half-seats (1.5) so that two expendable forms positioned side by side can generate a whole seat between them. In these cases the section of the part made of plastic material is isosceles trapezoid shaped with lateral rib (1.6) on the edges of the main base so as to space properly the two adjacent forms.

[0021] Particularly figure 3 shows a version of the new

form in which there is a section bar (3) supporting the false ceiling.

[0022] The above are the basic outlines of the invention, on the basis of which the technician will be able to provide for implementation; therefore, any change which may be necessary upon implementation and which does not depart from the scope defined by the appended claims is to be regarded as completely protected by the present invention.

Claims

1. Expendable form for concrete floors constituted by a longitudinal block (1) of expanded plastic material and of a generically rectangular section provided in its upper part with a V-shaped seat (1.1), said block (1) comprising one or more stiffener frameworks (2) of iron rods, **characterized in that** each stiffener framework (2) is made up of three rods forming a triangular section integrally embedded in the block (1) between the V-shaped seat (1.1) and a lateral edge of the block, whereas said V-shaped seat (1.1) is free for housing the framework of the main beams of the floor.

2. Expendable form for concrete floors constituted by a longitudinal block (1) of expanded plastic material and of a generically rectangular section provided in its upper part with inclined lateral edges (1.5) so that two longitudinal blocks positioned side by side form a V-shaped seat between them, said block (1) comprising one or more stiffener frameworks (2) of iron rods, **characterized in that** each stiffener framework (2), is made up of three rods forming a triangular section integrally embedded in the block (1) between the inclined lateral edges (1.5) of the block, whereas said V-shaped seat is free for housing the framework of the main beams of the floor.

3. Expendable form according to claim 1 or 2, wherein the lateral edges of the longitudinal blocks (1) are provided with projections (1.2; 1.6) on one side and ribs or flutes (1.3) on the other side.

4. Expendable form according to any of the preceding claims, wherein lightening holes (1.4) are formed in the block (1) between the V-shaped seats (1.1)

5. Expendable form according to any of the preceding claims, wherein one or more section bars (3) are completely embedded in the block (1) for fastening a false ceiling.

Patentansprüche

1. Verlorene Schalung für Betondecken, bestehend aus einem länglichen Block (1) aus Schaumkunststoff, der einen i.w. rechteckigen Querschnitt und in seinem oberen Teil einen V-förmigen Sitz (1.1) hat, wobei der Block (1) ein oder mehr Versteifungsgitter (2) aus Eisenstangen aufweist, **dadurch gekennzeichnet, daß** jedes Versteifungsgitter (2) aus drei Stangen besteht, die im Querschnitt ein Dreieck bilden, das in dem Block (1) zwischen dem V-förmigen Sitz (1.1) und einer Seitenkante des Blocks vollständig eingebettet ist, während der V-förmige Sitz (1.1) frei zur Aufnahme der Armierung der Hauptträger der Decke ist.

2. Verlorene Schalunng für Betondecken, bestehend aus einem länglichen Block (1) aus Schaumkunststoff, der einen i.w. rechteckigen Querschnitt und in seinem oberen Teil schräge Seitenkanten (1.5) hat, so daß zwei nebeneinander verlegte längliche Blökke einen V-förmigen Sitz zwischen sich bilden, wobei der Block (1) ein oder mehr Versteifungsgitter (2) aus Eisenstangen aufweist, **dadurch gekennzeichnet, daß** jedes Versteifungsgitter (2) aus drei Stangen besteht, die im Querschnitt ein Dreieck bilden, das in dem Block (1) zwischen den schrägen Seitenkanten (1.5) des Blocks vollständig eingebettet ist, während der V-förmige Sitz frei zur Aufnahme der Armierung der Hauptträger der Decke ist.

3. Verlorene Schalung nach Anspruch 1 oder 2, **dadurch gekennzeichnet, daß** die Seitenkanten des länglichen Blocks (1) auf einer Seite Vorsprünge (1.2; 1.6) und auf der anderen Seite Rippen oder Hohlkehlen (1.3) hat.

4. Verlorene Schalung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** in dem Block (1) zwischen den V-förmigen Sitzen (1.1) Erleichterungs-Hohlräume (1.4) ausgebildet sind.

5. Verlorene Schalung nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, daß** in dem Block (1) eine oder mehr Profilstangen (3) für die Befestigung eines Fehlbodens vollständig eingebettet sind.

Revendications

1. Coffrage perdu pour planchers en béton, constitué d'un bloc longitudinal (1) en mousse de plastique ayant un section essentiellement rectangulaire qui présente, sur sa face supérieure, un logement (1.1) en forme de V, ledit bloc (1) comprenant une ou plusieures armatures de renfort (2) en tiges de fer, **caractérisé par le fait que** chaque de ces armatures de renfort (2) est constituée de trois tiges formant une section triangulaire entièrement noyée dans ledit bloc (1) entre le logement (1.1) en forme de V et

une arête latérale dudit bloc, tandis que le logement (1.1) en forme de V est libre pour accueillir l'armature des poutres principales du plancher.

2. Coffrage perdu pour planchers en béton, constitué d'un bloc longitudinal (1) en mousse de plastique ayant un section essentiellement rectangulaire qui présente, sur sa face supérieure, des arêtes obliques latérales (1.5) de sorte que deux blocs longitudinaux positionnés l'un à côté de l'autre forment entre eux un logement (1.1) en forme de V, ledit bloc (1) comprenant une ou plusieures armatures de renfort (2) en tiges de fer, **caractérisé par le fait que** chaque des armatures de renfort (2) est constituée de trois tiges formant une section triangulaire entièrement noyée dans ledit bloc (1) entre lesdites arêtes obliques laterales (1.5) dudit bloc, tandis que le logement (1.1) en forme de V est libre pour accueillir l'armature des poutres principales du plancher.

3. Coffrage perdu selon la revendication 1 ou 2, **caractérisé par le fait que** les arêtes laterales du bloc longitudinal (1) présentent des parties en saillie (1.2; 1.6) sur un côté et des nervures ou gorges (1.3) sur l'autre côté.

4. Coffrage perdu selon une des revendications précédentes, **caractérisé par le fait que** dans ledit bloc (1) des cavités d'allègement (1.4) sont formées entre lesdits logements (1.1) en forme de V.

5. Coffrage perdu selon une des revendications précédentes, **caractérisé par le fait que** dans ledit bloc (1) une ou plusieures barres profilées (3) sont intégralement noyées pour la fixation d'un faux-plafond.

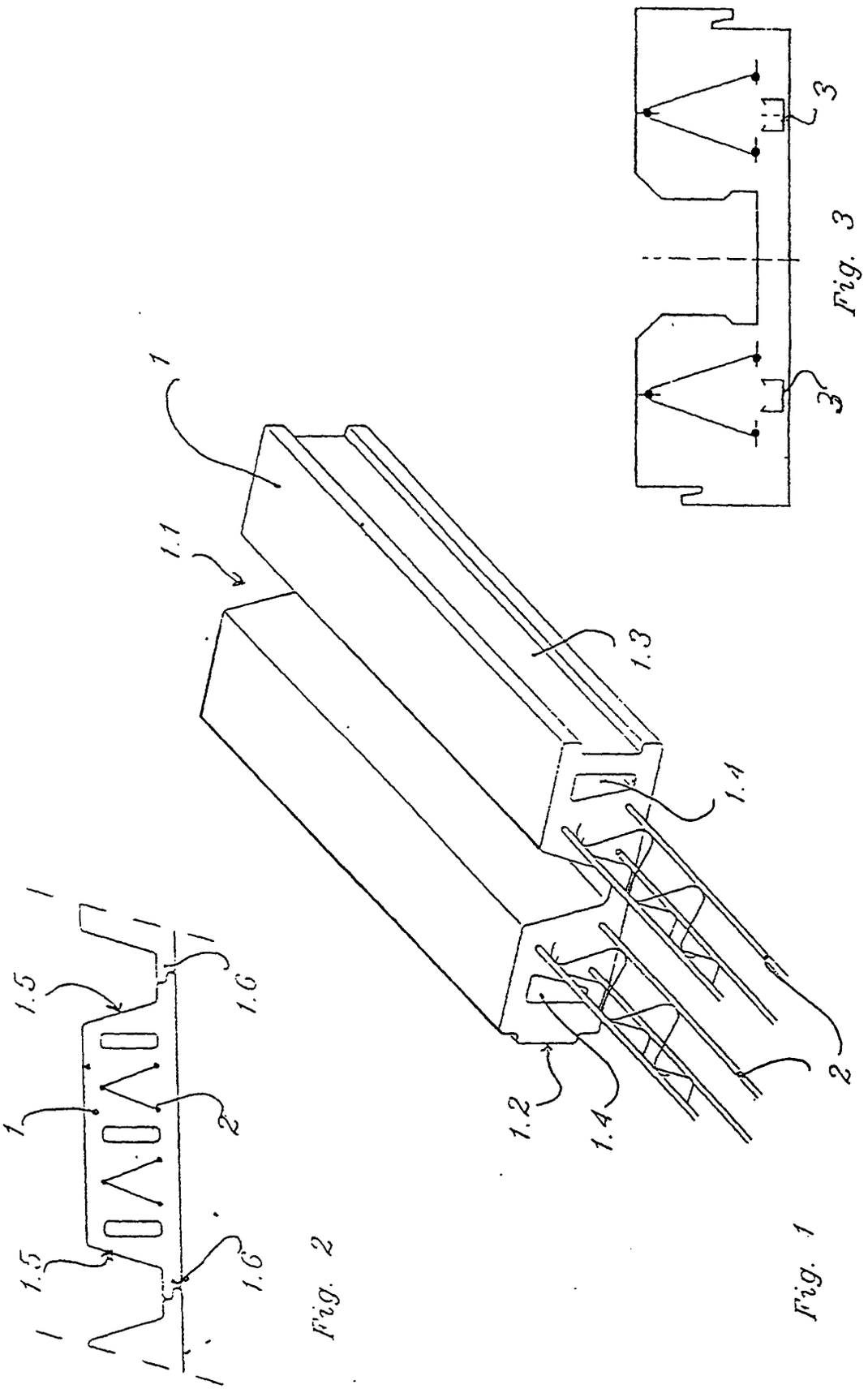

Fig. 1

Fig. 2

Fig. 3