

5 The invention concerns first of all a permanent shuttering
for the production of a cavity floor which rests on the
subfloor by means of supporting feet, the upper part of the
floor with the supporting feet being formed by pouring a
screed material, which in the fluid condition is initially
10 workable and subsequently sets, onto plastic sheets arranged
next to one another, having indentations corresponding to the
supporting feet, which form the permanent shuttering whose
adjoining edges are connected to one another. The invention
concerns, moreover, the production of such a shuttering in
the course of its laying on the subfloor.

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The shuttering stipulated as known and its production are
described in the EP-A-0 057 372. Therein the production of a
cavity floor using such a shuttering is also described. In
this connection, it is also mentioned that the shuttering or
20 the plastic sheets respectively consist of a material which
is so flexible and pliant that it adapts to any possible
unevennesses of the subfloor when loaded by the screed ma-
terial. The object of this is to ensure that the supporting
feet formed in the indentations of the shuttering are in
25 contact with the subfloor and are supported thereon.

In the known case, the connection of the adjoining plastic
sheets is effected in such a way that protrusions arranged on
the edges of the sheets engage in one another, it being
30 possible to make additionally provision for the bonding or
welding of the edges. The purpose of this is to prevent the
screed material from penetrating into the cavity of the
floor.

35 This type of joining the plastic sheets has the disadvantage
that the shuttering is made so rigid in the connection zone
that it may happen that in some regions the shuttering does

not adapt to the unevennesses of the subfloor, so that the supporting feet subsequently formed in the indentations do not bear everywhere on the subfloor either. This entails the risk of the subfloor fracturing under higher loads at the
5 respective points.

In the DE-A-22 41 836 an air duct battery is described for underfloor air heating wherein the gap between butt-jointed corrugated plates rigid in themselves is bridged by a sealing
10 strip, an adhesive strip in particular. Since the corrugations of the plates bear on counterplates having a flat surface, the problem of ensuring the adaptation of the corrugations to a supporting surface does not arise.

Proceeding from the state of the art according to the EP-A-0 057 372, the invention is first of all based on the problem of interconnecting the plastic sheets forming the permanent shuttering in such a way that the adaptation of the shuttering to the unevennesses of the floor is ensured over the
15 whole extent of the subfloor.
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A further object is to form the joints of the sheets in such a way that the shuttering can be produced comparatively simply on site and be laid on the subfloor, bearing the fact
25 in mind that before the application of the screed material, the plastic sheets cannot stand any higher loading, or would be damaged thereby, as would be the case for example, if the shuttering were to be walked on.

To solve the first mentioned problem, the invention proposes that the adjacent sheets forming the permanent shuttering should be flexibly interconnected by means of a plastic strip (14) which is fastened at their edge regions and which has a lower rigidity than the plastic sheets.
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35 Because of the lower rigidity of the connecting strip used in accordance with the invention, as compared with the

5 sheets and also with their edge regions in particular, the shuttering can, because of its flexibility, compensate unevennesses of the subfloor wherever they occur and thus also in the transition zone of adjacent plastic sheets. This compensation is made possible because adjacent plastic sheets can adjust their level in relation to each other without the occurrence of stresses worth mentioning. Thus the invention finally ensures that the indentations of the shuttering forming the supporting feet of the upper part of the floor come to bear everywhere on the subfloor.

10 In a preferred mode of embodiment of the invention, a zone formed on the plastic connecting strip in the region between its attachment to the edges of the plastic sheets which has a higher degree of flexibility as compared with the edge regions of the plastic strip. In this way, a joint or hinge type connection, as it were, is created between the plastic sheets. This mode of embodiment is preferably used when, in accordance with the further object of the invention aiming at a simple production of the shuttering on site, one proceeds in arranging the connection according to the invention between the plastic sheets in such a way that a second plastic sheet with the indentations corresponding to the supporting feet pointing upwards, is laid on a first plastic sheet resting on the subfloor by means of the indentations corresponding to the supporting feet, then the plastic strip which is attached to the lower sheet and is folded over upwards, is connected at its folded-over part to the upper plastic sheet along its edge and after this connection has been produced, the upper plastic sheet is folded over downwards around the articulation formed by the plastic strip, so that the second plastic sheet comes to lie next to the first with its indentations standing on the subfloor. In this arrangement, the plastic strip can be attached along one of its longitudinal edges to one of the sheets by welding, and to the other plastic sheet along its other longitudinal edge by bonding.

The method in accordance with the invention has the advantage that the workers producing the shuttering can effect the joining of the sheets from one position beside the sheets. In comparison therewith, a mode of operation wherein the joining of the sheets is only effected when the sheets are already arranged to lie next to each other on the subfloor, would be much more difficult to carry out.

The invention will be explained below with reference to the drawings. There are shown in :

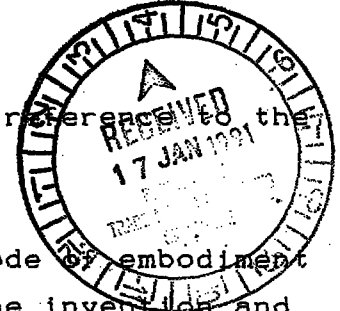


Fig. 1 a part view in perspective of a mode of embodiment of the plastic sheets in accordance with the invention and

Fig. 2 a cross section through the two plastic sheets placed on top of, and joined to one another for the purpose of laying.

A relatively rigid plastic sheet 10 produced in the cupping process has pyramid-shaped indentations 12, as shown in Fig. 1. These indentations 12 determine the shape of the supporting feet of the upper part of the floor of a cavity floor if a screed material is poured onto the plastic sheet 10 serving as a permanent shuttering. On one longitudinal edge of the plastic sheet 10 there is attached a plastic strip 14 which is soft or yielding, above all in its transverse direction along a weld seam 16. The plastic strip 14 has, moreover, at its centre a zone 18 acting as a joint, so that the plastic strip 14 constitutes a hinge which is connected to one hinge portion of the plastic sheet 10 - as a rule, already done by the manufacturer of the plastic sheet - whilst the other hinge portion remains free. On the free hinge portion, there is located at the bottom an adhesive track 20 covered by a protective strip 24.

Now if two plastic sheets are to be joined to each other, the second plastic sheet 10' to be joined to the first plastic

sheet 10 is deposited on the first plastic sheet 10 in an alignment as shown in Fig. 2, the alignment being facilitated by blocks 22 or similar inserted in several indentations 12 of the plastic sheet 10, whose shape is adapted to the indentations 12 of the plastic sheet 10 and 10', as shown in Fig. 2. The free hinge portion of the folded-over plastic strip 14 is then joined to the edge of the plastic sheet 10' after the protective strip on the adhesive track 20 has been removed. In the arrangement as shown in Fig. 2, this work can be comfortably effected from the right hand side. Thus it is not necessary to bridge the width of the plastic sheet 10' to be overcome in the folded-over state, which has to be adopted for the pouring on of the screed material according to the state of the art, and which has been indicated in dots and dashes in Fig. 2, wherein sheets not lying on top of one another but next to each other are joined by means of plastic strips.

A hard rubber bar, not shown, can be additionally pushed under the edge of the plastic sheet 10 or of the plastic strip 14 respectively for the bonding of the hinge portion folded-over upwards, onto the plastic sheet 10' lying on the plastic sheet 10, in order to create a hard base for the bonding process.

Instead of bonded joints, the use of welded joints may also be considered.

Similarly, the plastic strip 14 could also be joined to the plastic sheet 10 only on site - also by way of bonding, if required.

The plastic strip 14 can also be used for joining a plastic sheet 10 to an edge strip at the edge of the cavity floor.

Claims

1. Permanent shuttering for the production of a cavity floor which rests on the subfloor by means of supporting feet, the upper part of the floor together with the supporting feet being formed by pouring a screed material, which in the fluid condition is initially work-
5 able and subsequently sets, onto plastic sheets (10) which are arranged next to one another, have indentations (12) corresponding to the supporting feet, form the permanent shuttering and whose adjoining edges are connected to one
10 another, characterized in that the adjacent sheets (10) are connected to one another in articulated manner by means of a plastic strip (14) which is attached in their edge regions and has a lower stiffness than the plastic sheets.
- 15 2. Permanent shuttering according to Claim 1, characterized in that on the plastic strip (14), in the region between its attachment to the edges of the plastic sheets (19), a zone (18), is formed which has greater flexibility compared to the edge regions of the plastic strip.
- 20 3. Permanent shuttering according to one or both of the preceding claims, characterized in that, along one of its longitudinal edges, the plastic strip (14) is attached by welding to the one sheet and along its other longitudinal edge is attached by adhesive bonding to the other
25 sheet.
4. Process for the production of a permanent shuttering according to any of the preceding claims, characterized in that a second plastic sheet (10') with the indentations corresponding to the supporting feet pointing upwards, is



laid on a first plastic sheet (10) resting on the subfloor by the indentations (12) corresponding to the supporting feet, then the plastic strip (14), which is attached to the lower sheet and is folded over upwards, is connected by its folded-over part to the upper plastic sheet along its edge and, after the production of this connection, the upper plastic sheet (10') is folded over downwards around the articulation formed by the plastic strip (14) so that the second plastic sheet (10') comes to lie next to the first (10) by its indentations on the subfloor.

5. Process according to Claim 4, characterized in that blocks or the like, which protrude upwards above the first sheet and are matched at the top and bottom to the indentations, are inserted into the indentations of the first sheet at one or more points for the purpose of aligning the second plastic sheet (10') to be laid on the first plastic sheet (10).

