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GB 2226061 A

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UK CL (Edition J) **E1D DLGG DLGJ DLEG DLEJ**
INT CL⁴ **E04B**

(54) **Wall using angled shuttering**

(57) A method of constructing the wall of a swimming pool comprises assembling shuttering of inner (3) and outer (4) slab elements spaced essentially parallel and held together by tie bars (6), the shuttering including a layer of elements (12) in which either the inner or outer slabs are set at an angle to the slabs in the layer below so that the separation of the shuttering is changed by the shuttering layer (12). The shuttering is then filled with concrete and a waterproof render is applied to the outside or the inner slabs (3). Using this method the wall can be constructed to support drainage slabs by widening the shuttering at the top of the wall or can alternatively be used to widen the wall where the pool is deep and higher water pressures exist.

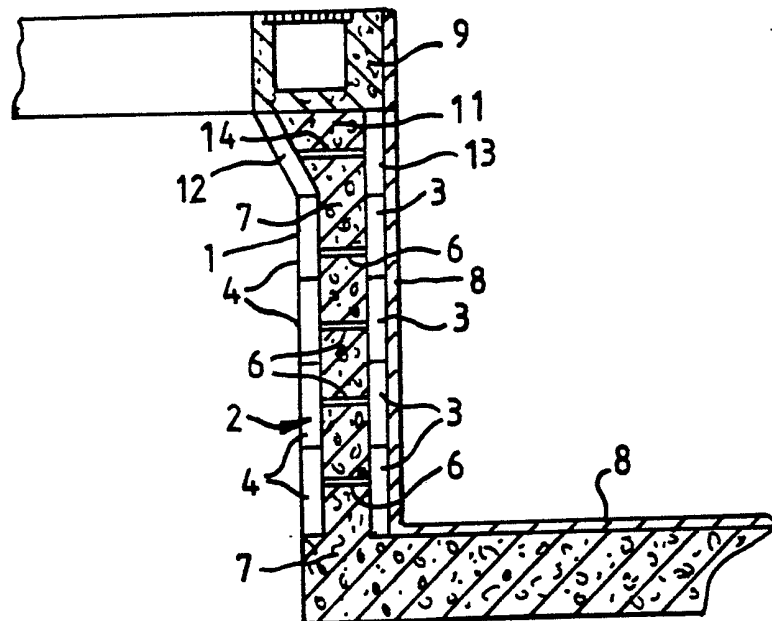


FIG. 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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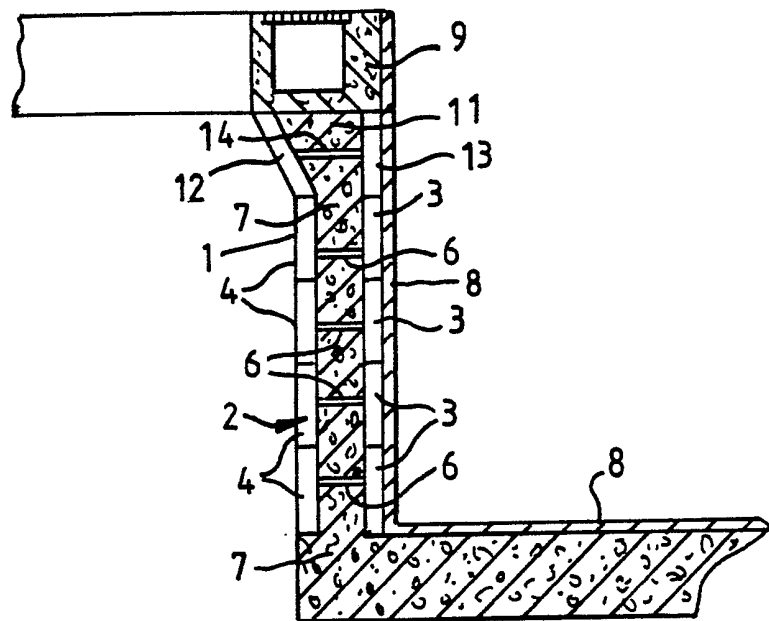


FIG. 1

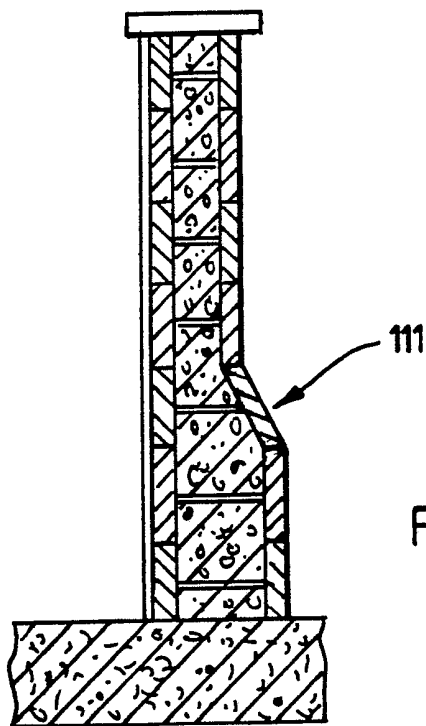


FIG. 2

SWIMMING POOL CONSTRUCTION

This invention relates to the construction of swimming pools, which term may include spa pools and paddling pools of excavated type, and particularly to the finishing of walls for swimming pools.

The now expired UK patent specifications GB 1038841, GB 1103511 and GB 1103981 describe a method of construction and use of shuttering elements comprising two slabs of concrete pinned together in spaced relationship by cast-in tie bars. The shuttering elements are assembled together to form permanent shuttering, by filling with concrete. The outside of the shuttering is then coated on one side with waterproof render to provide monolithic concrete walls for swimming pools.

The spacing between the shuttering elements is usually kept at a minimum to conserve concrete filler, but maintain adequate strength for the swimming pool wall. The top of the wall, however, usually supports, paving and/or drainage slabs. In order to support such slabs the surface area of the top of the wall must be increased usually by back-filling the space between the excavated ground and outer shuttering slabs. This requires additional time consuming preparation work.

In other arrangements it is desirable to have the lower part of the walls thicker than the upper parts to withstand the greater pressure associated with the deeper water in use in the pool.

It is an object of the invention to provide shuttering which to a significant extent overcomes the aforementioned problems.

According to the present invention there is provided a method of forming a wall of a swimming pool by casting concrete into shuttering assembled on site from modular components, in which

the shuttering is built up on site from elements comprising inner and outer slabs assembled together using tie bars in a predetermined generally parallel spaced relationship, including providing a layer of shuttering elements having their outer slabs set at an angle so that the separation between the inner and outer slabs increases or decreases as the case may be. angle to increase the spacing between the slabs at the top of the shuttering.

The invention will be further described by way of example with reference to the accompanying drawing, in which figures 1 and 2 are cross-sectional views through walls for a swimming pool.

Referring to the drawing, in Figure 1 a swimming pool wall 1 is shown comprising shuttering 2 of inner slabs 3 and outer slabs 4, held in spaced relationship by cast-in tie bars 6. Concrete filler 7 is poured in between the shuttering 2 and a waterproof render 8 is applied to the outside of the inner slabs 3 to complete the wall 1 construction.

A U-shaped drainage channel 9 is provided at the top of the wall 1, and in order to support the channel 9 the shuttering 2 comprises a shuttering element 11 having an uppermost outer slab 12 set at an angle to the uppermost inner slab 13 to increase the surface area of the concrete filler 7 at the top of the wall 1. The uppermost outer slab 12 is held in place by a lengthened tie bar 14 compared to the other tie bars 6.

By this embodiment of the invention the width of the wall 1 is increased from 230mm to 350mm to conveniently support a standard U-shaped drainage channel 9.

Additional preparation work to support the drainage channel 9 is no longer required so that the wall 1 and support for surface channel 9 or slabs is constructed in one step rather than wasting time waiting for the filler concrete 7 to set and then

constructing a support for the top of the wall 1 and then waiting for this to set before finishing the construction of the surface channels 9 or slabs.

In Figure 2, in contrast to Figure 1 although with the same savings in additional site work and time, the thickness of the wall is decreased part way up by a layer or row of shuttering elements 111. Such an element if the dimensions are suitable could simply be the element 11 of Figure 1 laid in an inverted configuration. In any event the provision of the element 111, as a "transitional" shuttering section, means that the wall can be easily effectively narrowed as shown half-way up its height during assembly, as it were, ready for concrete infil in a single step to complete the construction. This means that the wall thickness can be easily dimensioned, in its thickness, to suit its working requirements. Where less pressure is experienced towards the top of the pool the wall may be thinner saving substantial material and costs.

CLAIMS:

1. A method of constructing the wall of a swimming pool by casting concrete into shuttering assembled on site from modular components, in which the shuttering is built up on site from elements comprising inner and outer slabs assembled together using tie bars in a predetermined generally parallel spaced relationship, including providing a layer of shuttering elements having their outer or inner slabs set at an angle so that the separation between the inner and outer slabs increases or decreases as the case may be.
2. A method of constructing a wall as claimed in claim 1 wherein a waterproof render is subsequently applied to the inner shuttering slabs.

3. A method of constructing a wall as claimed in claim 1 or claim 2 wherein the outer slabs of the shuttering layer in the top of the wall is set at an angle to the wall below so as to increase the surface area of the concrete at the top of the wall to enable the support of drainage slabs and the like.

4. A method of constructing a wall as claimed in claim 1 or claim 2 wherein an inner slabs of the shuttering layer is set at an angle to decrease the thickness of the wall above that layer where the water pressure is lower.

5. A method of constructing the wall as claimed in claim 4 wherein the inner slabs of the shuttering layer consists of transitional shuttering sections which reduce the wall thickness part way up the height of the wall.

6. A method of constructing a wall of a swimming pool substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

7. A swimming pool wall made using the construction method according to any one of claims 1 to 5.