

CENTRAL POOL

BUILDING PREPARATION FOR
SWIMMING POOLS

POOL LOCATION:

First we measure the area where the pool is located. It is important to think well, we can prevent problems later (short sunshine, leaf fall from nearby stands, no mixing with the environment, increased level of groundwater, etc.). It is good to consult with the garden architect or civil engineer. He can find the right place and find pool space, taking other factors into account.

Note. For all earthworks and construction work, we expressly recommend qualified and authorized companies that are designed and carried out by them. We also recommend that you only apply for construction companies who have experience with installing the pool (mainly from PP), because irreversible damage can occur!



EARTHWORK:

Construction of the pool will begin with earthworks. The dimensions of the construction pit (including the base plate) are determined by the inner dimension of the pool add min. 35 cm on each side, ie. min. 70 cm in length and width, see drawings. At the pool with an overflow channel on each side, 10 cm is added. To the depth of the pool we add min. 25 cm (gravel, concrete and styrofoam are included) and this gives us the total depth of the construction pit. But you have to consider whether the pool will be completely or only partially deepened also depends on the type of surface (... sandstone, paving, wood, aluminum rail ...) what will be the pool boundaries.

At the point where the stairs are, we recommend enlarging the pit at the top of the trench to reach the sub-floor.

Excavation

- The total excavation size should be 100mm larger in length and width than the pool floor plan, including stairs
- Keep in mind skimmer, counter current system, etc.
- Recess on the stairs for exact concrete backfilling
- Recess on the side where the PVC pipes should be connected
- The same is valid for a technological shaft or a buffer tank

350 mm
350 mm
Skimmer

350 mm
350 mm
Overflow

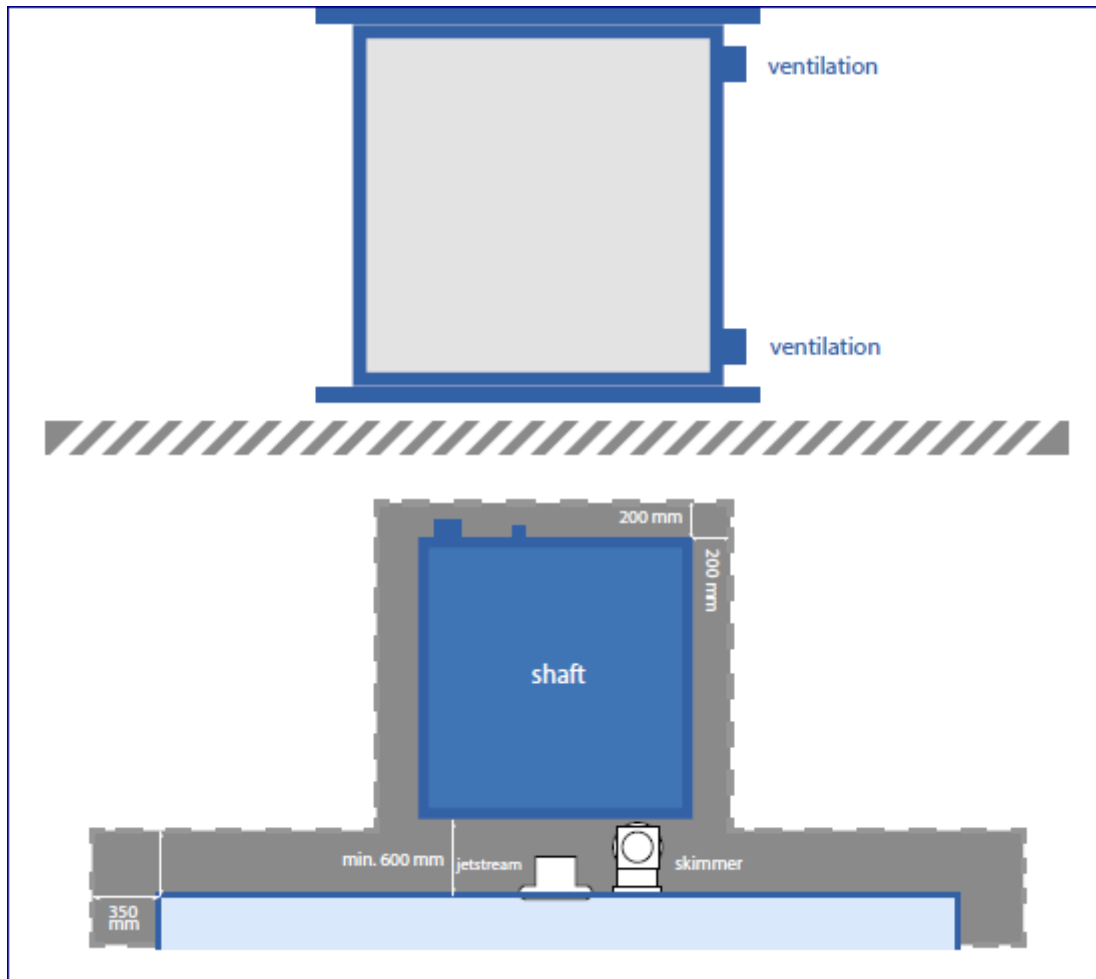
bottom 8 mm
polystyren 20 or 40 mm
concrete
reinforcing net
gravel 150 mm
100 mm

TECHNOLOGY SHAFT:

It is good to equip the manhole with a drain to the sewer, which we can prepare at the manhole on request. Not to have drains lead to a major fall. It is only used to drain water during sand washing and wintering. It is also used to randomly drain water from flooding the well to prevent the engines from flooding. The shaft can also be provided with a drain channel for sand washing. This is located in the rear wall at a height of approx. 80 cm from the floor and is connected to the drain from the filtration. The shaft is equipped with d110 ventilation openings (one at the bottom, the other under the cover). The plugs are removed after the pipes have been connected. The pipes must be routed across the site and properly secured. Penetration of water, rodents, insects, etc. This will prevent condensation from forming in the manhole. If the walls and lid overflow, the customer can build the ventilation ducts into the duct for forced air circulation. Dimensions of the pit for technological shaft specified manufacturer

according to its type. When installing a plastic shaft from our company, this shaft is concreted in a similar way to the swimming pool skeleton, but ONLY after the pool has been connected to the shaft.

If there is an elevated groundwater level at the installation site, it does not make sense to use a standard shaft, but a special shaft in the aquifer. The manufacturer assumes no liability for damage to the pool, shaft and other facilities due to the increased groundwater level. Both the constant surface and the level increases temporarily after heavy rainfall in impermeable soils. If the pool is equipped with a countercurrent system, it can be housed together with the filtration in a shaft or in a special shaft, the dimensions of which are specified depending on the type of product. This shaft is also concreted.



ROOM FOR TECHNOLOGY:

If the technology is outside the shaft (e.g. garage, cellar, garden shed), bushings for the pipeline must be prepared (the bushings must not be angled by 90 °) The space for the technology should be min. Floor plan 1m x 1.4m, height 1.5m

FOUNDATION PLATE PREPARATION:

In the excavation we will be min. 10 cm gravel fraction of fraction 8/16. When installing in the location of the pool of water above the ground than the upper or during installation in impermeable soil (clay), a layer of gravel with drainage must be used or equipped with pumps so that the water does not rise higher than the bottom of the

swimming pool. Then pour the reinforced plate with a thickness of 15-20 cm. Concrete class C25 / 30 EN206. The horizontal plane of the plate must have a maximum deviation of 5 mm, at the pool with 2 mm overflow over the entire length and width. We recommend creating a self-leveling layer under an overflow Pool

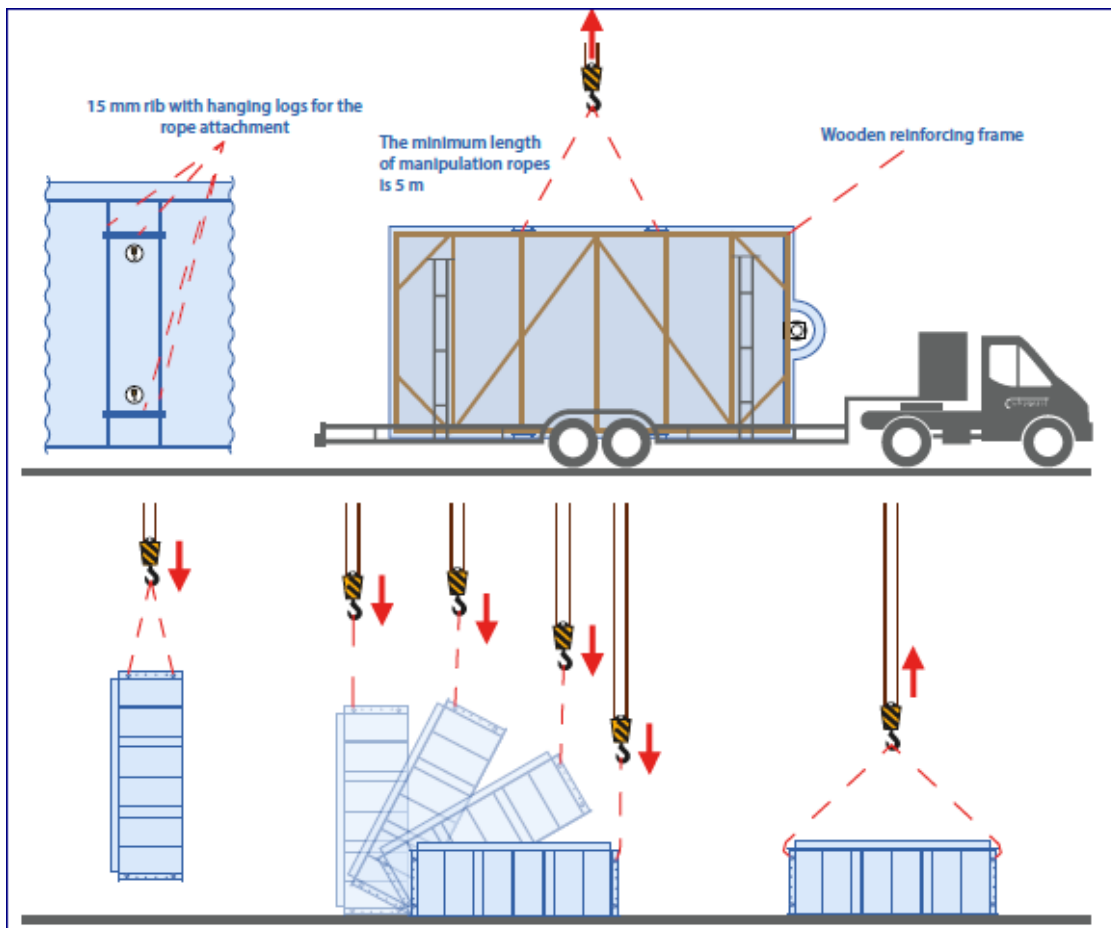
Concrete use reinforcing sieve 150x150 - wire at least 4 mm.



MANIPULATION WITH POOLS:

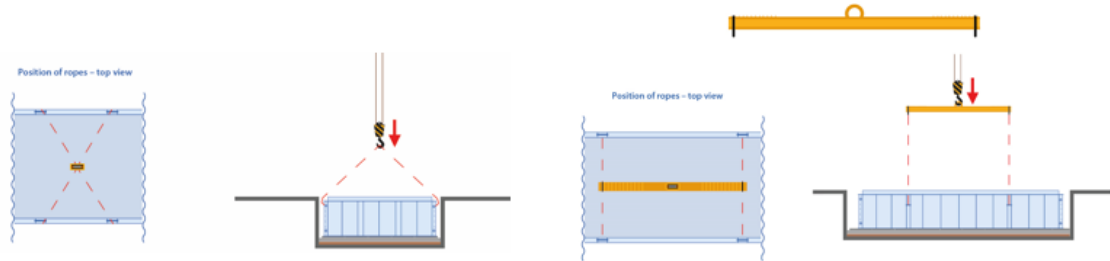
Do not remove the wooden frame, it serves as a support for handling and subsequent concreting. It is only removed after the bit fastening has been attached.

A 15 mm rib with a hanging tree trunk is provided for handling the pool. Use the crane to remove the pool from the semi-trailer and slowly lower it into a horizontal position. We use hanging pinions to transport the handling ropes that we attach to the crane hook. The minimum length of a belt should be 5 m, the pool is slowly raised and carefully placed on the prepared base plate. Be careful when handling.



It's possible to unload the pool in two ways: crane or helicopter

- Pool weight is indicated on each tech. drawing (about 600 – 2.500 kg)
- If the pool is equipped with a roll cover system you should count + 300 kg
- Manipulation travers used. Vertical length of the textile straps must be at least 6m from the upper edge to the crane hook to prevent excessive pressure on the side walls.



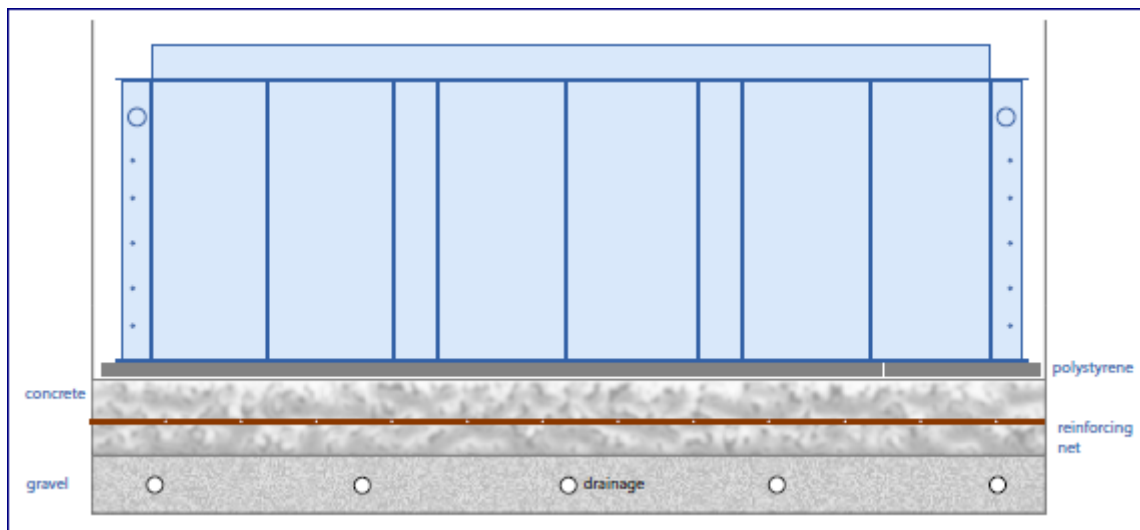
LAY DOWN OF POOL:

After the concrete has hardened (recommended 1 month / at least 5 days for hardening) apply hardened polystyrene (standard 2 cm). When laying the skeleton in the pit, you need to be careful that the styrofoam does not move. We recommend sticking the styrofoam together with paper tape or sticking it to the concrete with an adhesive.

Moving the pool from the lift to the pit is not part of our delivery. The crane and the corresponding number of people handling the pool are provided by the investor. Once the skeleton is set to the desired location, the investor will check the location for accuracy.

Before concreting, check that all valves in the manhole are closed and that the cable lights up vertically. (If you have a roof cover, place the connection box from the luminaire so that it does not cover the rails when the roof is installed! It must be freely accessible).

We also recommend that the construction and installation of the swimming pool are carried out exclusively by companies that have experience in swimming pool construction in order to avoid mistakes that can lead to visual defects in the pool or even to malfunctions or damage.



CONCRETE OF POOL

The thickness of the concrete wall

The thickness of the all-round backfilling should be 200-250mm (but at least 150 mm when assessing the construction by a structural engineer with regard to the design of the use of additional steel reinforcement). However, it must be ensured that there is enough space between the wall of the trench and the edge of the pool for the storage of the concrete and its compaction.

The pool is equipped with a reinforced wooden structure at the top. Also, check that the pool's internal dimensions are correct. Before starting the pouring process, about 30-40 cm of water is poured into the pool and the concrete is poured with sparse concrete at a height of about 30 cm. The next day, another 30-40 cm of concrete is damp concrete - lean concrete (concrete class C25 / 30 EN206). The water in the pool must always be about 10-20cm higher than the concrete. Compact the concrete in such a way that the walls are not deformed and it is necessary to check their verticality. It is advisable to constantly check the inside dimensions of the pool, especially the upper edge, when measuring and visually. (All concrete should be divided for about 3 days).


Advice: During concreting, especially during the summer months when the temperature in direct sunlight is high, thermal expansion occurs in PP pools, which can lead to subsequent wall deformation. Therefore, pour the concrete in the morning or in the late afternoon and avoid direct sunlight !!!!!

The same applies to installation at low temperatures, where concreting can take place at a temperature of up to +10 degrees Celsius. Nevertheless, we strongly recommend that the water in the pool be heated to a temperature of min. 20 degrees to minimize the thermal expansion of the material. (see chapter expansion). It is suitable to use a heat pump to heat water during concreting.

GROUNDWORK

Concrete backfill

1. Pool should be backfilled with a dry mix concrete, type C25/30
2. At least 200mm of concrete around the pool is required
3. Concrete works should be made in 3 days
 - Fill up the pool 300-400mm of water
 - Backfill pool including stairs with concrete in the same height as the water level (300-400mm)
4. Important: backfilling must be slowly and evenly, do not stamp or shake concrete
5. Concrete backfilling should be done especially in the summer in the morning or evening (sunshine - thermal expansion)
6. Remove the tilt and wooden structure after concreting
7. Protective foil on the plates should be removed after the pool installation
8. Optionally you can also use for concreting **Thermotec** material



TERMOTEC

When using Thermotec, the walls can be concreted at the same time. The pool must be filled with water up to a height of 40 cm. The manufacturer of Thermotec recommends creating a concrete ring above the thermothermal equipment.

The stairs are not lined with styrofoam as they cannot be secured. Transport can cause deformation and consequential damage. The stairs can get pinched during construction, but the thermal properties of the pool will not have much of an impact. If you are interested, we can prepare Styrofoam for stairs with a pool on request. When working underground, it is necessary to check the evenness of the stairs with a level gauge and carefully pour the concrete under the stairs so that the treads do not move when walking. We recommend the concrete as dry as possible, because it must be properly compacted so that there is no gap between the stair surface and the concrete. Always pay close attention to all structural changes to the pool to avoid damage!

It is not recommended to use mechanical machines for surface compaction during concreting. Due to the compaction, the swimming pool can change its natural shape which, after the concrete has hardened, causes damage to the swimming pool, pipes and cabling. Damage and repairs until after concreting mean considerable complications and costs. If you have any questions, please contact us.

Note.

For all earthworks and construction work, we expressly recommend qualified and authorized companies that have trained employees. We also recommend that you only apply for the construction companies that are involved in installing the pool (mainly made of PP or GRP) have experience.

THERMAL EXPANSION:

All polypropylene pools have a phenomenon called thermal expansion that causes the pool walls or floor to bulge. Every material has a coefficient of expansion. This also applies to all plastic pools, whether PVC, polyester or PP material. In the case of concrete pools, the expansion can lead to the formation of cracks and also to the peeling of slabs. This is by no means the case with our PP pools.

Thermal expansion is a phenomenon in which the length dimensions of the body are changed when the body heat is removed (after the body is heated / cooled to a certain temperature). Most substances expand when heated, that is, their molecules move faster and their equilibrium positions are further apart.

This phenomenon usually occurs when the water is drained from the pool and heating from sunlight occurs at the same time.

As soon as the pool is replenished, the shape returns to its original position, as the walls are not only cooled by water, but also by the water pressure applied to the walls.

The PP pools are set and then backfilled (Thermotec or concrete etc.). The walls are therefore freely "floating" and hardly connected to the background (filling material). This is a good thing, the walls can expand or contract with temperature changes. This relieves the tension in favor of quality. At the very top where the reinforcements are missing, a concrete ring is built on site for stabilization. This stabilizes the top PP edge for laying the edge slabs and at the same time gives the kerbstone slabs a fastening hold.

We have been building such PP pools for twenty years and this year we will have delivered around 700 pools across Europe. The experience is great and the dealer and customer satisfaction is unique.

Thanks to our many years of experience, we are the only production company to use 50mm sandwich panels on the outside of our pools. Consciously and based on technical experience, we leave our walls in the tried and tested 8mm for quality reasons, also in connection with the expansion. At the top of the pool we weld a PP horizontal bar with an L-angle to stabilize the edge.

The walls can and should expand due to temperature differences. Since the pool is backfilled and can hardly expand outwards in length and width, this happens inwards and walls can therefore undulate. This is completely normal and does absolutely no harm to the quality. The waves get stronger or weaker depending on the temperature fluctuation and, together with the filled pool, are never a problem and also hardly visible.

Please always leave the pool filled and if water is drained (e.g. cleaning) then the pool should only be emptied when the temperature is normal and without direct sunlight.

We understand a customer's initial reaction when they see the walls flex when the pool is empty. We hope with my remarks that we could bring the all-clear and some reassurance.

This also applies in particular to the roller shutter slats. These must never be exposed to the sun without water cooling.

In these cases, the protrusions in the situation are certain to be normal and not a guarantee of limitation.

Note1:

However, our guarantee does not apply to the following:

1 / groundwater level higher than the pool floor = great external pressure on the pool skeleton. The floor in particular is very busy and is slowly getting longer.

2 / Installation in the clay. The clay forms another watertight tank in which rainwater is absorbed and which puts enormous pressure on the pool. Similar to point 1 /. Sometimes it's even worse than 1 /.

3 / Low temperature condition during installation and high water temperature after heating. The difference in the size of the pelvic skeleton at +5 and +35 ° C can be approx. 2 cm. The pool is limited by the size of the concrete shell, so that the flexibility of the floor goes to the free space = waves.

4 / The installed pool was left empty for a long time without water. Long-term sunshine in summer can make the soil very elongated. Sometimes it happens that the floor does not reach the original size and remains a little larger.

5 / The water level during backfilling was too low and the concrete pressure too high or insufficient. This can bend the wall inwards or outwards and make waves on the floor. It can be a combination of these problems.

Note2:

Central Pool does not recommend that the top edge of the pool is not covered by flooring, aluminum strips or anything else. The central pool indicates that the edge might not be completely straight due to the concrete or the properties of polypropylene = thermal expansion. The following claims will not be considered in this way.