

ANTI-SEEPAGE POOL AND METHOD FOR INSTALLING SAME

5 [Technical field]

[0001] The present invention relates to an anti-seepage pool, in particular to an anti-seepage pool which is convenient to transport, can be dismantled and assembled quickly, is suitable for use in various environments, and can resist acidic and alkaline concentrated liquids.

15 [Prior art]

[0002] With the rapid development of industrial technology in today's world, the use and storage of chemicals, as starting materials of much industrial production, have emerged as the times require. The use of chemical industry is developing more and more towards new standards of large scale and high efficiency. State requirements regarding environmental protection are currently becoming ever more stringent. Seepage will inevitably occur in the large-scale use of chemicals and downstream solution processing, and this is bound to result in environmental pollution. Hence, the use and storage of chemicals, and solution processing after use, have become a key issue. Metal containers currently used for the storage of chemicals are easily corroded, thereby suffering damage, and if a damaged container is not discovered promptly, leakage and pollution will occur, with extremely serious consequences for the environment. In the present era, with chemicals being used in large amounts, the issue of how to effectively implement storage and handle problems resulting from the use of chemicals, to avoid

pollution to the environment in which we live, has already become a technical problem in urgent need of a solution.

5 **[0003]** General practice in the art is to dig a well on site, and to lay an anti-seepage layer on the well bottom and inside the well walls, but this consumes manpower and material resources.

[Content of the invention]

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15 **[0004]** The object of the present invention is to provide an anti-seepage pool in which corrosive liquids or other liquids can be stored for a long period of time, wherein a pool body of the anti-seepage pool can be conveniently and quickly dismantled and assembled, and the anti-seepage pool is suitable for use in a variety of environments and is resistant to concentrated acidic and alkaline liquids, preventing leakage of chemicals which would cause pollution of the environment and groundwater.

20 **[0005]** To achieve the abovementioned object, the present invention is an anti-seepage pool, comprising a pool body, wherein the pool body is formed by arranging a number of combination-type surrounding bulwarks in sequence, the adjacent combination-type surrounding bulwarks being connected together in a rotational, dismantlable manner, and the combination-type surrounding bulwarks being of metal material; an anti-seepage material is laid inside the pool body, the anti-seepage material being able to completely cover a pool base defined by the pool body and multiple pool walls surrounding the pool base; a lug is disposed on a vertical side edge of the combination-type surrounding bulwark, with a first round hole being formed in the lug, and a rotating arm is disposed on a vertical side edge of the other combination-type surrounding bulwark

connected to the lug; a second round hole is formed in the rotating arm, the second round hole of the rotating arm being of the same size as the first round hole in the lug, and a stop arm is installed in the first round
5 hole and the second round hole.

[0006] In an example based on the present invention, the thickness of the anti-seepage material is 0.1 - 4.0 mm.

[0007] In an example based on the present invention, a
10 colour masterbatch is added to the anti-seepage material.

[0008] As a result of the addition of colour masterbatch to the anti-seepage material, the anti-seepage material (e.g., an impermeable layer) has a
15 relatively long service life and is resistant to ultraviolet rays; since the anti-seepage material is made of a macromolecular plastic material, the anti-seepage material is more resistant to chemical corrosion, and can effectively prevent seepage of
20 chemical substances.

[0009] The present invention provides a method for installing the anti-seepage pool, comprising the following steps: step 1, a combination-type surrounding bulwark is fixed in place, and a side thereof having
25 lugs is butt-joined with another combination-type surrounding bulwark having a rotating arm on a side edge; the rotating arm is inserted into a region between the lugs, then a stop arm is inserted, beginning at one side of the lugs, passing through a
30 round hole of the rotating arm and a round hole of the other lug in sequence, to fit together the adjacent combination-type surrounding bulwarks; step 2, other combination-type surrounding bulwarks are fitted together in sequence in the manner described in step 1,
35 to form an anti-seepage pool; step 3, an anti-seepage material is laid, beginning at one side of the anti-

seepage pool, until a base and a sidewall of a pool body are completely covered.

[0010] The present invention proposes an anti-seepage pool, which can be quickly dismantled and assembled and conveniently transported, and the materials thereof can be recycled to reduce costs. The dismantlable combination-type surrounding bulwarks are combined to form a single body, can withstand liquid pressure, and can prevent deformation resulting in leakage.

[0011] Anti-seepage material is laid inside the anti-seepage pool of the present invention, being a polymer material which is resistant to corrosion by chemicals and resistant to percolation, and can effectively prevent seepage of harmful materials such as chemical substances. Moreover, the material also has good resistance to splitting; in the case of tension splitting with a constant tensile load, this property can effectively prevent tension splitting of the anti-seepage material. The laying of anti-seepage material on the base of the pool body of the anti-seepage pool can effectively prevent ultraviolet oxidation-induced destruction, and also has an anti-oxidant action, so is better able to further prevent oxidation-induced destruction effectively.

[0012] The anti-seepage materials of the present invention are in each case joined together by hot-melt welding, to form a single body, which will not easily split, and is suitable for use in any adverse environment.

[Brief description of the drawings]

[0013] Fig. 1 is a three-dimensional structural schematic diagram of the anti-seepage pool of the present invention.

[0014] Fig. 2 is a three-dimensional structural schematic diagram of the anti-seepage pool of the present invention laid with anti-seepage material.

5 **[0015]** Fig. 3 is a sectional structural schematic diagram of the anti-seepage pool of the present invention laid with anti-seepage material.

[0016] Fig. 4 is a drawing showing the connection relationship between adjacent combination-type surrounding bulwarks of the anti-seepage pool of the present invention.
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[Embodiments]

[0017] Embodiments of the present creation are explained by means of specific examples. Those skilled in the art can easily understand other advantages and effects of the present creation from the content disclosed herein.
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[0018] All structures, proportions and sizes etc. shown in the drawings accompanying the description are merely intended to complement the content disclosed herein, for those skilled in the art to acquaint themselves with and read, and not intended to define limiting conditions for implementation of the present creation, and so do not have any substantive meaning in a technical sense. Any structural embellishment, change to a proportional relationship or adjustment to size, which does not influence the effect which the present creation is capable of producing or the object attainable thereby, shall still fall within the scope which can be covered by the technical content disclosed in the present creation. Moreover, terms such as "one", "two" and "upper" cited herein are also merely intended to make the description clearer, and are not intended to define the scope of implementation of the present creation; changes or adjustments to relative
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relationships thereof should also be regarded as being within the category of implementation of the present creation if there is no substantive change to the technical content. The present invention discloses an anti-seepage pool and a method for installing same; in order to make the advantages and technical solution of the present invention clearer, the present invention is explained further below in a clear and complete way with reference to specific examples.

10 **[0019]** Reference is made to figs. 1, 2, 3 and 4, which are a three-dimensional structural schematic diagram of the anti-seepage pool of the present invention, a three-dimensional structural schematic diagram of the anti-seepage pool laid with anti-seepage material, a sectional structural schematic diagram of the anti-seepage pool laid with anti-seepage material, and a drawing showing the connection relationship between adjacent combination-type surrounding bulwarks of the anti-seepage pool. The anti-seepage pool of the present invention is formed by arranging a number of combination-type surrounding bulwarks 1 in sequence. This anti-seepage pool is especially suitable for regions where emergency processing of chemicals is required. The anti-seepage pool can be quickly assembled and dismantled; a connection between adjacent combination-type surrounding bulwarks 1 is achieved by means of a rotational, dismantlable structure. As shown in fig. 4, adjacent combination-type surrounding bulwarks 1 are preferably connected in the following way: a lug 3 is disposed on a vertical side edge of the combination-type surrounding bulwark 1, with a first round hole 30 being formed in the lug 3. The number of lugs 3 may be 2, 3 or 4, and is specifically determined according to the size of the combination-type surrounding bulwark 1. A rotating arm 4 is disposed on a vertical side edge of a combination-type surrounding

bulwark 1 connected to the lugs 3, and a second round hole 40 is provided in the rotating arm 4. The second round hole 40 of the rotating arm 4 is of the same size as the first round holes 30 in the lugs 3. The rotating arm 4 extends into a region between the lugs 3, and the second round hole 40 in the rotating arm 4 forms a straight line with the first round holes 30 in the lugs 3. A stop arm 5 is inserted at one side of the lugs 3, passes through the second round hole 40 of the rotating arm 4 and enters the first round hole 30 of the lug 3 in sequence, and the rotating arm 4 can rotate between the upper and lower lugs 3.

[0020] To increase the pressure resistance of the anti-seepage pool, a steel wire may preferably also be provided in a surrounding manner in a middle region of the installed anti-seepage pool, to further strengthen the anti-seepage pool. Referring to figs. 1, 2 and 3, within an interior space of the anti-seepage pool, including the anti-seepage pool formed by arranging the combination-type surrounding bulwarks 1 in sequence, an anti-seepage material 14 is laid in a region of a sidewall 12 and a base 10. The anti-seepage material is in each case made of macromolecular plastic that is resistant to acidic and alkaline solutions, and has colour masterbatch added thereto; after the addition of colour masterbatch, the colour of the anti-seepage material will change accordingly, and the anti-seepage material will be more resistant to light and more durable.

[0021] Since the base of the anti-seepage pool is in contact with acidic or alkaline solutions or corrosive liquids for a longer period of time, another layer of anti-seepage material is preferably laid on the base of the anti-seepage pool; the thickness range of the anti-seepage material is 1 - 4 mm.

[0022] A method of installing the anti-seepage pool described above comprises the following steps: Step 1, first of all one combination-type surrounding bulwark is fixed in place, and the side thereof having the lugs
5 is butt-joined with another combination-type surrounding bulwark having the rotating arm on a side edge; the rotating arm is inserted into the region between the lugs, then the stop arm is inserted, beginning at one side of the lugs, passing through the
10 round hole of the rotating arm and the round hole of the other lug in sequence, to fit together the adjacent combination-type surrounding bulwarks. Step 2, other combination-type surrounding bulwarks are fitted together in sequence in the manner described in step 1,
15 to form an anti-seepage pool. Step 3, anti-seepage material is laid, beginning at one side of the anti-seepage pool, until the base and sidewall of the pool body are completely covered. The laid anti-seepage materials are in each case joined together by hot-melt
20 welding, to form a single body, which will not easily split, and has high corrosion resistance.

[Key to labels]

[0023]
25 combination-type surrounding bulwark ... 1
base ... 10
sidewall ... 12
anti-seepage material ... 14
lug ... 3
30 first round hole ... 30
rotating arm ... 4
second round hole ... 40
insertion stop arm ... 5

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[Claims]

[Claim 1] Anti-seepage pool, comprising a pool body, wherein the pool body is formed by arranging a number of combination-type surrounding bulwarks in sequence, the adjacent combination-type surrounding bulwarks being connected together in a rotational, dismantlable manner, and the combination-type surrounding bulwarks being of metal material; an anti-seepage material is laid inside the pool body, the anti-seepage material being able to completely cover a pool base defined by the pool body and multiple pool walls surrounding the pool base; a lug is disposed on a vertical side edge of the combination-type surrounding bulwark, with a first round hole being formed in the lug, and a rotating arm is disposed on a vertical side edge of the other combination-type surrounding bulwark connected to the lug; a second round hole is formed in the rotating arm, the second round hole of the rotating arm being of the same size as the first round hole in the lug, and a stop arm is installed in the first round hole and the second round hole.

[Claim 2] Anti-seepage pool according to Claim 1, wherein the thickness of the anti-seepage material is 0.1 - 4.0 mm.

[Claim 3] Anti-seepage pool according to Claim 1, wherein a colour masterbatch is added to the anti-seepage material.

[Claim 4] Method for installing the anti-seepage pool according to any one of Claims 1 - 3, comprising the following steps: step 1, a combination-type surrounding bulwark is fixed in place, and a side thereof having lugs is butt-joined with another combination-type

surrounding bulwark having a rotating arm on a side edge; the rotating arm is inserted into a region between the lugs, then a stop arm is inserted, beginning at one side of the lugs, passing through a
5 second round hole of the rotating arm and a first round hole of the other lug in sequence, to fit together the adjacent combination-type surrounding bulwarks; step 2, other combination-type surrounding bulwarks are fitted together in sequence in the manner described in step 1,
10 to form an anti-seepage pool; step 3, an anti-seepage material is laid, beginning at one side of the anti-seepage pool, until a base and a sidewall of a pool body are completely covered.