INSTALLATION MANUAL

FOR FIBREGLASS-REINFORCED POLYESTER SWIMMING POOLS

OFFICIAL

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IT IS NECESSARY TO FOLLOW THE SPECIFIC INSTRUCTIONS CONTAINED IN THIS MANUAL TO OBTAIN THE REAL GUARANTEE FOR YOUR POLYESTER AND FIBREGLASS SWIMMING POOL

STEP 0: PREVIOUS ACTIONS.

Before starting the installation of our pool, the ground conditions, the location of the accesses and the connections for the installation need to be checked and the pool surround needs to be designed.

Make sure that there is free access for the machinery and the pool to the installation site.

The finishing levels must be defined, bearing in mind the possibility, or not, of installing an artificial stone finish on the edge of the pool. It is recommended that perimeter paving drains water away from the pool shell.

Prior to installing the pool on the site, you must inform yourself about any applicable town planning regulations in force.

For the installation of the pool, you should get advice from a technician regarding the conditions of the plot where the pool and its installations will be located: the load-bearing capacity of the ground, the existence of a high water table or expansive clay soil.

It is advisable, for this operation, to carry out soil tests and a technical inspection of the site. In order to determine the existence or variability of the water table, a test well can be dug to check the water level at the site.

STEP 1: SITE PREPARATION.

The outer contour of the fibreglass pool will be laid out using the template supplied by the manufacturer. The excavation will be carried out following as closely as possible the template for each pool model. The type of excavation will depend on the type of terrain and the height at which pool is to be installed.

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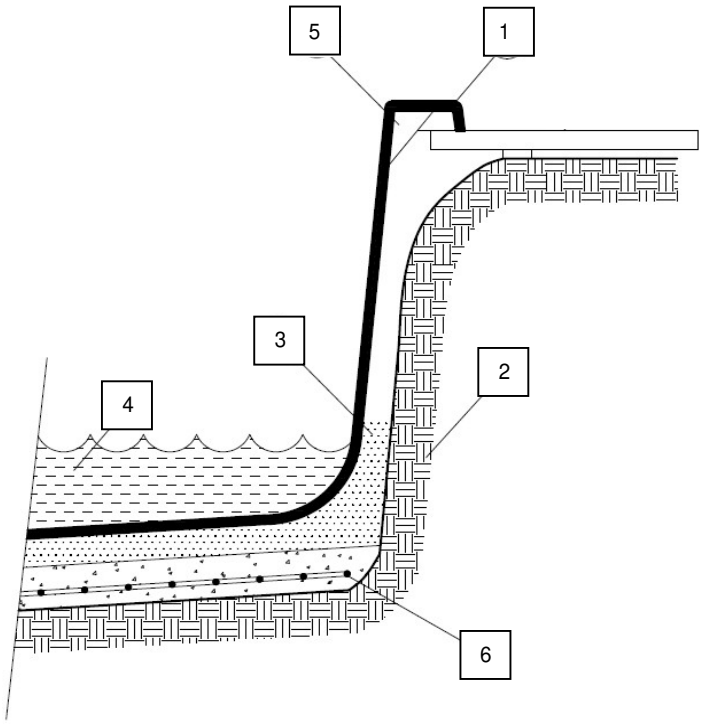
STEP 2: FORMATION OF THE FLOOR BASE.

In order to determine the type and constructive characteristics of the most suitable floor base, it is necessary to understand the terrain where the pool is going to be located and bear in mind that said floor base must meet the following requirements:

- It must withstand the stresses caused by the pool during use.
- It must remain stable in the face of groundwater circulation and small variations in the underlying and surrounding soil.
- It must remain in continuous contact with the bottom of the shell and be level on its transverse and longitudinal axes with respect to the sides of the pool.

FIGURE 1: DETAIL OF 0.4 SAND SCREED BASE



1.-FIBREGLASS SWIMMING POOL

2.- NATURAL SOIL WITH LOW LOAD-BEARING CAPACITY

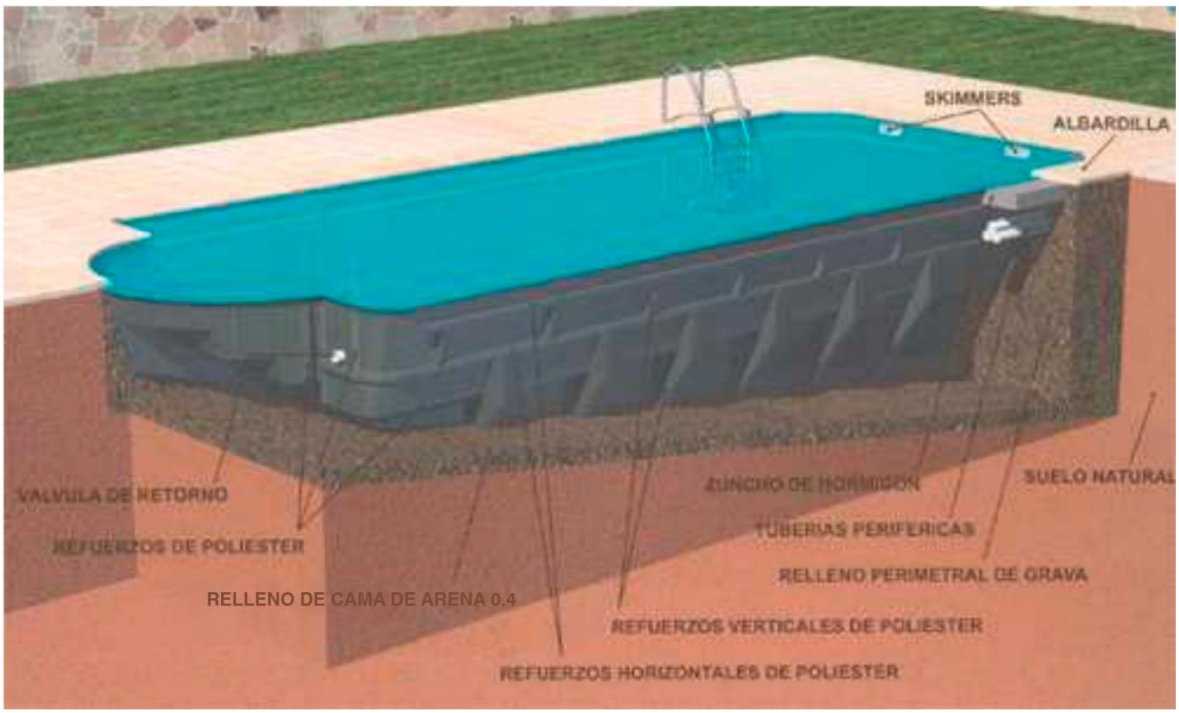
3.- SAND BACKFILL

4.- WATER

5.- UPPER REINFORCEMENTS

6.- 0.4 SAND BASE WITH A THICKNESS OF BETWEEN 8-15CM

GENERAL VIEW



VALVULA DE RETORNO - RETURN VALVE

REFUERZOS DE POLIESTER - POLYESTER REINFORCEMENTS

SOLERA DE ARENA 0.4 - 0.4 SAND BASE

REFUERZOS HORIZONTALES DE POLIESTER - HORIZONTAL POLYESTER REINFORCEMENTS

REFUERZOS VERTICALES DE POLIESTER - VERTICAL POLYESTER REINFORCEMENTS

RELLENO PERIMETRAL DE GRAVA - PERIMETER GRAVEL BACKFILL

TUBERIAS PERIFERICAS - PERIPHERAL PIPES

ZUNCHO DE HORMIGON - CONCRETE EDGE

SUELO NATURAL - NATURAL SOIL

ALBARDILLA - COPING STONE

For the correct installation of the fibreglass pool, a base of compacted fine gravel or sand, free of elements that could deform or damage the pool, should be laid.

If the soil at the pool installation site has a low load-bearing capacity, it will be necessary to backfill

with compacted gravel prior laying the sand base, these variables being defined by the technician supervising the installation.

If the soil is expansive clay, a 20cm reinforced concrete base must be laid, over which the gravel or sand will be laid, and the pool will sit on top of that. To determine the load-bearing capacity of the original soil, you must seek the advice of a specialist technician.

If our natural soil has a high water table, we must have a drainage system. A drainage pipe must be installed on the deepest side of the pool through which we can control the groundwater level. It is important to note that there are areas where the water table can fluctuate considerably depending on the season. It is therefore advisable, in such cases, to carry out a prior study to determine the maximum groundwater level.

At this point of the process, the desired finish levels must be well defined so that the edge of the pool is raised a few centimetres from the surround. The pool surround should be designed so that the adjacent paving drains water away from the pool, keeping rainwater runoff away from the pool shell.

STEP 3: DRAINAGE.

The hydrostatic pressure of the pool must be taken into account, preventing the possibility of the pool floating or shifting. To this end, any drains and drainage deemed necessary must be installed to evacuate, where appropriate, groundwater, water from inside the pool or surface water from the pool surround.

The most appropriate procedure for evacuating the three types of water indicated is as follows:

- Groundwater: whenever possible, this should be drained by gravity. Otherwise, a test well should be used, where the groundwater should be emptied with the help of an automatic float. The drainage pipe should be laid below the base so that the float works under normal conditions without the water level reaching the concrete base. The pump must be in

automatic mode while the pool is empty during installation,

- Water from inside the pool: whenever possible, the pool should drain into the sewer system. If no sewer system exists, you should ensure that the drained water does not seep into the pool backfill. To prevent this, it is important to make sure that the pool is not overfilled (water overflow).
- Surface water from the pool surround: rainwater runoff from the pool surround must be channelled away from the pool, thus preventing it from seeping into and destabilising the backfill.

STEP 4: POSITIONING AND HANDLING THE POOL.

Suitable straps and belts must be used to enable the pool to be moved and suspended using a mobile crane.

The handling of the pool will be carried out by using canvas belts threaded through the cylinders located on the perimeter of the pool, taking care not to turn it sharply or knock it.

The pool will be lowered into the excavated hole, using appropriate wedges and levels until the pool edge is levelled, in accordance with the levels planned. You should check that it sits fully on the bed of sand laid at the bottom, making sure that there are no hollow areas or sharp elements at the bottom that could affect the structure or watertightness of the pool.

STEP 5: CONNECTION OF INSTALLATIONS.

After seating the pool in the excavation, we must proceed with connecting the installations and built-in accessories so that the water is sucked in through the skimmers and sumps, and returned by means of the filtered, conditioned and chemically treated impulsion nozzles.

All water, drainage and electricity installations must comply with applicable regulations in force.

A good water recirculation circuit will provide the user with the following significant savings:

• The time we spend on pool maintenance.

• Consumption of chemical products.

• Energy for water conservation and heating.

All the peripheral installations and built-in accessories supplied by Midel Composite such as underwater lights, skimmers, outlets and jets.

The parts will be installed in the shell of the pool and a bead of polyurethane sealant, supplied by Midel Composite, will be applied to guarantee the watertightness of the whole assembled unit.

STEP 6: CONTOUR FILLING.

The backfill must meet the following general requirements:

- Contain the stresses generated by the ground or the shell of the pool during use.
- Remain stable and unmoving in the event of groundwater circulation or slight variations in the underlying or surrounding terrain.
- Maintain uniform contact with the walls of the pool.
- Ensure that there is no deformation of the pool.

The backfilling of the overexcavation should be carried out with a manually compacted mixture of sand and gravel, with a maximum aggregate size of 16mm.

This backfill material can be improved with cement and water when required (high water table, clayey soil….). If a different backfill mix is used, it must be compactable.

Soils or clays that may undergo seasonal changes in volume due to expansion/contraction depending on water or moisture content should never be used as backfill material.

The process of pouring the backfill into the outer sides of the shell is especially important. We need to fill the area behind the intersection of the walls and the bottom of the shell with special care to prevent the backfill material from getting into the base and bottom of the pool.

Too much backfill material can alter the original shape of the walls both during installation and when the pool is emptied in the future.

Next, the shell of the pool is filled to a height of about 20cm and then the sides of the shell

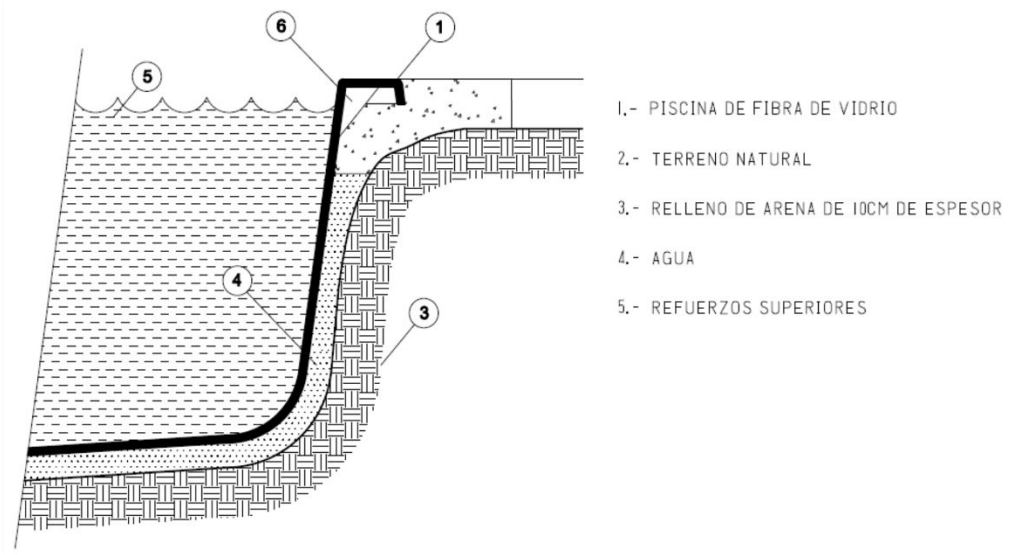
overexcavation can begin to be filled in. This process will be repeated until the pool is completely full, always taking care that the level of the water in the pool is always about 20cm above the level of the backfill material. In this way the tensions are compensated, and the fibreglass pool is not subjected to excessive stresses that could damage it.

This operation is the most important in the execution process.

However, we should bear in mind that there are models in which it is difficult to maintain those 20cm of water as some models tolerate greater amounts than others. There are models that, with 12m3 of water (how much a tank holds), we use about 90cm of water, whereas in others, such as flat-bottomed pools, we use about 45cm of water.

If the pool is filled using water tanks, you will need to prop up the pool on the inside as you continue to bury it so that the walls can withstand the pressure exerted by the water from the tanks.

FIGURE 2: DETAIL OF SIDE FILLING WITH SAND AND COMPACTED GRAVEL



1.- FIBREGLASS SWIMMING POOL

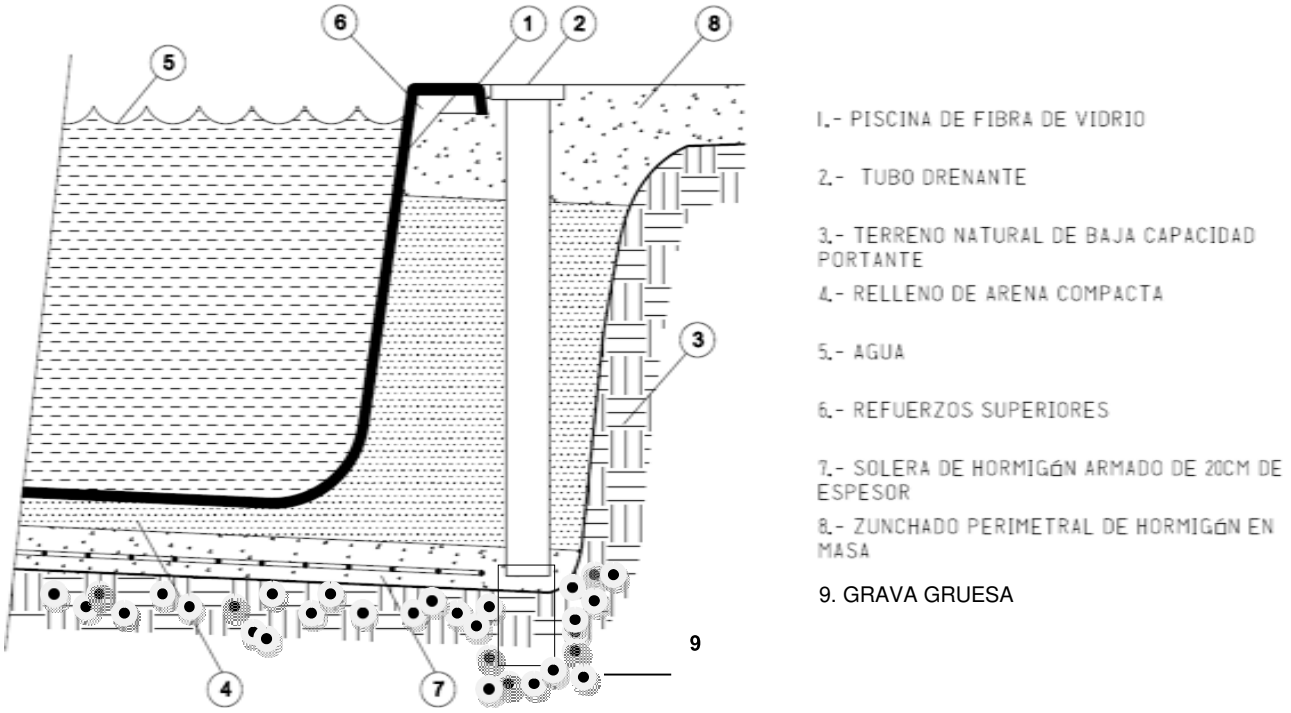
2.- NATURAL SOIL

3.- 10CM LAYER OF SAND BACKFILL

4.- WATER

5.- UPPER REINFORCEMENTS

FIGURE 3: DETAIL OF POOL WITH DRAINAGE PIPE



1.- FIBREGLASS SWIMMING POOL

2.- DRAINAGE PIPE

3.- NATURAL SOIL WITH LOW LOAD-BEARING CAPACITY

4.- COMPACTED SAND BACKFILL

5.- WATER

6.- UPPER REINFORCEMENTS

7.- 20CM THICK REINFORCED CONCRETE BASE

8.- REINFORCED MASS CONCRETE EDGE

9.- COARSE GRAVEL

The coarse gravel allows the passage of groundwater into the test well without damaging the sand base.

Once the correct execution of the pool and its installations have been completed, follow the instructions contained in the maintenance and conservation manual in order to obtain the real guarantee for your fibreglass pool.