

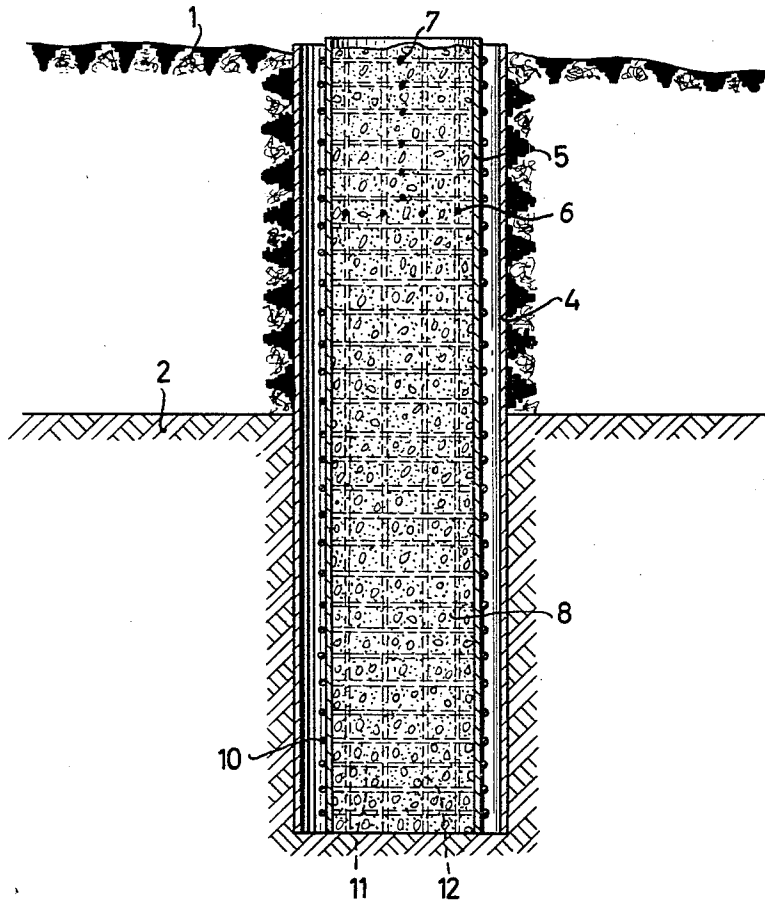
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METHOD OF PRODUCING CONCRETE PILES FOR FOUNDATIONS

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3,396,546 METHOD OF PRODUCING CONCRETE PILES FOR FOUNDATIONS

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1 Claim. (Cl. 61—53.66)

ABSTRACT OF THE DISCLOSURE

A concrete pile foundation is provided by inserting a drilling tube into the soil, inserting a pipe of soluble synthetic material consisting of a polyvinyl alcohol into a cylindrical cage consisting of welded steel, inserting the cage jointly with the pipe into the drilling tube with concrete, withdrawing the drilling tube and allowing the concrete to solidify and to dissolve the pipe.

The present invention relates to a method of producing piles of concrete for foundations of buildings on soft and wet soil.

In many methods of this kind a drilling tube is placed into the soil, then a protection pipe is arranged within the drilling tube and thereafter the concrete mixture is filled into said protection pipe, which remains around the concrete pile after removal of the drilling tube. The removal of the drilling tube is often difficult due to the fact that the concrete column due to its hydrostatic pressure widens the walls of said protection pipe, thus abutting the protection pipe against the drilling tube. This happens especially with protection pipes consisting of synthetic material.

The present invention has for its object to reinforce the protection pipe of synthetic material during the not yet set phase of the concrete so that an easy removing of the drilling tube is made sure.

According to the present invention this is achieved for the described method in that the synthetic pipe is inserted at first into a cylindrical cage formed by wires and then is inserted together with the cage into the drilling tube. The wire cage gives the synthetic pipe the desired stability against the hydrostatic pressure of the concrete column, thus preventing any substantial thickening of the synthetic pipe. By using a reinforcing cage the strength of the wall of the synthetic pipe can be decreased and by this the additional costs of the cage is at least balanced against the costs of less synthetic material of the protecting pipe.

As an advantageous embodiment of the present invention a web of building steel for concrete constructions is used for producing the cage, which web is only rolled together correspondingly and welded along the ends of the wires facing each other.

A further object of the invention is the use of a wire

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cage around the protection pipe of water soluble synthetic material.

The invention will be further described with reference to the accompanying drawing showing an embodiment of the invention.

According to the drawing a drilling tube 4 has passed an upper earth layer 1 and stands with its bottom in a lower earth layer 2 having the necessary load carrying capacity. A cylindrical cage 10 was pushed over a pipe 5 of synthetic material before inserting the pipe 5 into the drilling tube 4, which cage consists of a web of building steel welded together and having horizontal wires 11 and vertical wires 12. For producing the cage 10 a corresponding number of building steel mats is bent cylindrically and welded together at the wire ends 6, 7 facing each other.

The pipe 5 is filled with not yet set concrete 8, whereby the cage 10, especially the horizontal wires 11 avoid a thickening of the pipe 5 due to the hydrostatic pressure of the concrete column. After this is done the drilling tube 4 can be removed without any danger of sticking of pipe 5 within tube 4. If the pipe 5 consists of water soluble synthetic material the wall thickness and the material are selected in a way that the liquids contained in the soil can dissolve pipe 5 and get to the concrete 8 of the pile only after complete setting of the concrete 8. Thus the cage 10 remains within the soil without being firmly connected to the concrete 8 of the pile.

Water soluble synthetic material is available and is to be selected from the group consisting of polyvinyl alcohols.

The cage 10 may also be advantageously built by wires, being wound spirally around pipe 5 or by wire-mesh.

I claim:

1. A method of producing concrete pile foundations, comprising the steps of producing a bore hole with a drilling tube in the soil, providing a cylindrical cage consisting of welded steel, providing a pipe of water soluble synthetic material selected from the group consisting of polyvinyl alcohols, the openings of the cage being of such size as to preclude bulging of the pipe there-through, inserting said pipe into said cage, inserting the combined pipe and cage into said bore hole, filling said bore hole with unset concrete, withdrawing said drilling tube from said bore hole and causing said concrete to set and said pipe to be dissolved.

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