



CITY POOL Installation and Maintenance Guide

Manufacturer's guide and warnings:

The „City Pool“ body is made of a composite materials (epoxy, polyester resin and fiberglass, gelcoat color coating) and and is an essential dig into the earth swimming pool element.

The „City Pool“ is an artificial, water-filled reservoir, where water is filtered and disinfected. The pool is complete with all the equipment necessary for the operation of the pool.

Each swimming pool must be equipped with a standard safety system with regard to security of children under 5 years (January 3 2003 Law 2003-9). Such device must meet one of the AFNOR standards (P906306/307/308/309). If you have any doubt on this text interpretation, please contact your distributor.

The whole composite pool body must be completely filled with water all the time (the minimum level of middle skimmer). If you are intended to drain water from the swimming pool, partly or minimally or even for very short time, please follow recommended precautions or contact your distributor.

Do not use products which were not recommended by your distributor, especially products based on metal ions, which may not be compatible with body materials.

All electrical wiring installation must be protected by devices with overload protection and earth leakage protection (sensivity 30mA), installed by a qualified licensed technician.

Do not store the pool with sealed protective films for more than 30 days (this is transportation protection). In the long run, unpeeled film chemicals can penetrate the gelcoat surface and irreversibly change color.

In all cases and at all stages of using your swimming pool, if any doubt occurred, please, contact your distributor or, in extreme cases, the manufacturer.

Attention!

Pool damage resulting from improper installation or maintance may not be covered by Luxe Pools warranty.

Following of recommendations stated in this guide is a necessary condition for our products guarantee.

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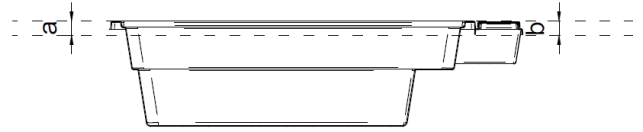
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General dimensions and exterior admissibility rules (AFNOR AC P90-321)

Installation of the swimming pool according to the terrain

a) according to the planned „0“ (Alt. 0.00) ground level

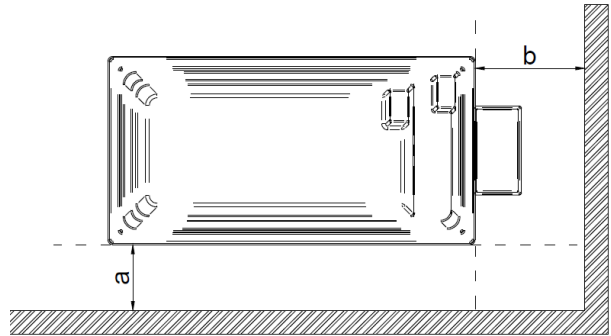
acceptable tolerance from - 2 cm to + 3 cm.



b) acceptable tolerance according to the layout on the ground :

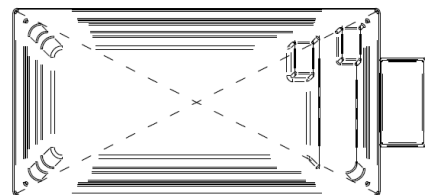
according to the width : ± 3 cm ;

according to the length : ± 3 cm.



c) The square according different diagonals :

acceptable tolerance 5 mm to meter

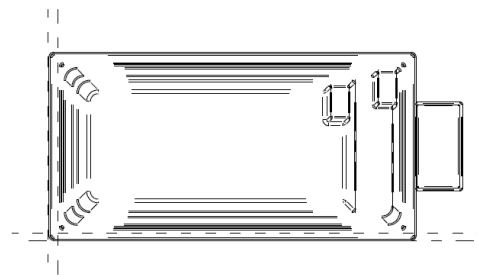


Pool Walls and Bottom tolerances

a) at the water line :

± 2 cm maximum deviation for walls 2m long

± 5 mm maximum deviation for walls 20cm long



b) bottom :

± 3 cm maximum deviation for walls 2m long

± 6 mm maximum deviation for walls 20cm long



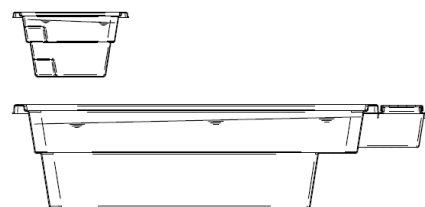
Water level in the pool

a) Between 2 skimmers / length of the pool :

over a width of 0 to 5 meters: 1 cm;

over a width of more than 5 meters: 2 cm;

b) Horizontality of the basin: maximum 2.5 cm.



WORKFLOW AT THE CONSTRUCTION SITE

1. Terrain features and soil quality

It is important to learn about the nature and stability of the soil in the location, where swimming pool will be installed, as well as in the neighbouring areas, addressing a request to Nature and technogenic risks state authority.

If you doubt, please, contact specialist (geologist) and determine necessary work, stated in installation manual, by performing examination (ditch, auger drilling etc.) on the work site.

Swimming pool must be installed on a stable, homogenous, sufficient load-bearing capacity soil, without water.

Particular attention should be paid to the quality of the subsoil, water drainage around swimming pool, beaches and stairs.

2. Marking, level points

Before starting installation, it is important to accurately define boundaries of the swimming pool installation (location, height adjustment) and carefully note them in the installation agreement documentation signed and stamped by both parties (client and contractor). Make sure that there is no gas, electricity, telephone, irrigation or drainage network on the site; otherwise consider their withdrawal, which should be performed by licensed professional.

Attention!

It is not recommended to install swimming pool on the soil poured recently (less than 3 years ago), otherwise there is a risk of sinking. If the installation location is on a natural slope, it is necessary to install a platform and retaining walls.

Before swimming pool installation soil must be stabilized by any appropriate means; this work should be performed by specialists.

2.1 Zero point (0) (Alt 0.00)

The zero point (0) is the reference level point, it corresponds to the altimetry of the finished work. It is used to define the level of your pool in relation to the layout or slope of your land.

The Zero point will be the reference point for the duration of the site, use a stationary reference (on the building or on support pole outside of access area).

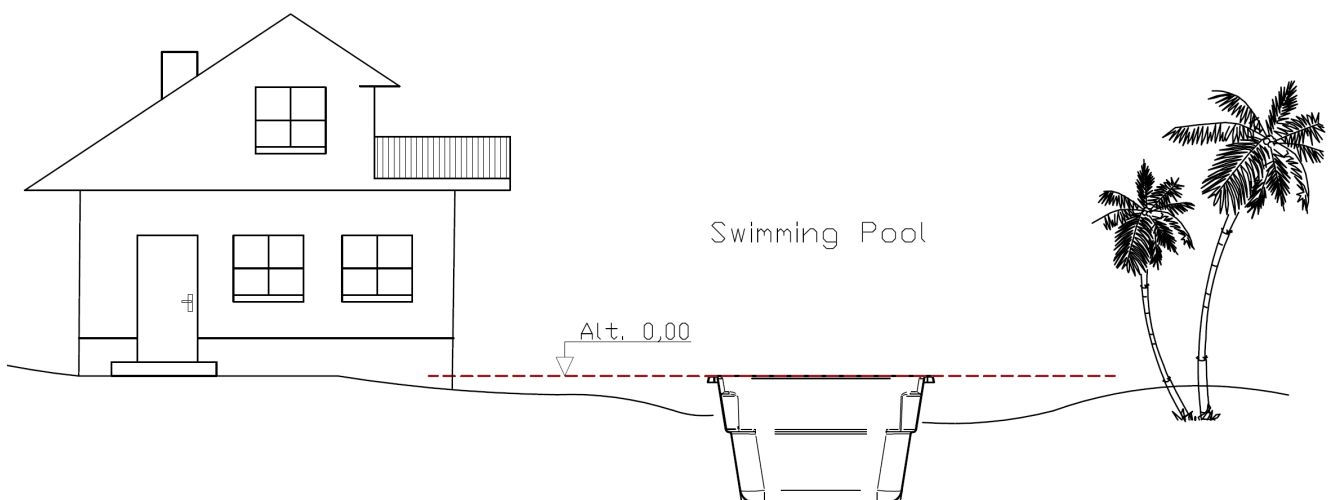


Fig. 1 Zero point (0) (Alt 0.00) level marking

2.2 Marking

Mark edges with sticks, strings and marking balloons, while performing checking of diagonals and corners.

„City pool“ external dimensions 4,75 x 2,43 x 1,37m (with Honeycomb bottom).

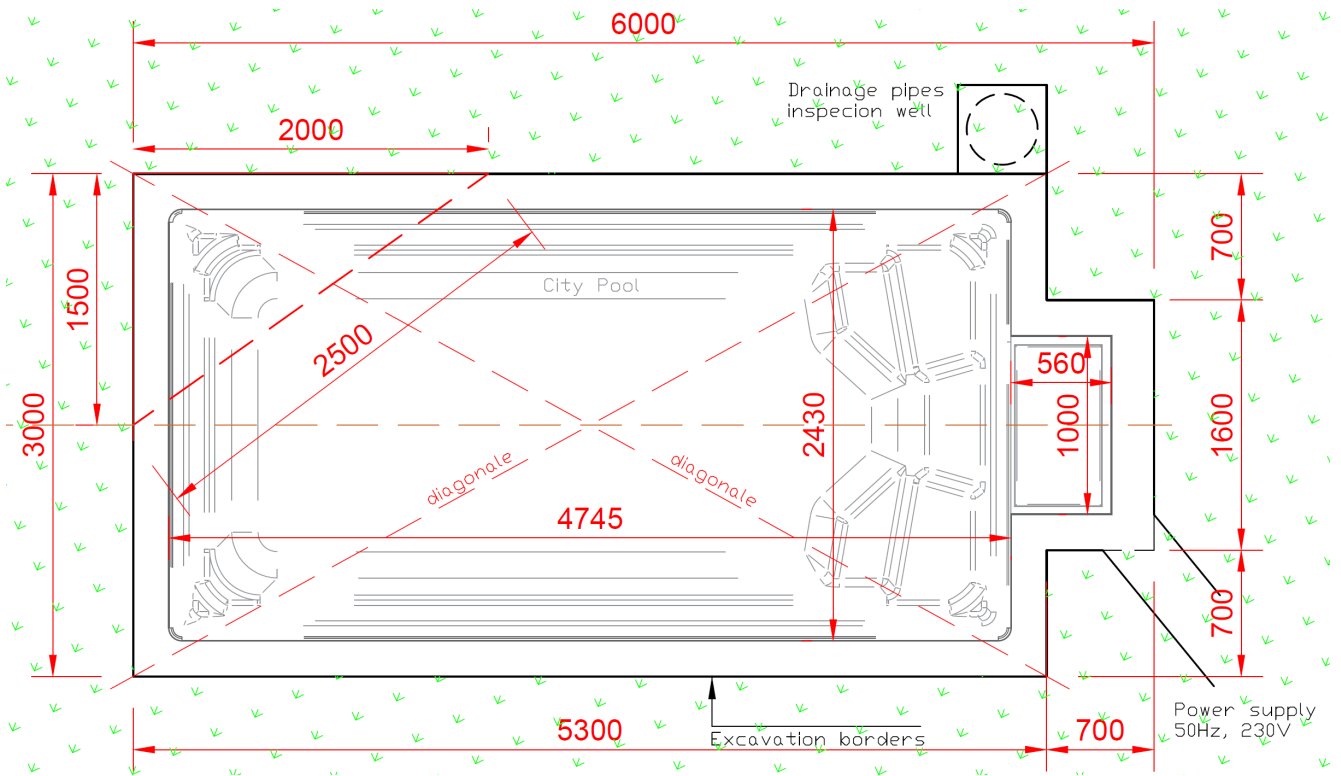


Fig. 2 Mark Out an Area for the Swimming Pool Installation

2.3 Calculation of Diagonals and Squareness checking

Squareness Checking (Fig.2):

- mark the dot 2 meters from the corner on the long edge of the pool
- mark the dot 1,5 meters from the corner on the short edge of the pool
- measure the distance between the 2 aided points, it should be 2.5 meters (repeat the marking if larger).

Triangle diagonal: the square root of ((length x length) + (width x height)), t.y. $c = \sqrt{a^2 + b^2}$

Recommendations :

- ☞ Set the swimming pool with the skimmer facing the against wind.
- ☞ Mark on 30 cm distance to each swimming pool edge. Accurate marking helps to save soil for pouring.
- ☞ Zero point is swimming pool edge level. It should be marked on a pole or on building, tree. This will be necessary for ground work and terrace which will be installed later.

3. Ground works

The purpose of ground work - is to make an excavation for swimming pool body. You have to be extremely careful at this stage (significant ground work can have negative impact on the stability of the swimming pool, so you need to take into account the relevance of dimensions, stated in this guide):

- The excavation must be cleaned and cleared of all extraneous elements (stones, roots, etc.) or sedimentation (friable soil etc.)
- Follow excavation dimensions stated in this guide
- If the pit is too deep, the pit must never be filled with loose earth. Rubble should be used. Place the geotextile on the bottom of the pit and restore to the desired level.
- Remove smooth or friable soil around excavation works for safe filling machine moving (Bobcat or wheel barrow), as well as giving access around the swimming pool for further works.

3.1 Water and Ground water level

If excavation work is carried out on the friable soil, it is necessary to follow specific precautions. Sump or drainage system must be installed or the rapid removal of filtered water, rain water or ground water. It is very important at the bottom of the hole, where the swimming pool is set, to install one or more drainage balance wells together with peripheral drainage, consisted of rubble for backfill. It is aimed to collect ground water and dry soil during the construction and possible water leakage at the end of the work. In the case if the ground surface has a natural slope, collect the water in the lowest part.

3.2 Vertical drainage or precipitator (drainage inspection wells)

The presence of this drainage is necessary condition for your swimming pool guarantee; any equipment without planned vertical drainage is deemed not satisfying the requirements of this installation guide.

External water level should always be below the water level of pump room bottom.

This drainage consists of a drainage pipe (laid in the bottom of the pit) and a special inspection well-shaft.

The drainage pipe is laid at the bottom of the pit along the entire perimeter with a slope to the shaft. Minimum well diameter d315mm. It must be installed below the base level (500mm), on crushed stone- rubble and isolated from natural soil using a geotextile coating.

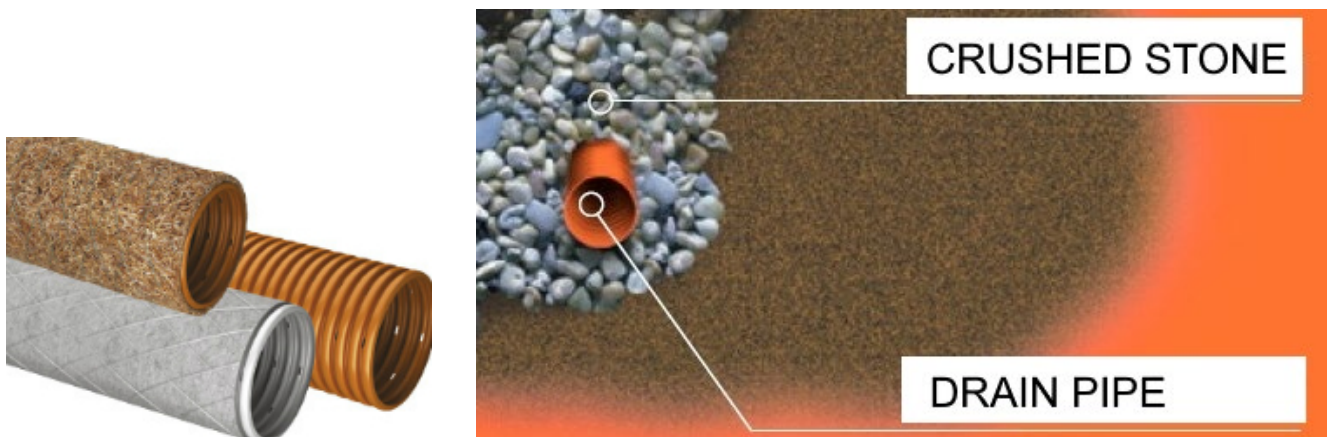


Fig. 3 Drain pipe



Fig. 4 Drain well

It is very important that the drainage pipe you are installing is wrapped with filtration material that will protect the pipe from soil particles entering the pipe holes, so the drainage system will serve you for a longer time and will work efficiently.

The drainage pipe should be installed slightly lower than the pool bottom level. The pipe is laid in an open trench, the bottom of which is formed by a stone-free screed, about 40mm thick. Usually the pipe is laid with a 3 % slope. If opportunities allow, it can also be laid with a larger slope. It is advisable to make an infusion of rubble with a fraction not exceeding 32 mm around the pipe.

Water-permeable soil must be poured over the rubble. Do not pour impermeable soil excavated at the same location as the drainage system would not function effectively.

Special connections are usually used to connect drainage pipes to a well. It is advisable to place the inspection well-shaft near the pool.

The collected groundwater can be diverted from the site by underground PVC pipe to the nearest ditch if the soil properties allow. If not, a sump pump must be installed in the inspection well.

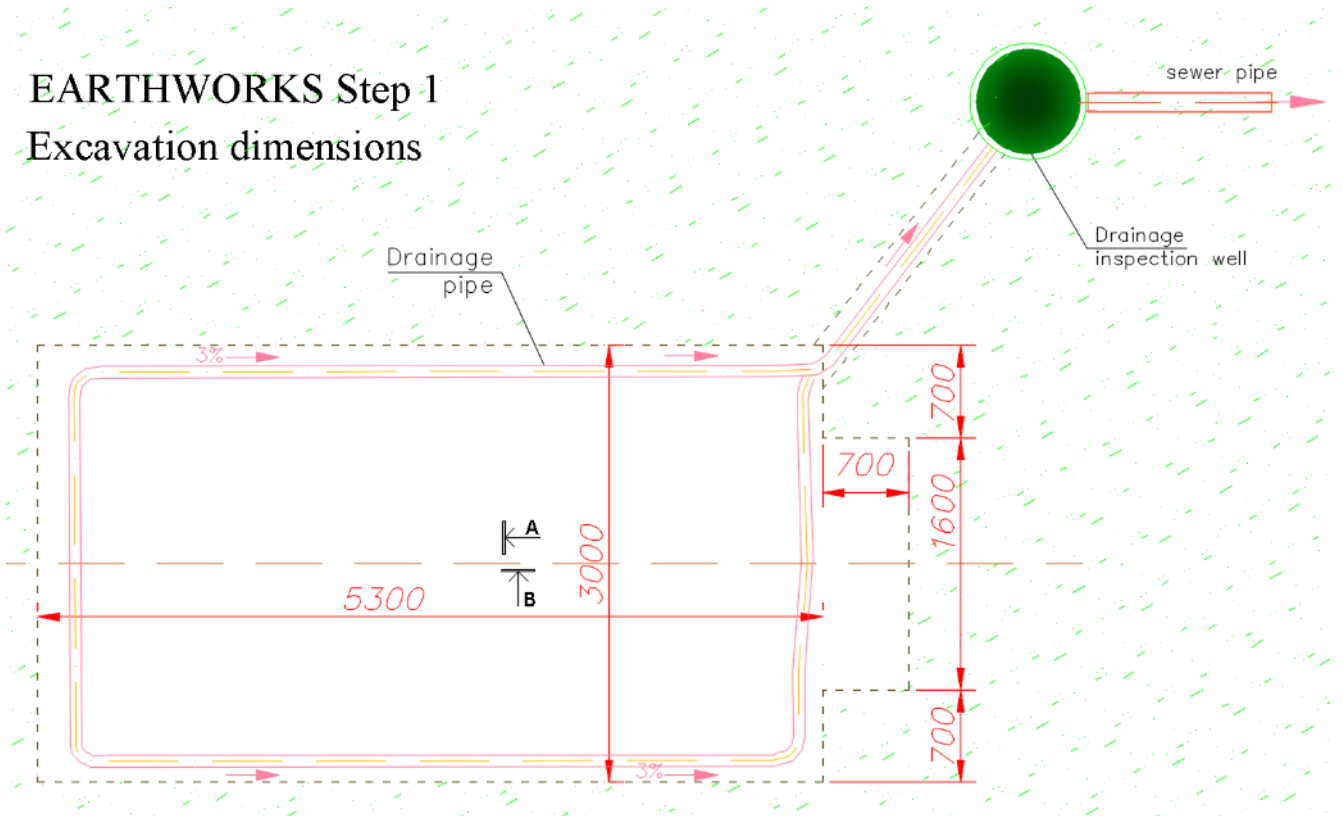


Fig. 5a The first phase of earthworks. Drainage installation

EARTHWORKS Step 1

Excavation dimensions

Section B-B

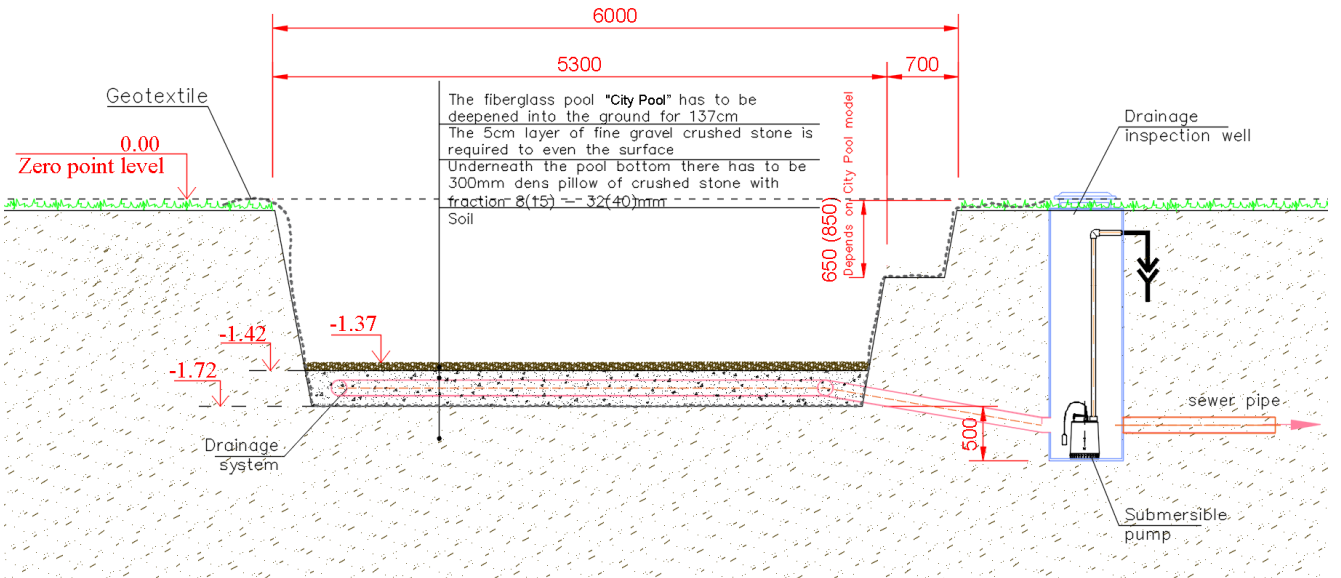


Fig. 5b The first phase of earthworks. Drainage installation

EARTHWORKS Step 1

Excavation dimensions

Section A-A

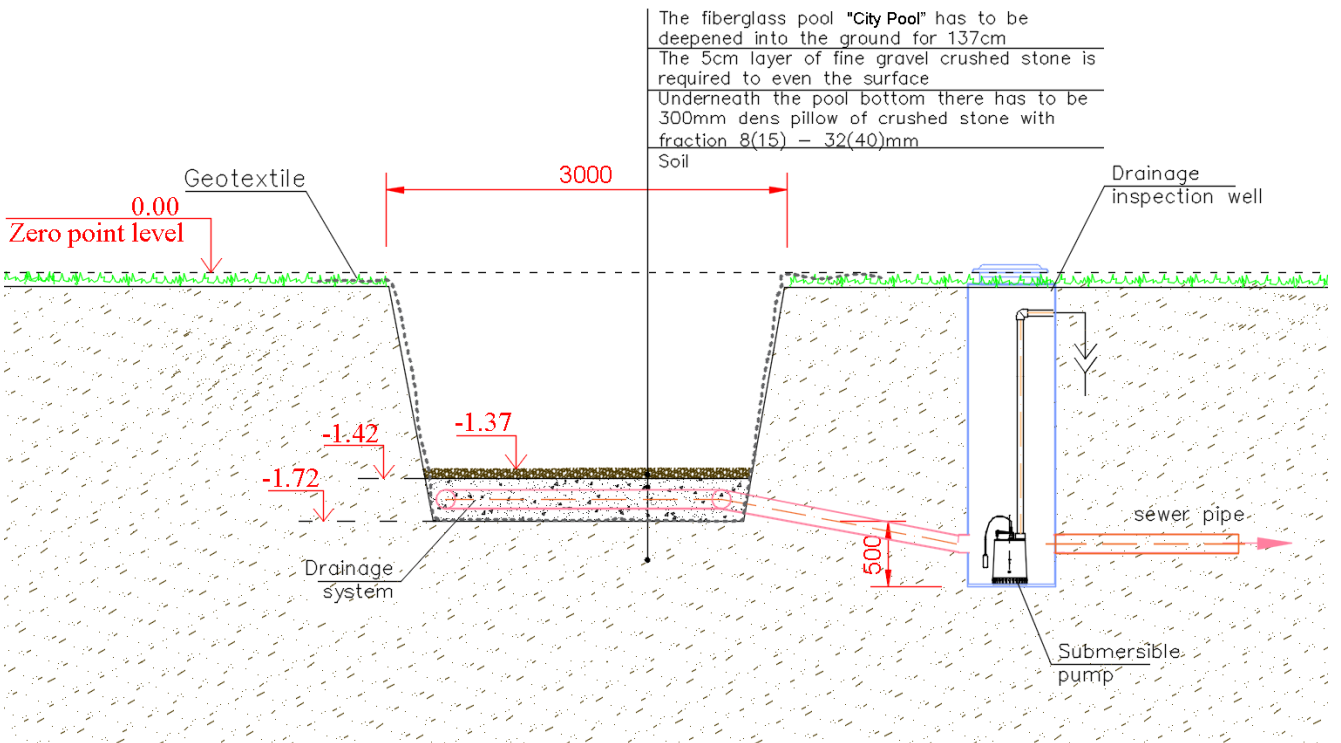


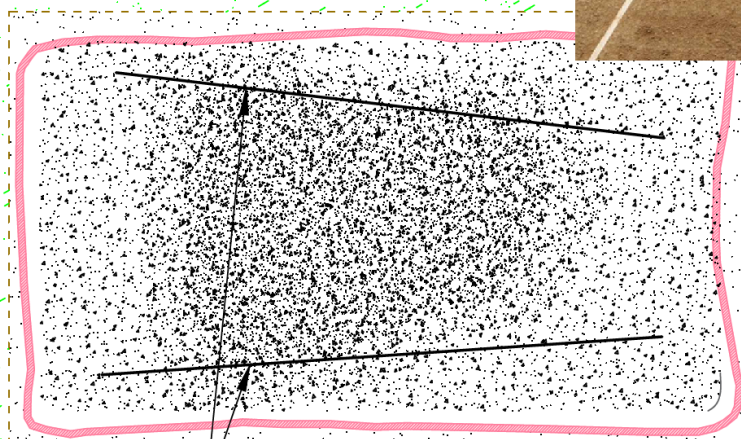
Fig. 5c The first phase of earthworks. Drainage installation

4. Soil preparation - Geotextiles - Installation of rulers

After excavation work, the desired depth must be checked for the specific pool dimensions

- Finish cleaning the earthwork manually with a shovel and rake, to remove the rest of loose soil as well as stones or elements that may interfere with the placement of geotextile, rulers and crushed gravel.
- Place the geotextile at the bottom of the excavated pit and put marks on the edges, and positioning rules- timber levelling strips; these marks will be used to check the position of the swimming pool after its fixation.
- Lay the geotextile on the walls to avoid absorption of the fill by natural soil (this is particularly recommended for soils heavily impregnated with water).
- Check the flatness of the rules by checking the desired height directly above each one.
- Put rulers in according to zero point position, and check the height by keeping optical reference point as zero point plus 1.37 m depth, as shown.
- Fill the crushed stone to the level indicated in Fig.5. An average rubble thickness of about 20 cm is recommended according to the dimensions given in this guide.
- Fill the sand according to the height of the ruler (Fig.6), then use a third ruler to sweep the sand over the entire surface of the pit.
- The sand is soft and needs to be compacted. If the sand is dry, moisten with watering. Compact with a hand blender. Add sand if necessary.
- Check levels, remove rules and correct the excavations.

EARTHWORKS Step 1 Leveling of the ground



Two wooden boards
for leveling the sand

Fig. 6 The first phase of earthworks. Leveling the bottom with rules

Attention!

Rubble can have different names in different regions and may vary in size, so we can only give you the average indicators, the size of the pieces to be an average: 8(10)-32(40)mm. Rubble used for base or for filling must be crushed out of the quarry; it is not allowed to use round or river rubble. Any swimming pool installation using other than crushed rubble from the quarry, will be regarded as inconsistent with this manual.

5. Swimming pool delivery and unload

The vehicle that will bring your "City Pool" to your job site requires sufficient access to the site and area to maneuver. Before starting the installation, review your equipment requirements to be sure they are correct for the particular pool installation. To unload pool is necessary to have straps with hooks and chains. The swimming pool will be lowered gently into the excavation using the marks previously drawn on the edges of the earthwork (bottom mark and median axis).



Fig. 7 City Pool unloading



Fig. 8 City Pool unloading

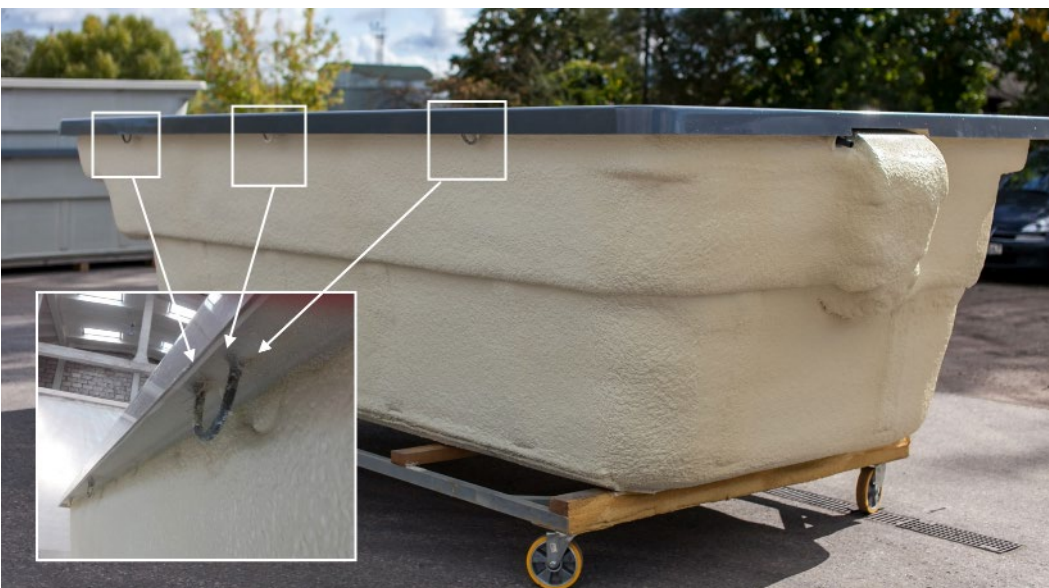


Fig. 9 Steel loops for pool lifting and unloading

6. Swimming pool equipping and levelling

Adjust swimming pool horizontality (Fig. 11) using laser or optical level and checking the position of the swimming pool in the defined points, layout and zero point (Alt. 0.00).

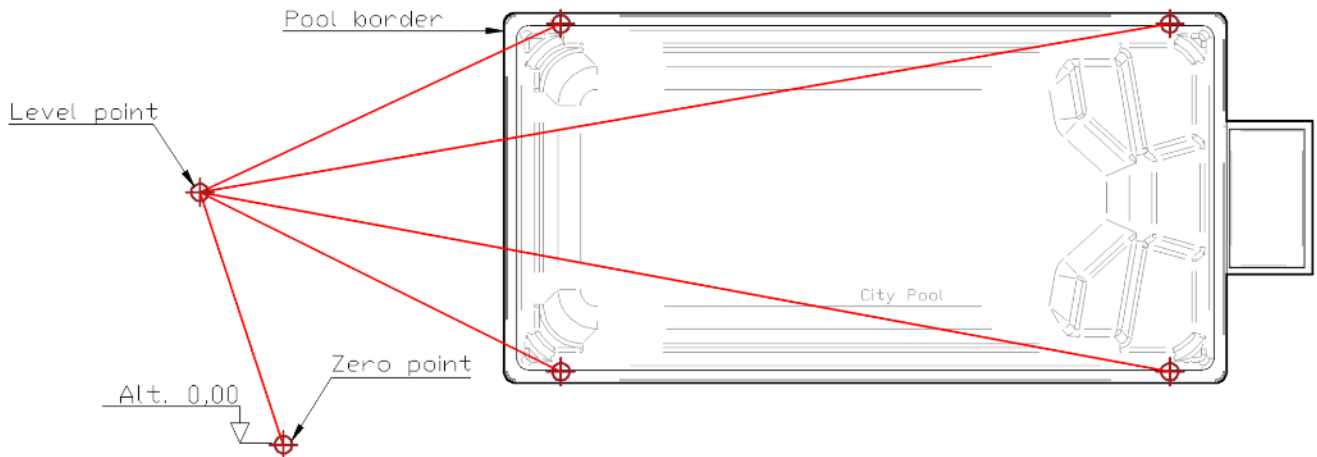


Fig. 12 The second phase of earthworks. Level setting.

Make sure that the bottom of swimming pool is in full contact with the ground with its entire surface; make sure that the pool does not deviate from the axes in the soil, which you established.

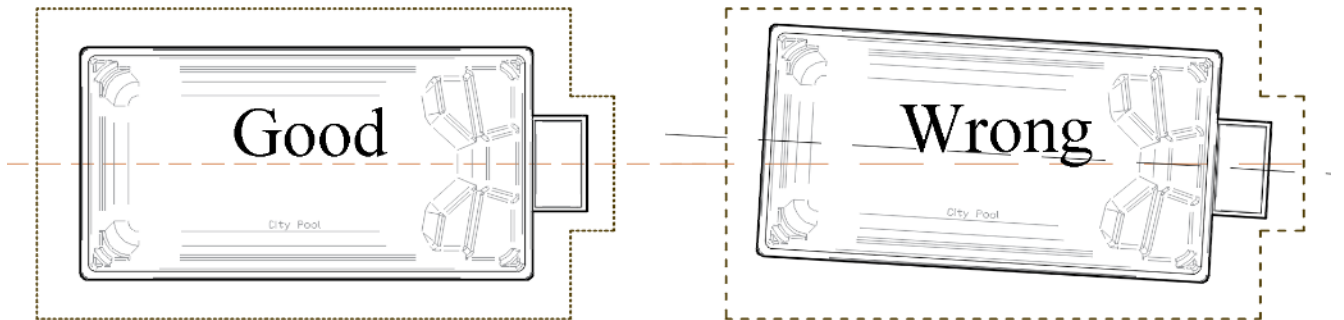


Fig. 13 Pool positioning by axis

If a difference in level appears, do not apply pressure and jump on the curb of the pool. The pool must be pulled out, the compacted sand must be checked and the positioning of the pool in the bottom of the excavation.

Attention!

Never lift the pool to ensure the levelling regarding the zero point. In fact, the bottom, if it does not rely on its entire surface, may ultimately result in the gelcoat layer cracks due to water pressure...

EARTHWORKS Step 2 Positioning the pool

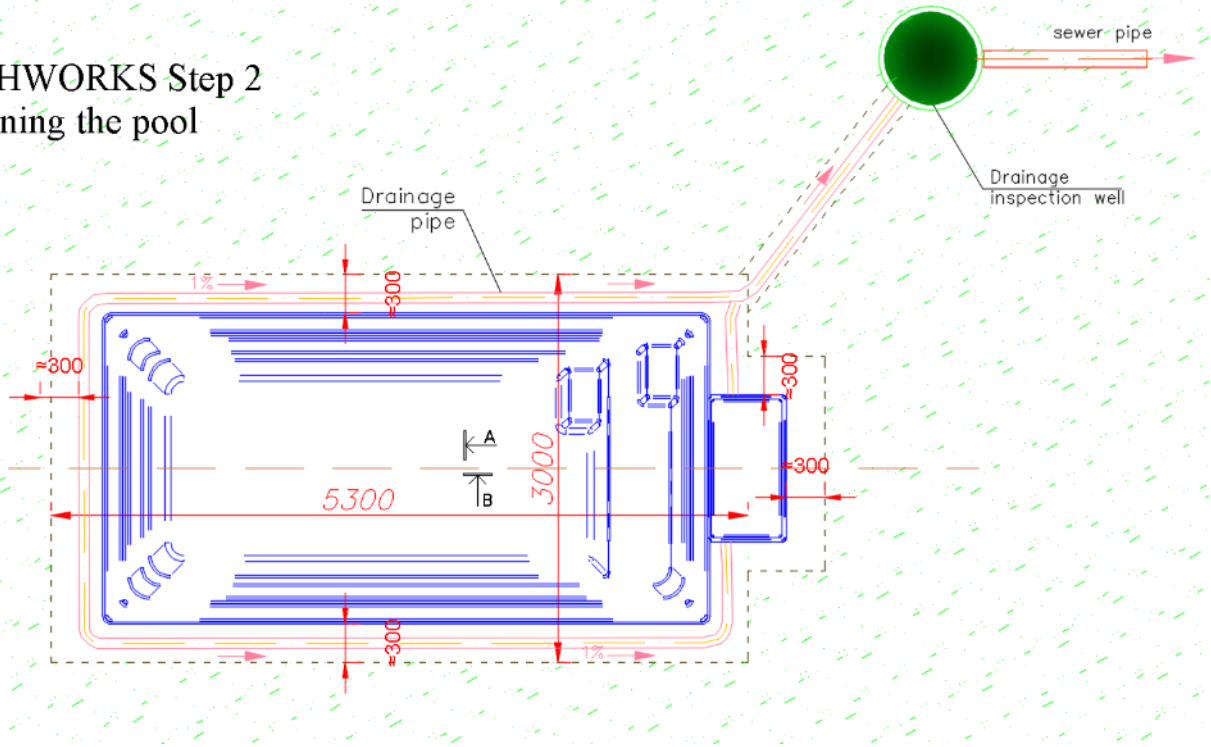


Fig. 14a The second phase of earthworks . Pool positioning

EARTHWORKS Step 2 Positioning the pool

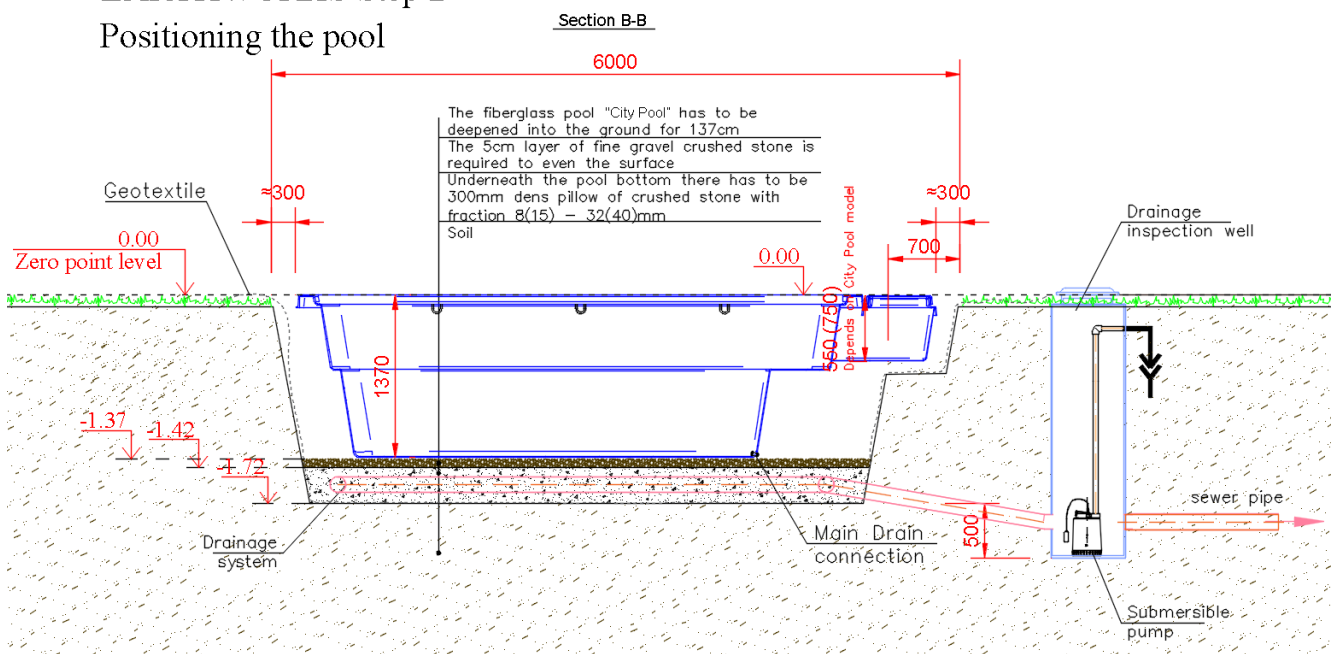


Fig. 14b The second phase of earthworks . Pool positioning

EARTHWORKS Step 2 Positioning the pool

Section A-A

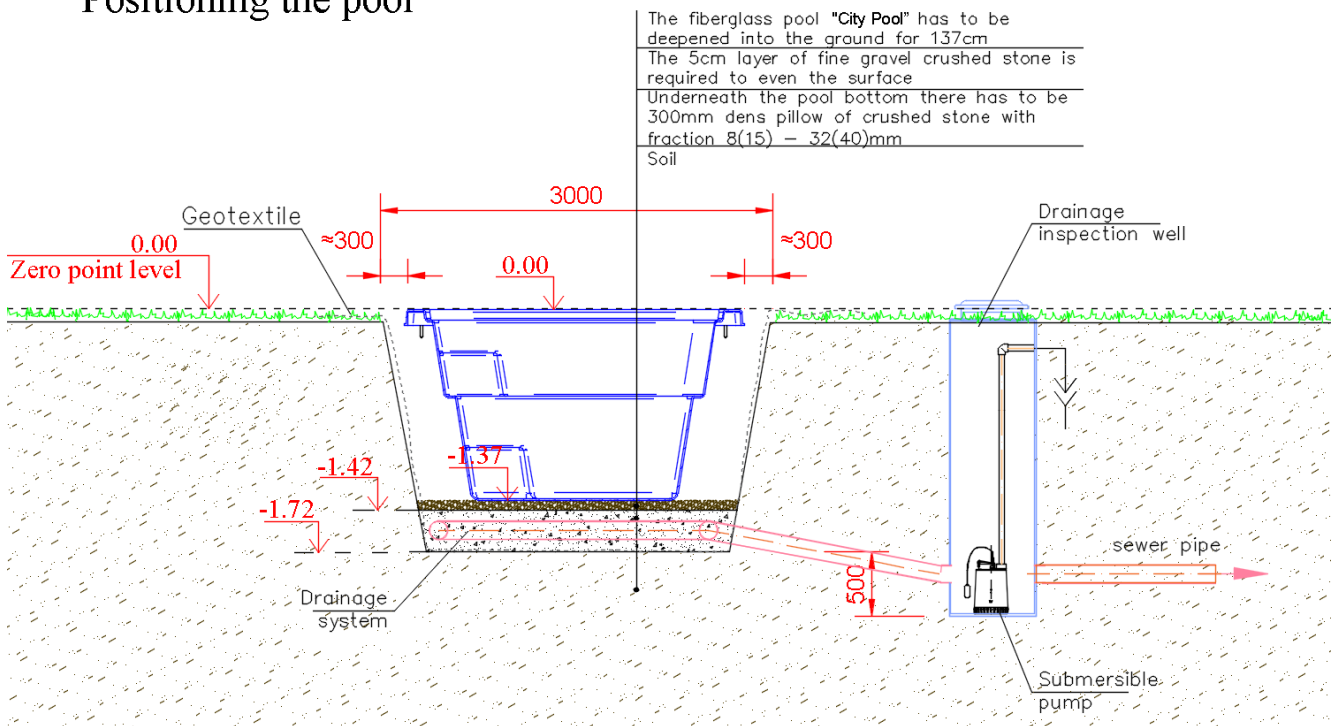
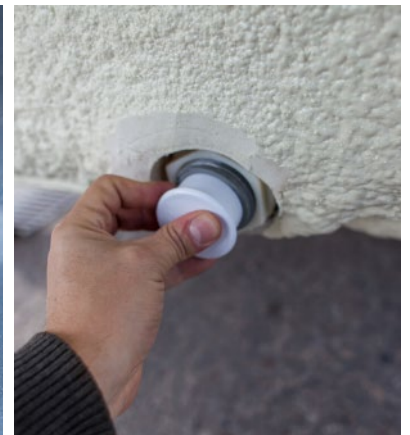


Fig. 14c The second phase of earthworks . Pool positioning

Main drain connection:

1. If it is possible to drain water from the pool, connect a pipe to the drain outlet and do it before loading the pool into the pit.
2. If not possible, glue the plug.
3. Also, you can connect to the water filling inlet in it, and then filling the pool and the addition will be easy for you to adjust with the valve installed in a convenient location.



Skimmer overflow outlet connection:

1. The skimmer is equipped with a high water level drain outlet.
2. On the back of the pool (next to the skimmer) you will find a PVC pipe d25 left for connection
3. Connect the pipe to drainage rainwater or, if not feasible, lower the pipe down to the drainage crush layer around the pool.



7. Walls filling, swimming pool and technical pump room fixing

Choose a non-compressible crushed stone (identical to that of the raft). Any other type of backfill is strictly prohibited, and will result in non-compliance with this installation manual.

7.1 Workflow of the pool filling with rubble

1. To avoid rubble pressure and body deformation when filling with earth, it is necessary to install 3 supports along the width of the pool at intervals of approximately at the loop outer side of the curb, Fig. 15. Also fasten with straps by hooking them to the loops on the outer side of curb. Struts remain in place until the basin is completely filled.

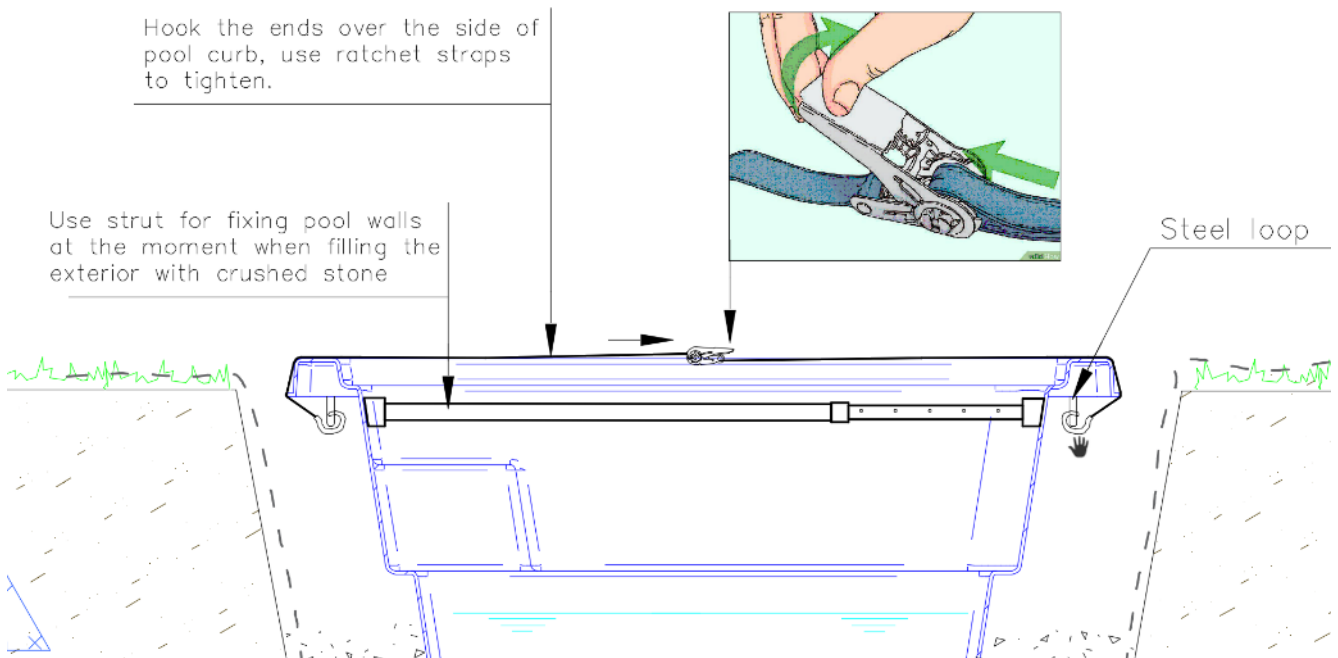


Fig. 15 Pool fixing with supports and straps

2. Once the pool is anchored, add 20 cm of water and once again check that the pool level is in correct position. Fill the pool 20cm of water to stabilize it.
3. Pour the rubble to the corners (see 7.2)
4. Start filling the water in to the pool, and pour the rubble at the same time. Normally the level of crushed stone should not be lower than the water level. It is necessary to ensure that the pool walls are free of any external or internal pressure and that the pool wall remains horizontal. (see 7.3)
5. When the pool is filled, one central strap must left which connects the two long sides of the pool, and the anchors may be removed.
6. Build a concrete fence.
5. Once the concrete has solidified, the belt connecting the pool walls should be removed.

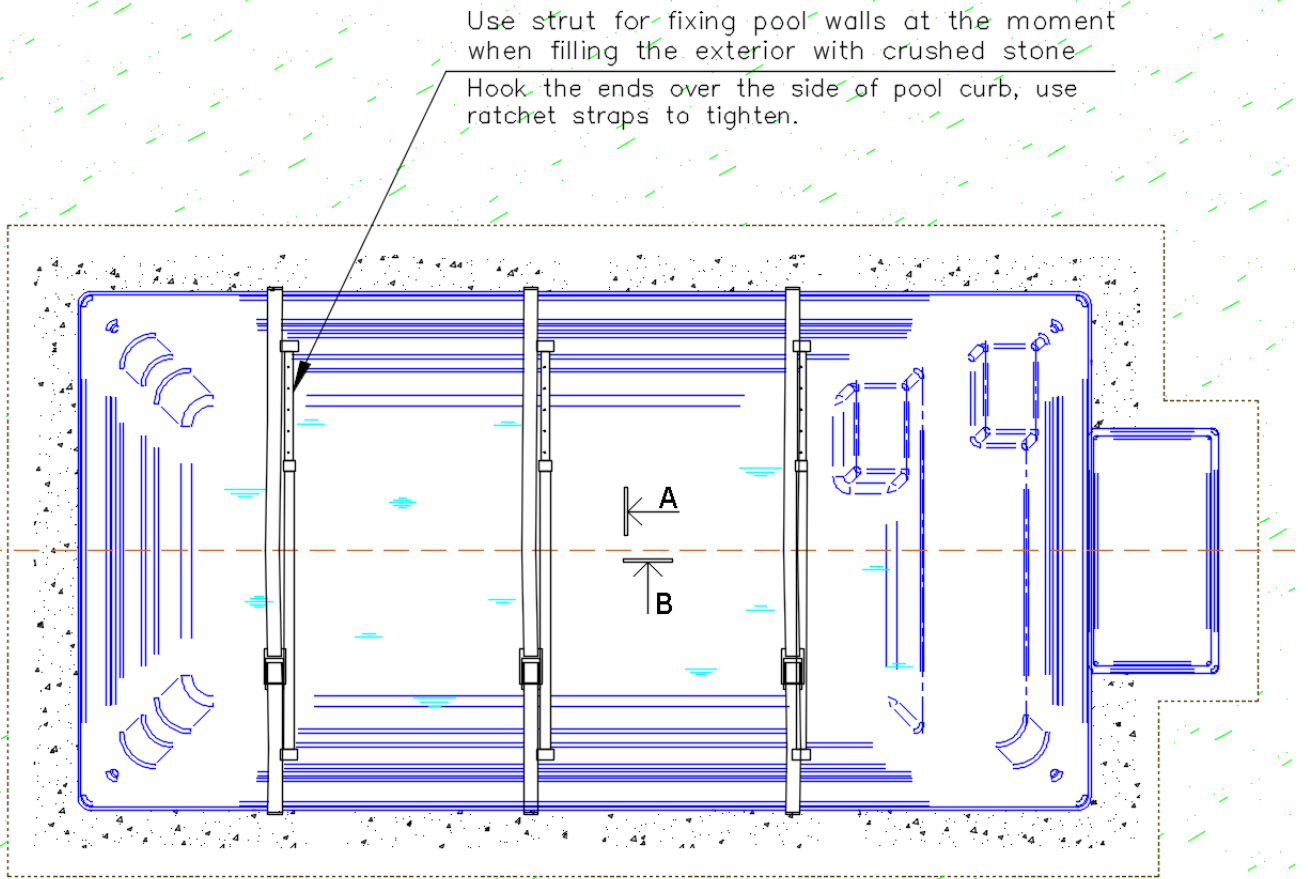


Fig. 16 Pool fixing with supports and straps

EARTHWORKS Step 3 Filling and backfilling

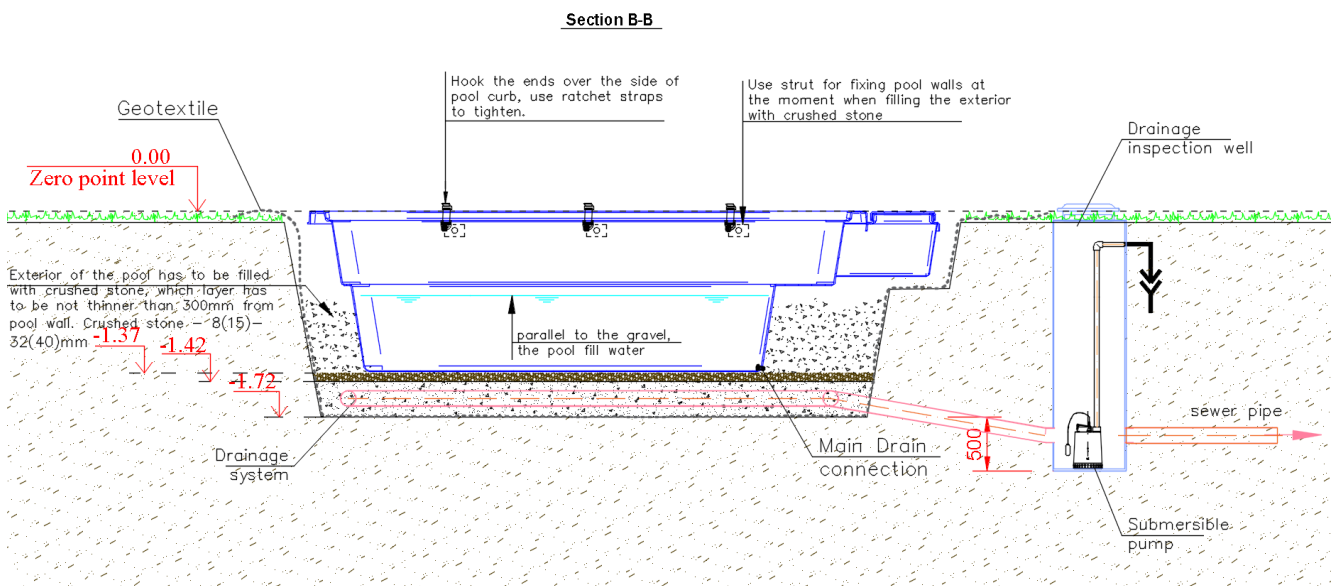


Fig. 17 Pool filling with rubble

EARTHWORKS Step 3

Filling and backfilling

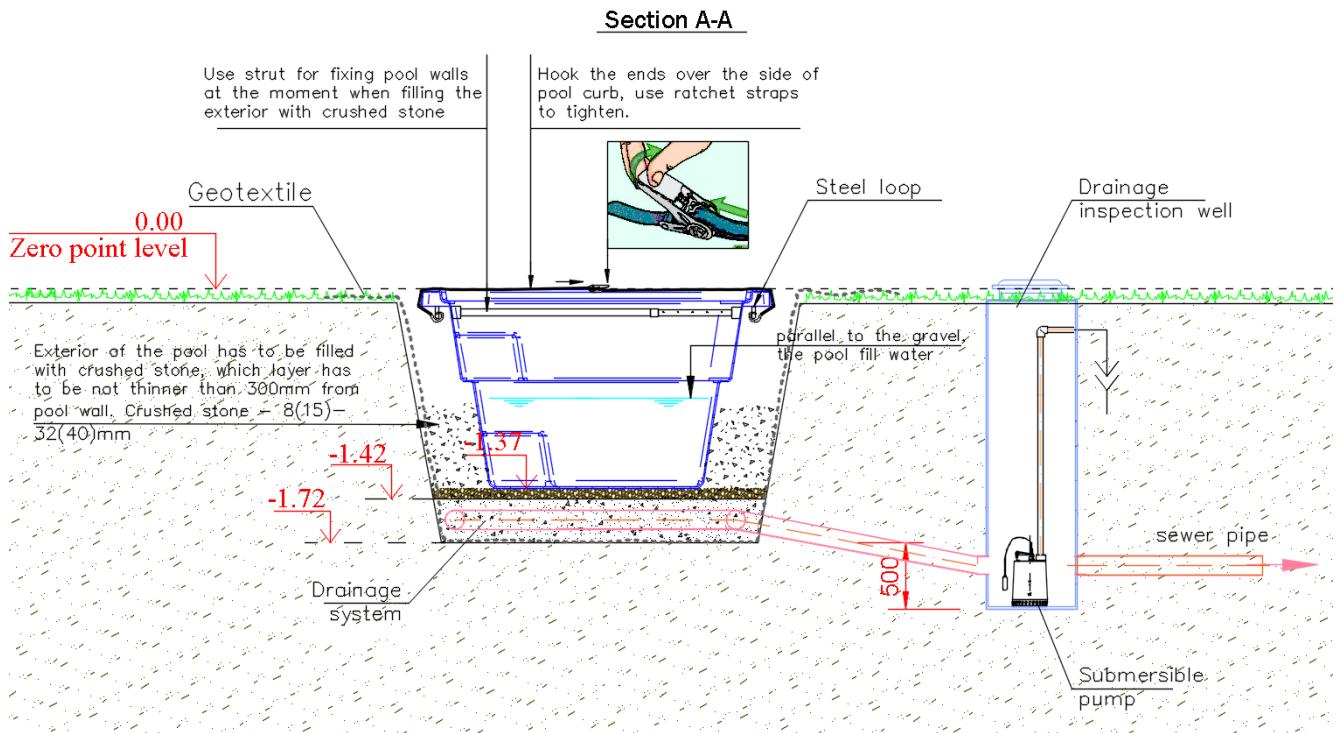


Fig. 18 Pool filling with rubble

7.2 Corners filling

Filling starts with 4 corners consolidation.

Gently pour the rubble to the corners in the diagonal contraposition (not moving the pool from the base) by filling 1/3 of the height.

In order to preserve the stability of the structure, it is recommended to use of light machinery for filling process (mini loader type).

Check level and readjust swimming pool leveling.

- To lower an angle, do not tap your or jump on the lip of the pool, Raise the pool, fix the base, and put it back in again.
Raise the pool, fix the base, and lower the pool again.
- To raise the corner, use wooden rafters as a lever to lower the rubble. (Fig. 19)



Fig. 19 Pool raising with lever

7.3 Filling with earth halfway

Start backfilling and tamp down lightly with a sleeve or a hollow metal tube 1 cm in diameter and 2 meters long. Your fill is packed when the gravel no longer descends when you hit it with the handle or the tube.



Fig. 20 Tamping a rubble

The purpose of this operation is to permanently fix the pool on the ground and to avoid the risk of displacement. This stability will be ensured by a homogeneous backfill free of soil or other materials.

Continue the backfilling operation, taking care to maintain an identical backfill height (increase the backfill height in steps of 30 cm by turning around the hull).

The water must not exceed the level of crushed stone. The wall of the pool must not be enclosed either exterior or interior.

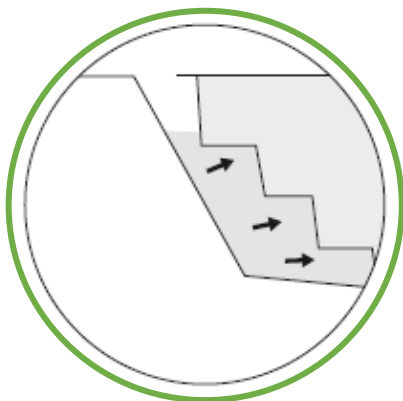
Constantly compact filling earths with grip or tube until earth level is 20 cm below the lower edge of the curb of the pool.

ATTENTION:

Never use a vibrating machine when compacting filling earth.

7.3 Pump room filling

- Make sure that the gravel has passed under the cabinet of the pump room.
- Replace and compact gravel as much as necessary under the steps.
- Check the level of the pump room according to the pool.
- If there is a slight difference in level, lift the room with a plank.



ATTENTION:

Do not leave the swimming pool without being fully backfilled and empty without checking the external underground water (risk of pushing and destabilizing the pool).

Fig. 21 Filling under steps and pump room.

9. Concrete protective fencing

Once the backfilling is completed 20cm below the edge of the pool lip, make a concrete fencing 20cm high and 25cm wide edge beam. Concrete fencing installation you can perform using the formwork, spatula and vibrating tip that ensures the integrity of the concrete on all sides.

A minimum of 1.0m³ of ready-mixed concrete will be required (Class C25/30 (M350)). Concrete can be made locally with a concrete mixer:

C: 365kg cement (M400)

S: 550kg of sand (fraction 1,3-3,5mm)

G: 1100kg of gravel (granite crushed stone fraction 5-20mm)

W: 160-170ltr of water

Ratio (C: S: G) - 1: 1.5: 3

Water/Cement ratio W/S 0.45

Reinforcement as in the example below is also required:



Fig. 22 Concrete fencing

IMPORTANT. It is necessary to join the edge beam reinforcement bars to the pool steel loops (outer side of the curb) by wire or reinforcement.

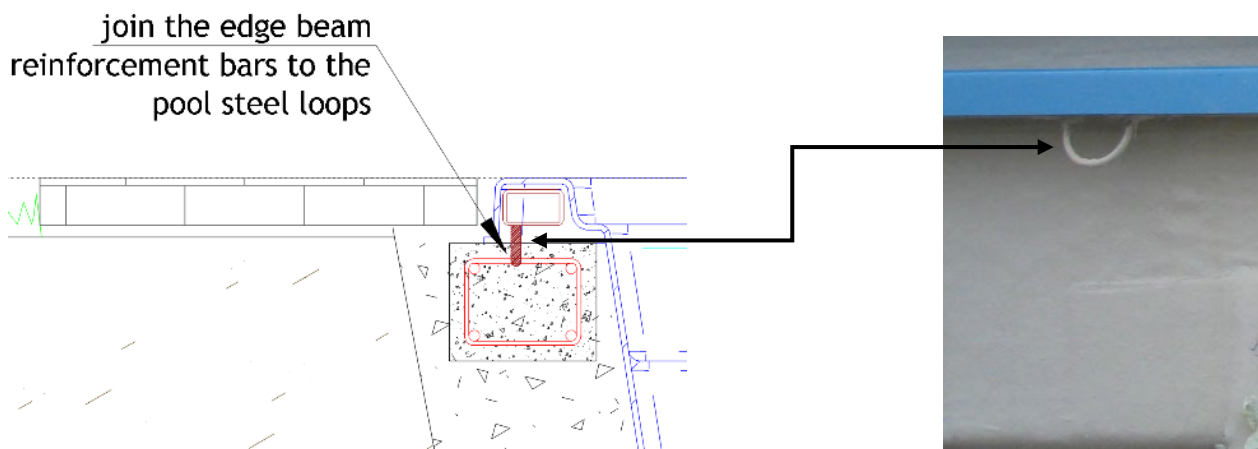


Fig. 23 Pool loop joining to edge beam

EARTHWORKS Step 4

Pouring the deck around the inground swimming pool

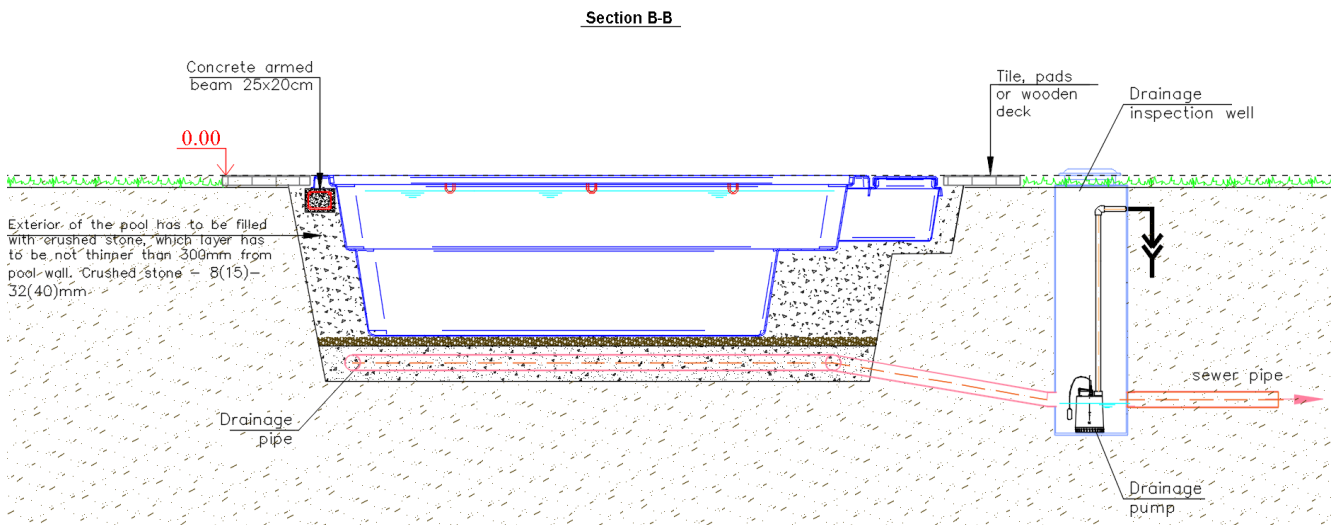


Fig. 24 Pool fixing

EARTHWORKS Step 4

Pouring the deck around the inground swimming pool

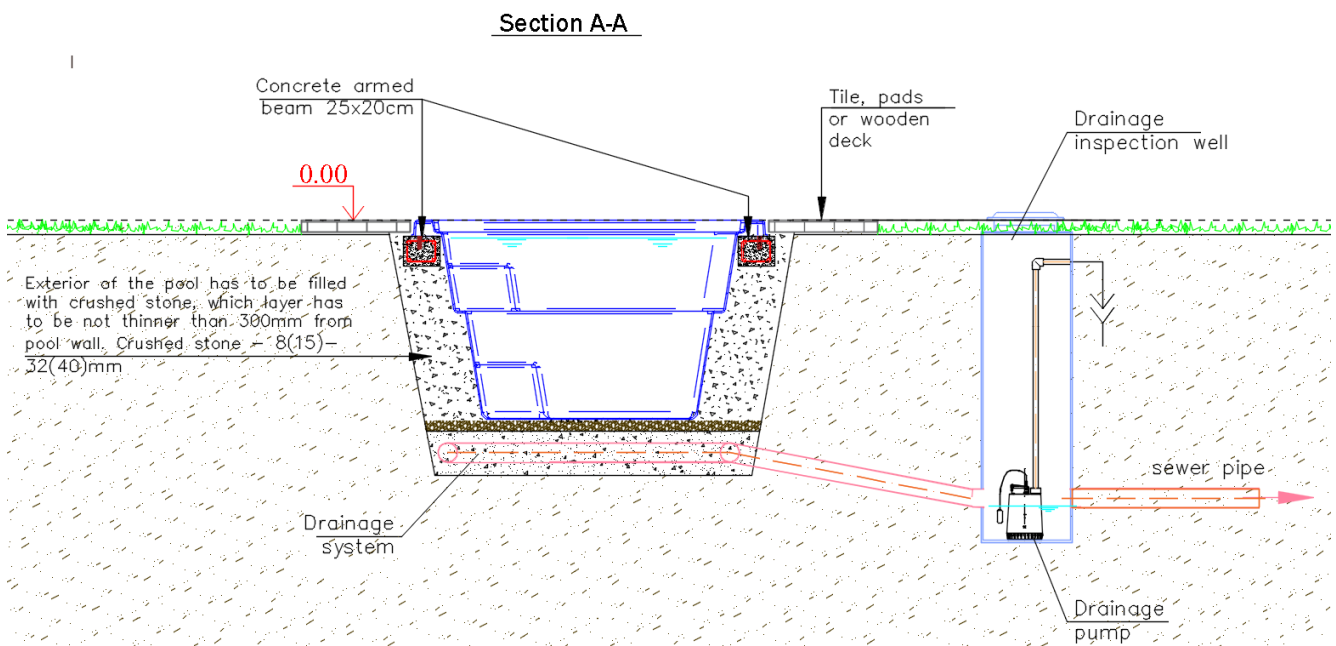


Fig. 25 Pool fixing

When building a paved terrace, install an expansion joint between the pool edge beam and the support slab.

Attention!

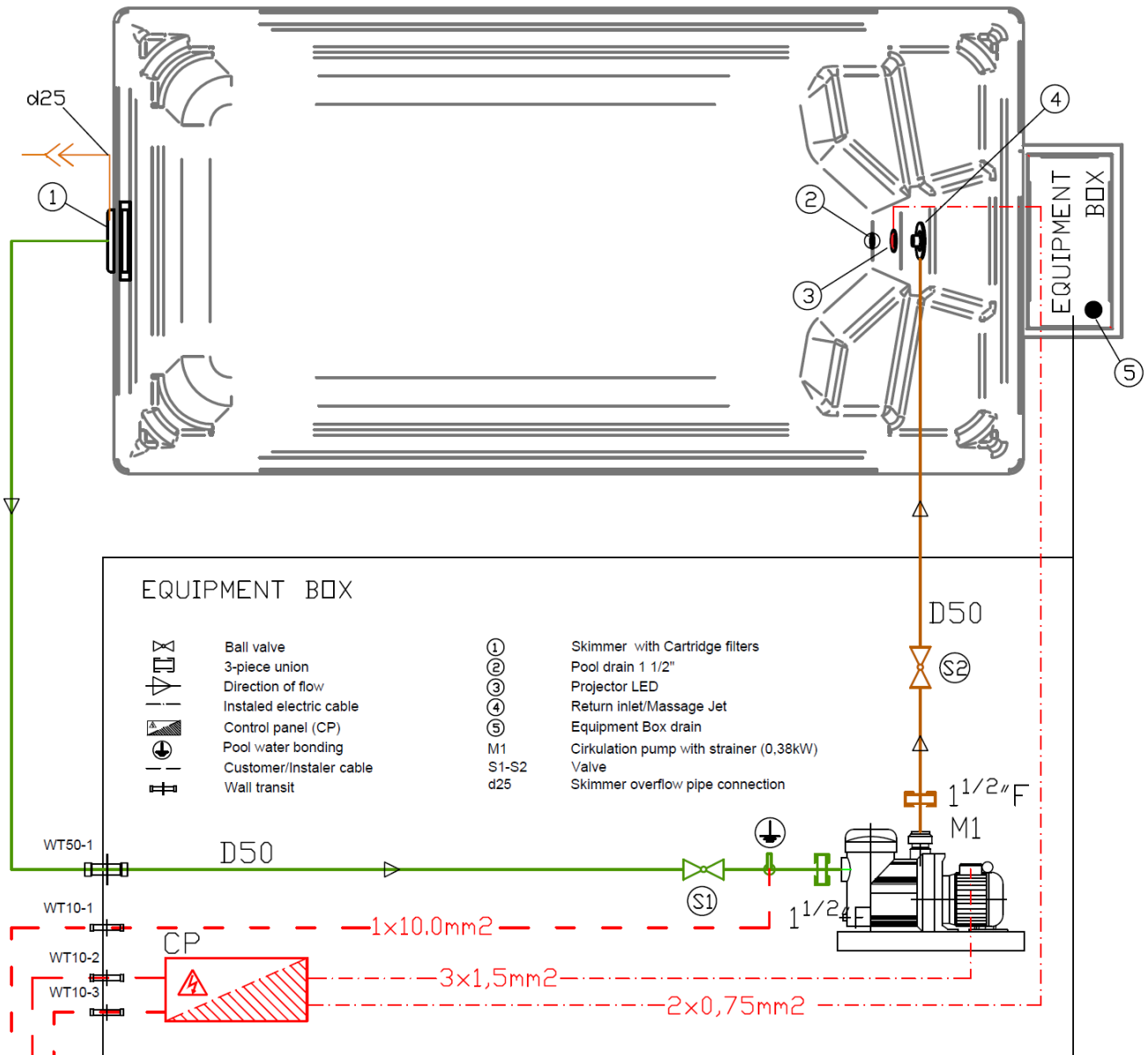
Constantly monitor that the point "0" is above the natural soil level around the pool. Also, drain rainwater to prevent the pool from overflowing with water and splashing over the edges.

CONNECTION OF TECHNOLOGICAL POOL EQUIPMENT

11. Pool equipment

11.1 BASIC modification

CITY POOL I connection scheme
BASIC



- | Power cable, II class, 2x1,5mm², 230V+N+PE, 50Hz, 1kW
- | LED light control cable, II class, 2x1,5mm² (OPTIONAL)
- | Grounding cable, I or II class, 1x4mm²

CITY POOL II connection scheme
BASIC

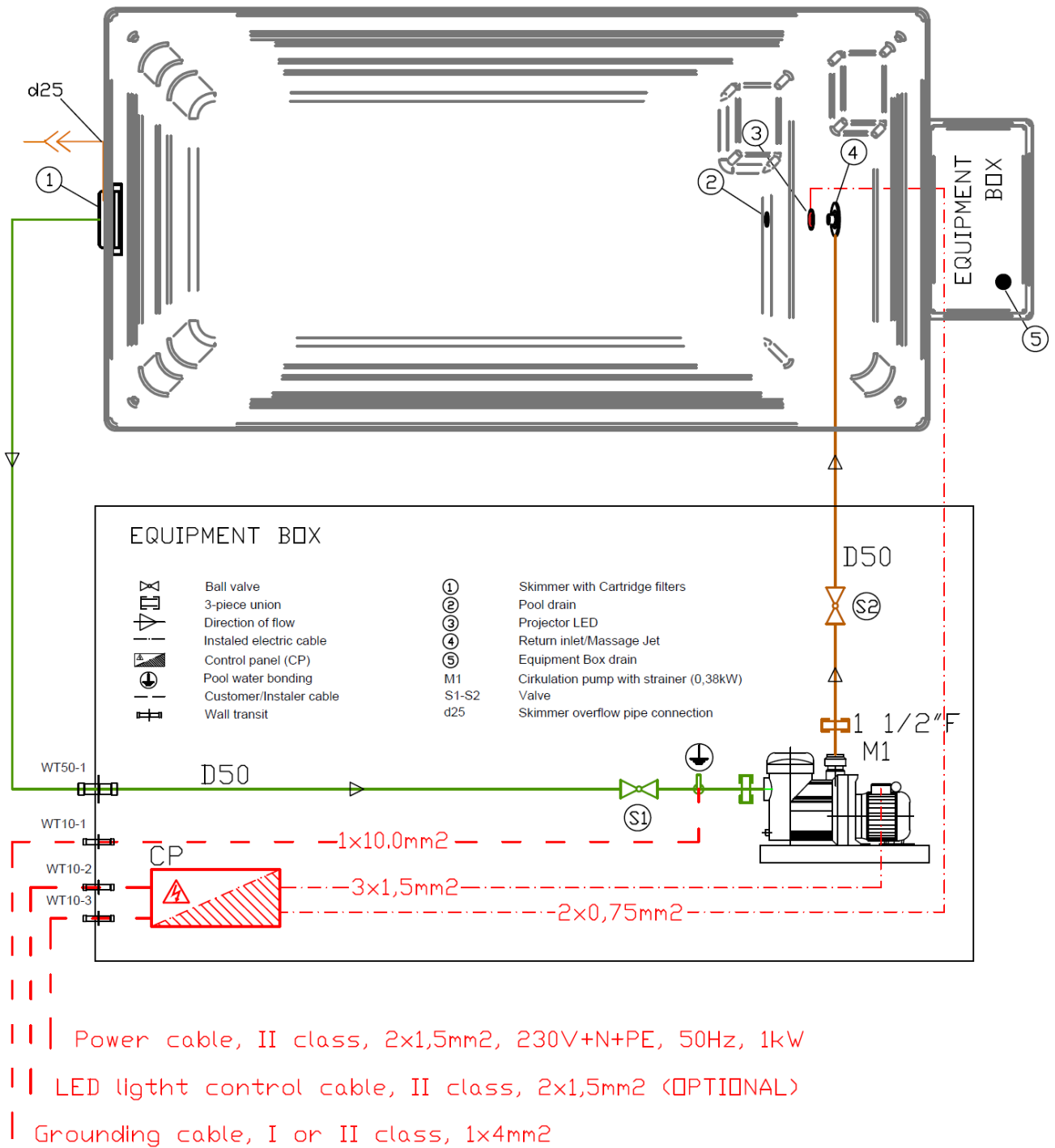


Fig. 26 “City Pool Basic“ schematic diagram

CITY POOL BASIC equipment

- 1) Skimmer ABS with 2 cartridge filters PWW50P3 (1)
- 2) Pool Main drain at the bottom with plug and grille ABS (2)
- 3) LED light with stainless steel cover (3)
- 4) Inlet Jet with stainless steel cover (4)
- 5) Pump room drain for condensate drainage ABS with plug and grille (5)
- 6) Hayward Powerline P-0,38kW Q-5,4m³/h (8m) centrifugal pump with pre-filter (M1)
- 7) Electrical Control Panel single-phase with bluetooth and transformer (50W) (CP)
- 8) Piping with valves (ball valves) (S1, S2)

①



②



③



④



⑤



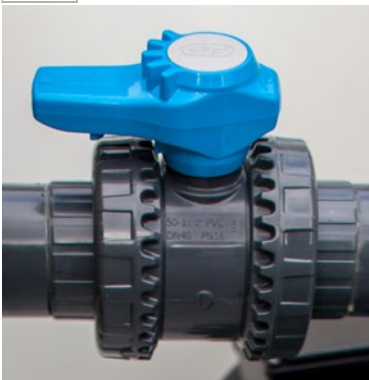
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⑦

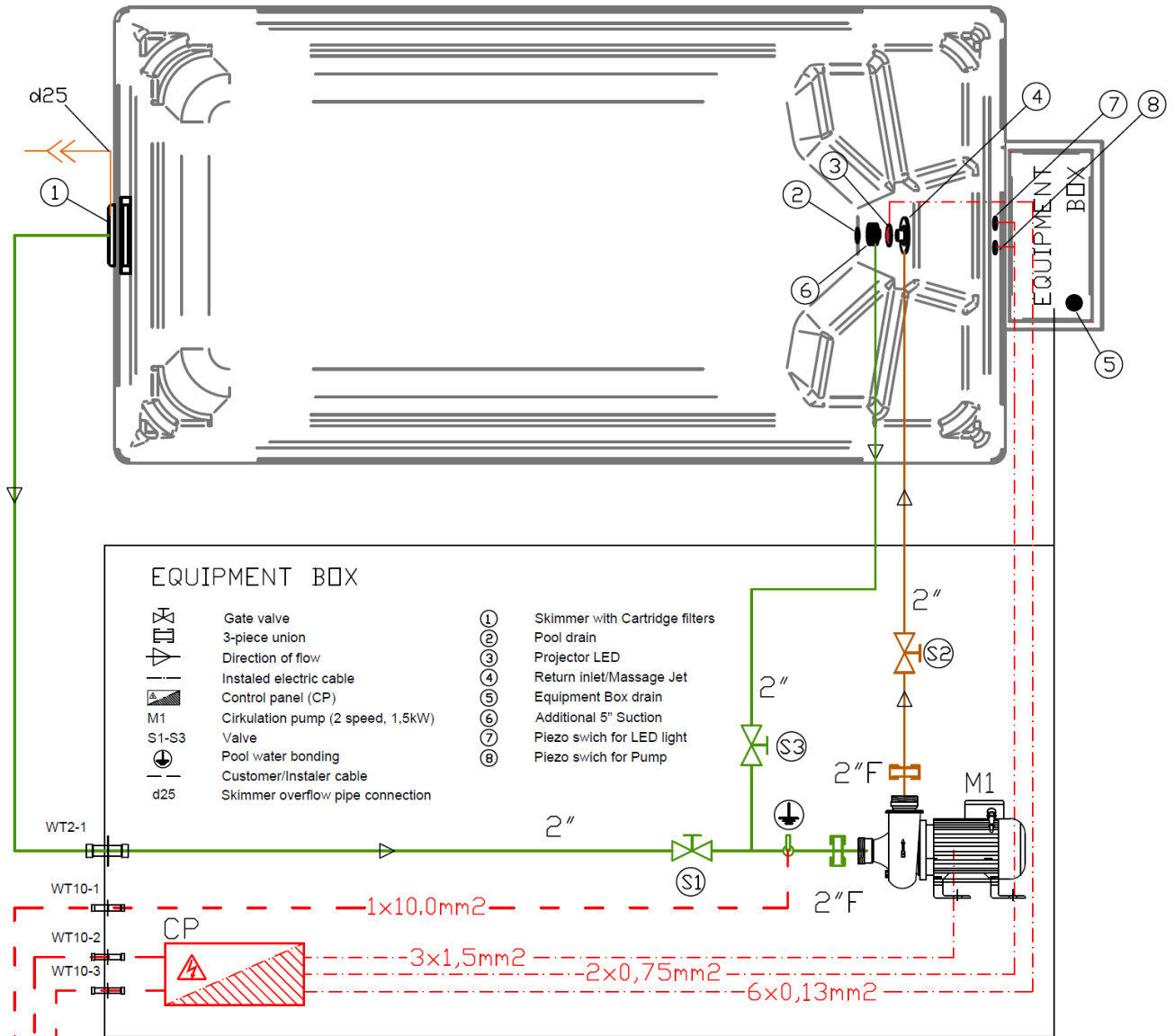


⑧



11.2 ACTIVE modification

CITY POOL I connection scheme
ACTIVE



! Power cable, II class, $2 \times 2,5 \text{mm}^2$, 230V+N+PE, 50Hz, 1kW

! LED light control cable, II class, $2 \times 1,5 \text{mm}^2$ (OPTIONAL)

! Grounding cable, I or II class, $1 \times 4 \text{mm}^2$

CITY POOL II connection scheme
ACTIVE

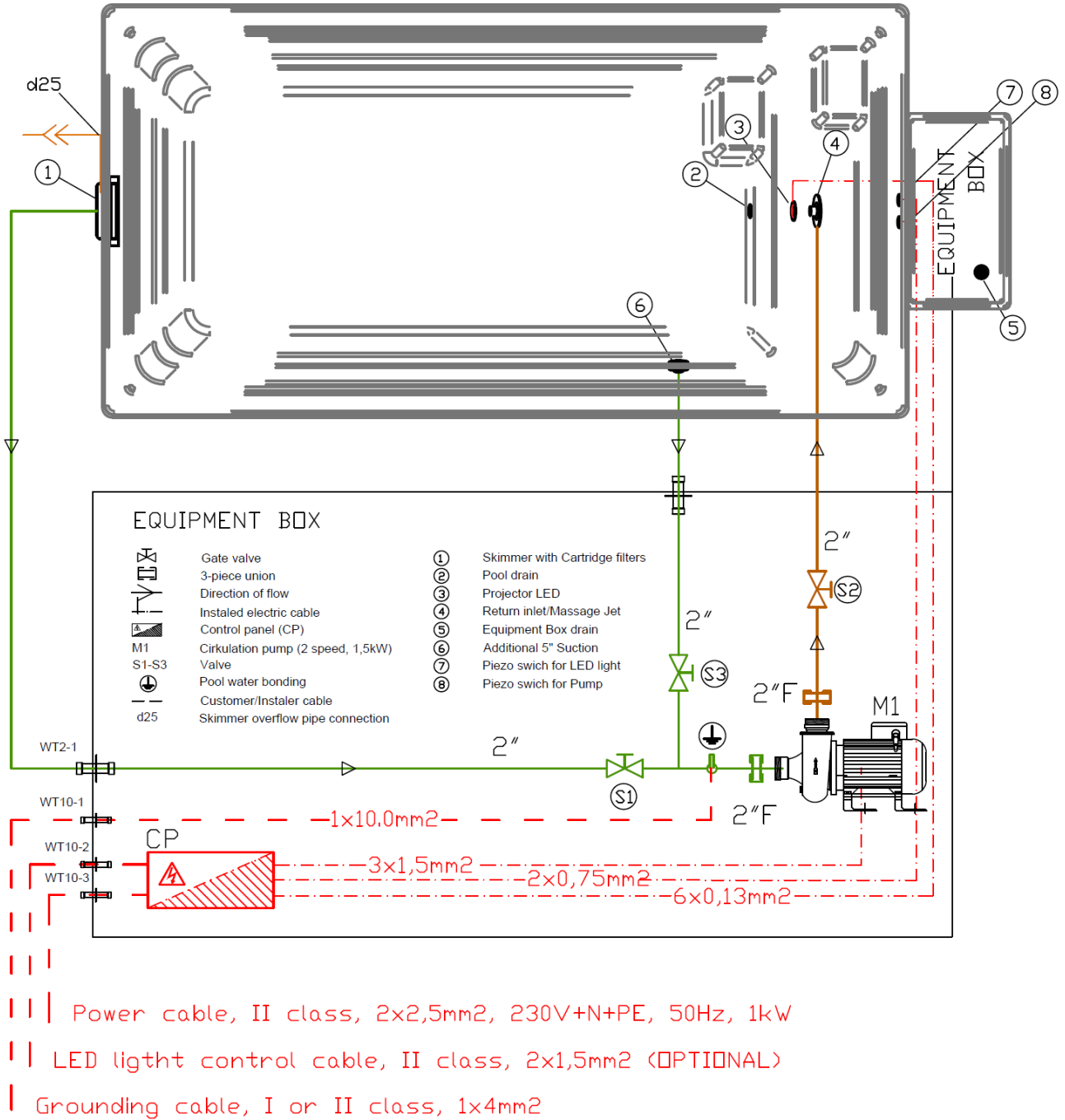
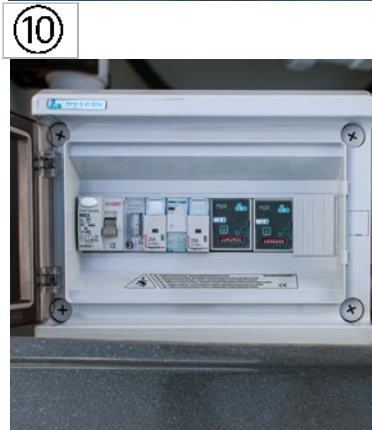


Fig. 27 "City Pool Active" schematic diagram

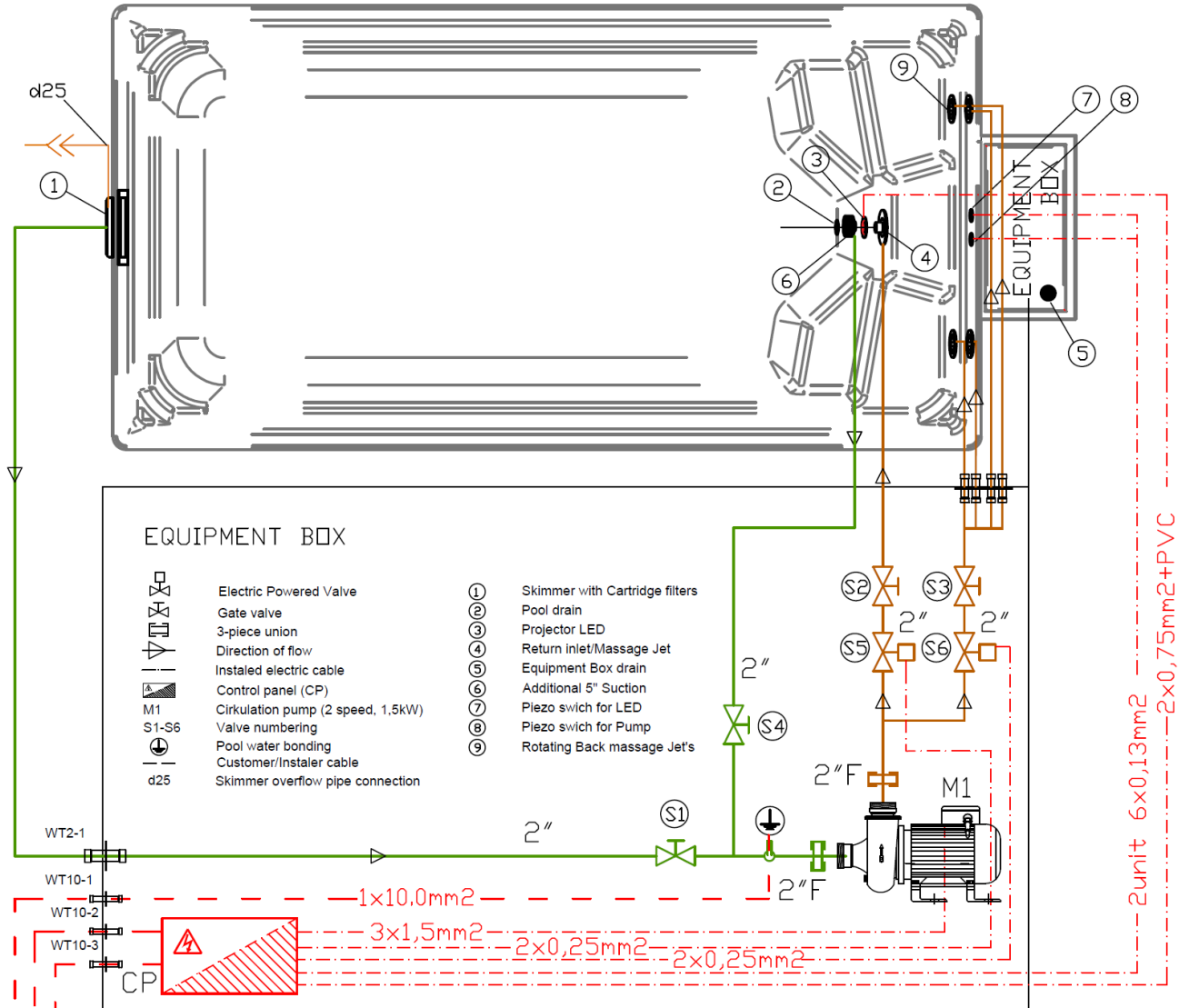
CITY POOL ACTIVE EQUIPMENT

- 1) Skimmer ABS with 2 cartridge filters PWW50P3 (1)
- 2) Pool Main drain at the bottom with plug and grille ABS (2)
- 3) LED light with stainless steel cover (3)
- 4) Swim Jet, adjustable counterswim jet with with stainless steel cover (4)
- 5) Pump room drain for condensate drainage ABS with plug and grille (5)
- 6) Waterway suction (6)
- 7) Piezo switch for LED light (7)
- 8) Piezo switch for massage control (8)
- 9) Two speed centrifugal pump P-0.43-2,38kW, 230V Q_{max} -45m³/h (M1)
- 10) Electrical Control Panel single-phase 40A , 230V (CP)
- 11) Piping with valves (slice valves) (S1, S2, S3)



11.3 FUN modification

CITY POOL I connection scheme
FUN



- | Power cable, II class, 2x2,5mm², 230V+N+PE, 50Hz, 1kW
- | LED light control cable, II class, 2x1,5mm² (OPTIONAL)
- | Grounding cable, I or II class, 1x4mm²

CITY POOL II connection scheme
FUN

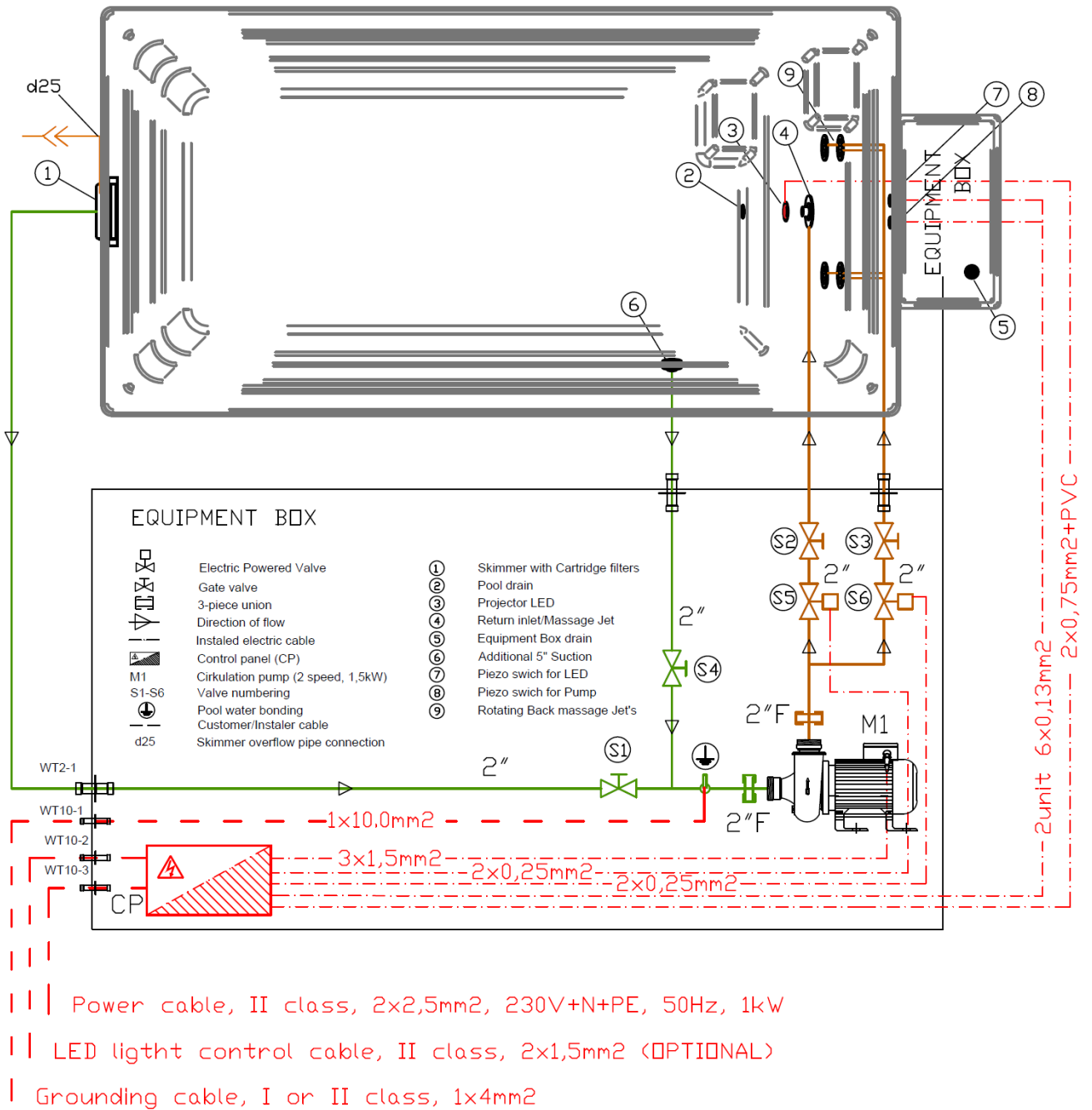
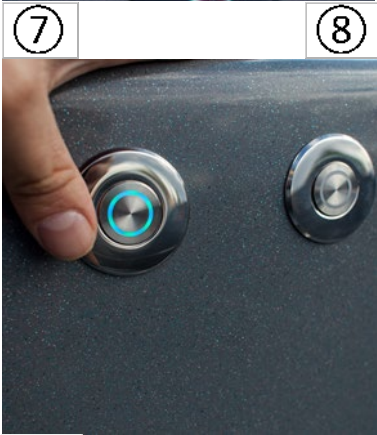


Fig. 28 "City Pool Fun" schematic diagram

CITY POOL FUN EQUIPMENT

- 1) Skimmer ABS with 2 cartridge filters PWW50P3 (1)
- 2) Pool Main drain at the bottom with plug and grille ABS (2)
- 3) LED light with stainless steel cover (3)
- 4) Waterway Swim Jet, adjustable counterswim Jet with with stainless steel cover (4)
- 5) Pump room drain for condensate drainage ABS with plug and grille (5)
- 6) Waterway suction (6)
- 7) Piezo switch for LED light (7)
- 8) Piezo switch for massage control (8)

- 9) Twin Roto Jet with stainless steel facing (9)
- 10) Two speed centrifugal pump P-0.43-2,38kW, 230V $Q_{max}=45m^3/h$ (M1)
- 11) Electrical Control Panel single-phase 40A , 230V (CP)
- 12) Pipening with valves (slice valve, adjustable valve) (S1, S2, S3, S4)
- 13) Motorized valves 24V for flow directions control (S5, S6)



HOW TO SET A THERMOSTAT:



Index Light	Name
	Temp Setting
	Refrigeration
	Heat
	Alarm

Pool heating function:

- temperature display
- temperature control
- temperature sensor error alarm.

Setting the temperature: Press the key “set” for at least 2 seconds, then enter the state of temperature setting, here the LED displays the setting temperature, then using key or key can change the parameter (the key adds 0.1°C, the key minuses 0.1°C, press and hold it over 0.5 seconds can add or minus rapidly. After setting, press “set” again, then exit the state of parameter setting. (The setting temp range is limited by the parameters F13 and F14, please refer to the advanced operation). Pressing the key “M” in the setting process means cancel and exit, but the setting value will not be saved.

Advanced Operation: Press the key “M” and hold it for 5 seconds, and if you have set the password, the LED display the “PAS” to hint you to enter the password, you can use the key and to enter the password, if the password is correct, the LED will display the parameter code, use “” or to select the parameter code, Pressing the “set” key can make it to show the value of the parameter after select the parameter, here you use or to set the parameter (pressing the key and not release can add or minus rapidly), then press the “set” key to return to the state of showing parameter code after finishing setting. Pressing the key “M” can exit the parameter setting state when display the parameter code, pressing the key “M” means cancel when in the process of setting parameter, and the parameter will not be changed. Internal parameter code is showing below:

Sort	Code	Parameter Name	Range	Factory setting	Unit	Remark
Temperature	F11	Setting temperature	F14 – F13	0	°C/°F	The setting range is limited by F13 and F14
	F12	Temperature difference	0.1 – 20	1.0	°C/°F	Control the temperature difference, please refer to the temperature controlling
	F13	Max setting temperature	-58 - 302	302	°C/°F	Notice: the controller will follow the rule of F14<F11<F13 forcibly, if you find out that one parameter can not be adjusted, it is because the parameter is limited by other parameters, you must first adjust other parameters
	F14	Min setting temperature	-58 – 302	-58	°C/°F	
		F19	Temp sensor adjustment	-20 – 20	0.0	°C/°F
Compressor	F21	Compressor delay time	0 -- 10	3	min	
	F29	Compressor controlling mode (temp controlling mode)	COOL / HEAT	COOL	-	COOL: refrigeration mode HEAT: Heat mode
Alarm	F50	External alarm mode	0 -- 4	0	-	0: without external alarm 1: always open, unlocked 2: always open, locked 3: always closed, unlocked 4: always closed, locked
System setting	F80	Password	OFF 0001 -- 9999	OFF	-	OFF means no password 0000 means clearing password
	F81	Temperature unit	C/F	C	-	C: Centigrade F: Fahrenheit
Testing	F98	Reserved				
	F99	Test self				This function can attract all relays in turn, and please don't use it when the controller is running!
	End	Exit				

OPTIONAL HEAT PUMP CONNECTION

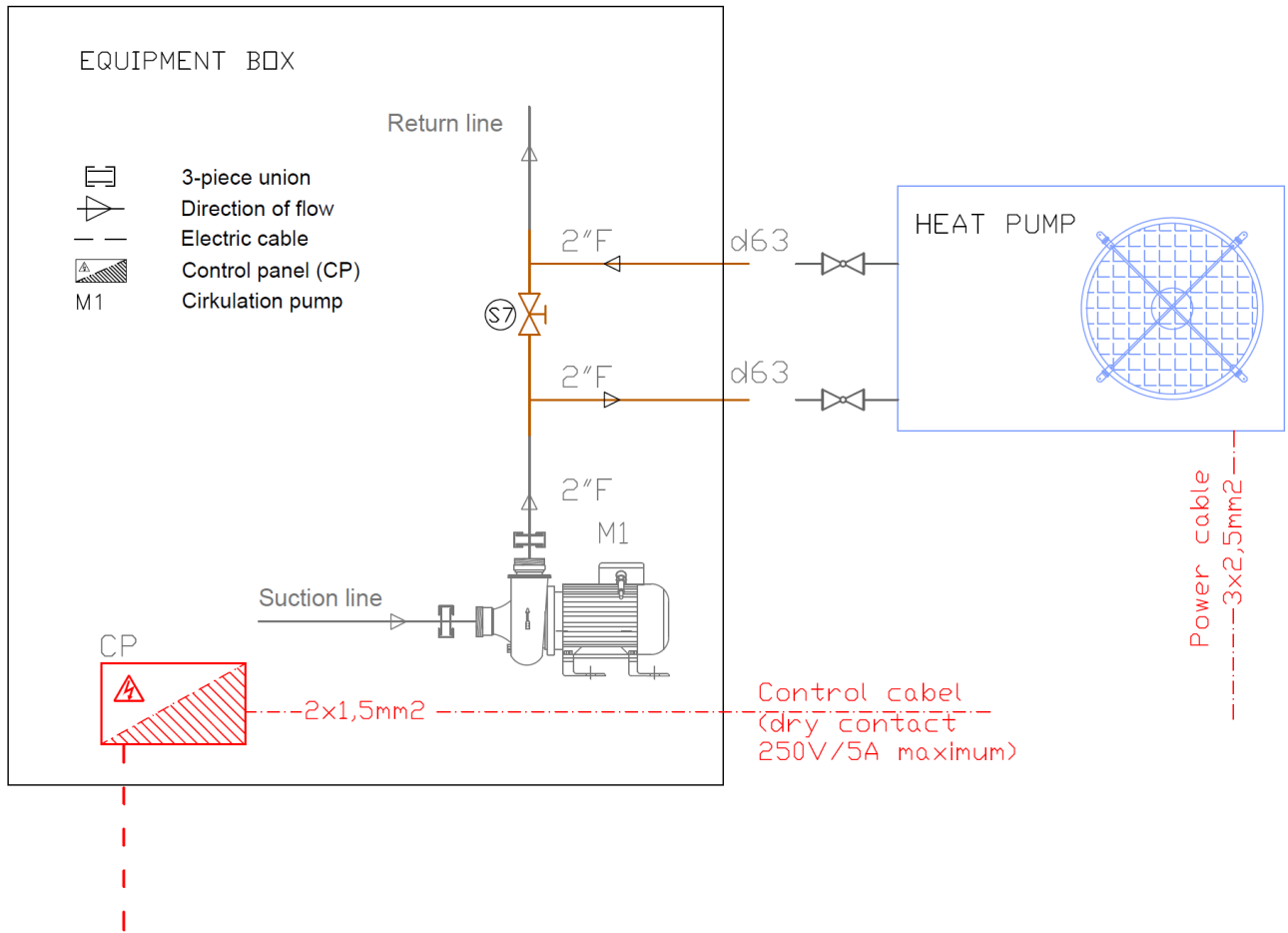


Fig. 30 "City Pool" additional "by pass" output for heat pump connection schematic diagram

If you need to connect a heat pump or heat exchanger, attach it to the output of the „by-pass“ line (d63/d50). Install shut-off valves at the heat pump IN and Out. It is also necessary to connect a "dry contact" from the electrical control panel (CP) to control the heat pump. The heat pump should only operate while the pool water is being recirculated.

2xØ63 "by pass" pipe connections



Fig. 31 The "by pass" output of the additional heating circuit. Glue the plug in case no one is connected.

POOL STARTUP

12. Power supply and ground circuit connection

The technical pump room of the swimming pool is supplied with 230V, 50Hz AC and must be connected from the Earth Leakage Circuit Breaker (ELCB) with ≤ 30 mA sensitivity (according IEC 60364-7-702), a minimum short circuit and overload protection proportional to the power cable diameter.

These security modules must be connected to the common panel of the house, in a commonly accessible location, or integrated in a dedicated electrical cabinet for the pool.

The connection between the pool technical pump room and the electrical box of the house must be made using a sheathed electrical cable with 3 conductors (Phase / Neutral / Earth) of sufficient section ensuring maximum power (according to the pool modification):

- „City Pool Basic“ modification - cable min $3 \times 1.5 \text{mm}^2$ and circuit breaker 13A (C13 250 V AC).
- „City Pool Active“ bei „City Pool Fun“ models - cable min $3 \times 2.5 \text{mm}^2$ and circuit breaker 20A (C20 250 V AC).

The recommended diameter of the power cable is up to 30m from the common panel. In any case, it shall be proportional to the distance from the pump room to the common panel. Parameters given as standard for models with no additional options.

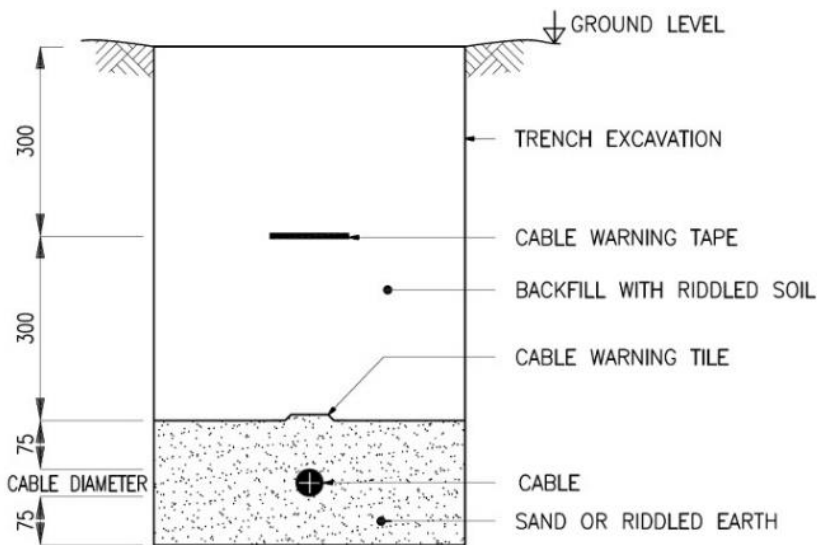


Fig. 32 Outdoors, the cable must be buried in a ditch with a PVC or PE sheath to prevent mechanical damage.

If you want to control the pool light remotely (building, house, gazebo), instal on/off switch and bring the cabel $2 \times 1.5 \text{mm}^2$ to the pool control panel (CP) contacts.

According National Electrical Code (NEC) Section 680.26(C), pool water shall be electrically bonded, not just metals in the structure of the pool itself. The Pool defender compact Anode & Water Bond installed inline with the pool plumbing. Pool bonding anode protects people, pets and pool equipment.

Near to the pool set special Grounding rod of 2m. Connect it with cable $1 \times 10 \text{mm}^2$ through technical premises to installed Bonding anode (Fig. 33,).

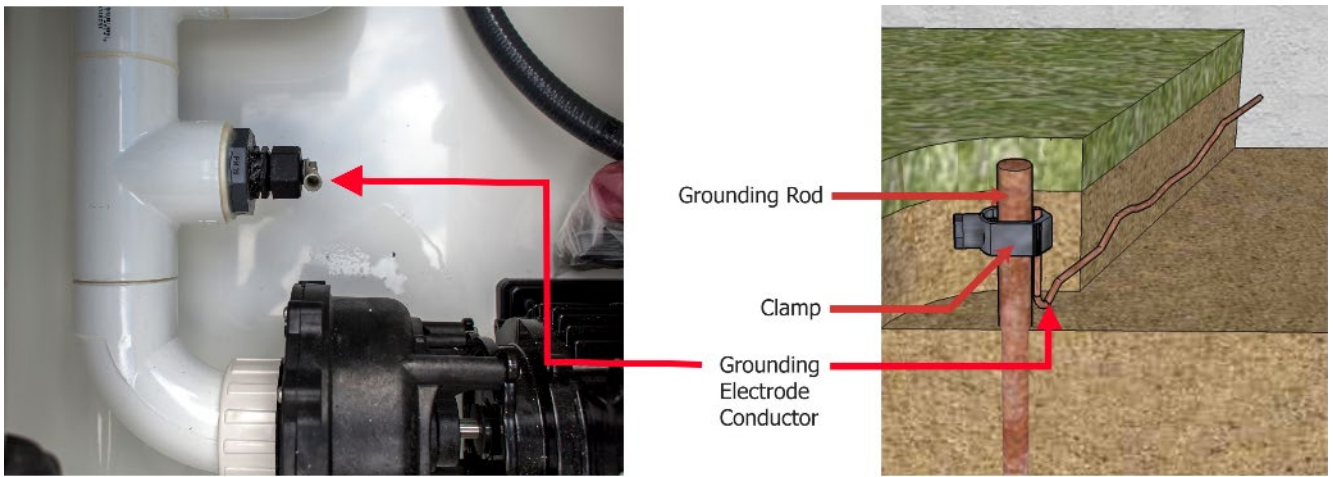


Fig. 33 Grounding Rod and Anode connection



IMPORTANT :

These electrical connection works should be carried out by professionals, according to the applicable valid safety regulations for this type of bathing facilities.

The electrical control panel (CP) documentation is included with your pool (see technical box inside).

13. System Startup

13.1 General references

The quality of the pool water is ensured by the circulation of water through mechanical filters (cartridge filters in the skimmer), together with dosing chemicals. "City Pool" pool maintenance is required once a week on average, or more frequently if the pool is used more intensively. The pool water is changed once every 1 year, so it should be possible to drain all the pool water into the sewerage system.

In "City Pool", the water level should always be 15cm below the pool curb, filled about half of skimmer throat (1). During the water circulation, debris (pollen, leaves, grease, etc.) floating on the surface of the water, and is trapped in cartridge filters. From the skimmer, the water flows through the pipeline to the circulation pump (M1) and is then returned to the pool via the nozzles (4, 9) ("Active" and "Fun" models have an additional wall-mounted suction (6)). If a heater is installed (optional), the water is additionally heated during water recirculation.

In private facilities, the circulation pump runs an average of 10-12 hours a day. This includes mechanical water purification, water temperature control, and mixing of chemical products. The Skimmer (1) cartridges must be rinsed or replaced periodically (see filter cleaning procedure in "Cleaning and replacing the cartridge filters").

Flush the filter once a week. In the long run, if the filters are not plugged in, they become clogged, which slows down water circulation and can cause equipment damage.

Pool operation without installed cartridges is only possible in the "City Pool Basic" model because the circulation pump (M1) has a pre-filter. The circulating pump pre-filter must then be periodically maintained for contamination. In "City Pool Active" and "City Pool Fun" models, we do

not recommend switching on the water circulation after removing the filters, because if larger debris is sucked in, it will damage the unprotected pump (M1) impeller.

To prevent contamination of the pool water and consequently harmless use of the pool, it is necessary to use swimming pool water treatment chemicals and water testing. Keeping a covered pool when not in use will significantly reduce heating costs and prevent external water pollution and also it prevents children and pets from accidentally entering the pool.

13.2 Steps to a Proper Pool Opening

- 1) If the pool water is contaminated during installation works, replace it with fresh water and clean the pool floor and walls;
- 2) Visually check that all water inlets and outlets (skimmer (1), suction (6), circulation nozzles (4,9)) are not covered for free circulation of water and that there are no debris blocked during construction;
- 3) Insert the cartridge filters (as shown in section 18) into the skimmer. Fill the pool with water to the middle of the skimmer's throat;
- 4) Check all pool PVC threaded couplings in the Technical room box;
- 5) If your pool is equipped with a pre-filter circulation pump, make sure the top cover is properly screwed in;
- 6) Open all the circulation valves marked S1 - S4, S7 in the diagrams. If you have a "by pass" and a heat pump is connected, then adjust the S7 so that some of the water could circulate through the heat pump (valve S7 is for throttling);
- 7) Leave the Pump room drain open for drainage.
- 8) Turn on the circuit breakers on the electrical control panel and program the pump run time. See the attached to the pool documentation for how to do this.
- 9) Test or operate pool circulation, lighting, piezo control, massage system dual speed pumps, massage jets, water heating.
- 10) Check the Pump room for pipening water leaks. If everything is in order, close the lid, lock the locks to prevent small children from getting inside.
- 11) For prevention against unwanted microorganisms, treat the water with chemical disinfectants. Use water treatment chemicals for "shock therapy":
 - adjust the pH of the water;
 - treat water from algae;
 - shock with chlorine or other disinfectant.
- 12) Leave the water circulation running - filtration on for about 10 hours.
- 13) Vacuum up any sediment on the bottom using an available bottom cleaning brush.
- 14) Check the filter cartridges on the skimmer. If contaminated, flush or replace.
- 15) Use a photometric tester to check the pH of the water and the level of free chlorine. If the water quality meets local hygiene standards, you can use the pool.
- 16) If the chlorine level in the water is too high, wait until it drops; if the level is too low, add chemicals. Adjust the water pH if it is above normal.

Attention! Do not place chlorine granules or tablets directly into the pool, as this may cause irreparable damage to the surface. Use floating dispensers, or place tablets inside the skimmer.

POOL OPERATION AND MAINTENANCE

14. Massage systems

- a) "Swim Jet " nozzle (4)(all „City Pool Models“ equipped). The softness of the water jet is regulated by turning the outer ring (this closes or opens the mixing of the water air). Pool water recirculation returns through this nozzle regardless of which pool model you have. „City Pool Active“ and „City Pool Fun“ models with a two-speed water pump, this nozzle at full power transforms in to a powerfull counter-swim for sports. The nozzle does not require additional maintenance.



- b) Two seats, each with 2 rotary twin massage jets „Twin Roto“(9). Adjustable by turning the outer ring. This massage group is only fitted in the „City Pool Fun“ model. Flow control via piezo switch, is controlled by motorized valves (S5, S6), from the „Swim Jet“ central nozzle to the „Twin Roto“ these rotary jets. Nozzles are for back massage sitting on the pool bench.



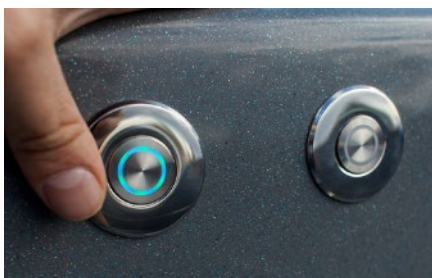
Rotary nozzles easily rotate with internal bearings and operate without regular maintenance. It is important the water hardness so that the bearings do not get lime deposits. If the nozzles become clogged, they must be dismantled, cleaned and returned to the socket.

- c) Additional suction



The "City Pool Active" and "City Pool Fun" models are equipped with an additional suction (6) with a stainless steel grill. It is very important not to cover the suction grille to ensure that the pump (M1) has sufficient water suction flow. Periodically clean the grill from accumulated dirt.

15. Operation with piezo buttons



"City Pool Active" and "City Pool Fun" models with dual speed pump (M1) equipped with piezo buttons (7.8).

The first (7) button is for on/off control underwater LED lighting. Second button (8) for massage system activation, pump speed control and flow control for different nozzles ("City Pool Fun" models). Activated buttons are seen by the indicator light.

16. Underwater lighting

All City Pool models are equipped with LED underwater lights (3). The lamp can only be switched on when it is under water (water cools it down). Switching on without water can cause the lamp to overheat and the plastic housing to deform.




17. Regular pool maintenance

Cleaning of the pool and equipment should be done once a week. This requires:

1. Flush the cartridge filters (1) or replace if necessary (see filter flushing instructions).
2. Skim the leaves floating on the surface of the water with a sieve
3. Using pool cleaning equipment, clean pool bottom and walls if contaminated.
4. Using a handheld photometric tester, measure the chlorine and pH in the pool water.
5. Dosage the required amount of chemicals
6. Technical inspection of swimming pool equipment. Periodic inspections of the piping system installed in the water supply system are necessary.
7. Inspection of drainage system Well. The water level of the drainage Well must be checked periodically. Check that the submersible pump is not blocked.

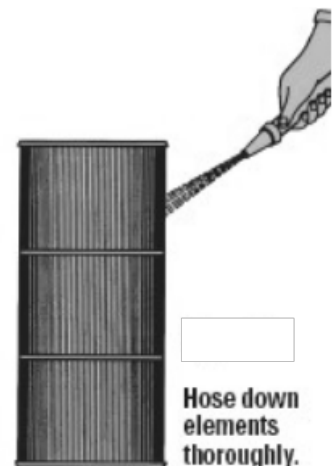
18. Cleaning and replacing cartridge filters

Disassembly of the cartridge filter is only possible when the pump (M1) is switched off. Stop the pump, open the skimmer (1) housing and remove the cartridges:

	Slide the skimmer panel up and remove
	Remove the leaves picked up in the basket
	Unscrew the two filter cartridges. Rinse the cartridge filters with a high pressure jet. Return it back to the skimmer.

High pressure water jet cartridge cleaning:

- Rinse the filter cartridge with a high pressure water jet using a "Karcher K" series pump (or equivalent)
- Put the washed cartridge back into the skimmer (1).
- Close the cover of the skimmer (1).
- Start the pump (M1).



19. Water treatment chemicals

The invisible dirt is made up not only of bacteria, which can multiply very rapidly and cause problems, but also algae and fungi of various kinds which spread to the pool, where they find the conditions pleasant. Chemical agents are used to combat and control these. To make sure the water in the pool is crystal clear and clean, it needs to be chemically treated for:

Daily and weekly chlorination

The residual active chlorine concentration in the water should be between 0.7 and 1.0 mg/l. Parameters can be verified with a hand-held photometric tester using DPD-1 Test Tablets, which are designed to test free chlorine levels in pool water. Chlorine levels should be checked once a day during daily use of the pool.

For weekly chlorination use a product containing slow-acting trichlorisocyanuric acid e.g. 200 gram tablets dissolve slowly and continuously disinfect the pool water. Normally one tablet is enough for 20 m³ of water for one week. Place the tablet in a dispenser, skimmer or feeder.

pH adjustment

The pH of the water should be in the range of 7.0 - 7.4. Such limits are necessary for the efficient operation of chemical products.

Measure the pH with a photometric tester and Phenol Red test tablets. For pH values above 7.4, "pH-minus" is required, for pH values below 7.0, "pH-plus" is required.

Combating algae

Algicides prevent the algae from getting established and multiplying in the pool. Algae that have already become established need to be removed with an extra-high dose of chlorine (shock chlorination). With regular chlorination small treatment doses recommended once a week.

Use a non-foaming algicide before algae appear, if the pool has a massage systems.

Calcium hardness (CH)

The calcium hardness is a measure of the amount of lime dissolved in the water. Water with a CH of less than 100 ppm (mg/l) is described as soft water. It also makes the water aggressive. Water with a CH above 300 ppm (mg/l) is described as hard water and causes lime to be precipitated. Lime precipitation causes limescale to form on the walls and pipes of the pool and in its mechanical equipment.

The guideline figure is 100-300 ppm (mg/l). The calcium hardness can be reduced by dilution with fresh mains water and increased with calcium chloride. Also it is recommended to use Calcinex Pool (Bayrol) or other manufacturer's analogues to avoid lime scale build-up in pool water, heating elements and filtration systems.

You can feel the need by swiping your hand over the pool wall, metal surfaces, and if you feel the surface rough, it's a signal.

Attention!

Keep chemicals out of the reach of children.

Refer to the packaging labels for instructions on the use of chemicals.

20. Pool interior surface maintenance

Insufficient use of chemical products and poor water circulation through the filter can cause sludge on the pool walls. Cleaning such a pool requires more labor and chemical products. It is recommended that once every 1 year the gelcoat pool surface be covered with a special protective layer.

Swimming pool maintenance is recommended only with the use of tools designed for that purpose. Do not use detergents, abrasives, solvents for cleaning.

Do not use any abrasives, brushes, etc. to clean the gelcoat. Use liquid pool cleaners like Decalcit Super, Bordnet (Bayrol) and more.

21. Water level in the pool

When operating the pool, it is necessary to monitor the water level in the pool and add fresh water if necessary. The water level in the pool is maintained at or above the center of the skimmer orifice. Insufficient water levels can cause air suction to the system and cause the circulation pump to fail.

22. Swimming pool cover

- Use a hard pool cover. Advantages of using a pool cover ;
- Evaporation of water is significantly reduced;
- Energy savings required for water heating;
- Protects the pool from direct sunlight, saves chemicals;
- Decrease in evaporation of chemical products;
- Prevent children and pets from accidentally getting into the pool.

23. Pool water drainage

IMPORTANT. Draining water from the pool can only be done with the supervision or consultation of the company that installed the pool.

When draining the pool water, it's body must be framed (as it was during construction, Section 7) for possible ground movement.

Drainage from the pool can only be done for cleaning or repair work.

It is very important to check the water level in the pool according to the inspection well, i.e. to drain water only when the drainage well is empty, which means that the groundwater level below the bottom of the pool. Then it is safe to do these jobs without the fear that groundwater pressure will deform the body of the pool.

24. Pool maintenance during the winter season

"City Pool" is installed in various climate zones. When installing a "City Pool" in colder climates, where the average winter temperature may be below 0°C, the manufacturer strongly recommends to install a water heater and use thermal insulation pool cover.

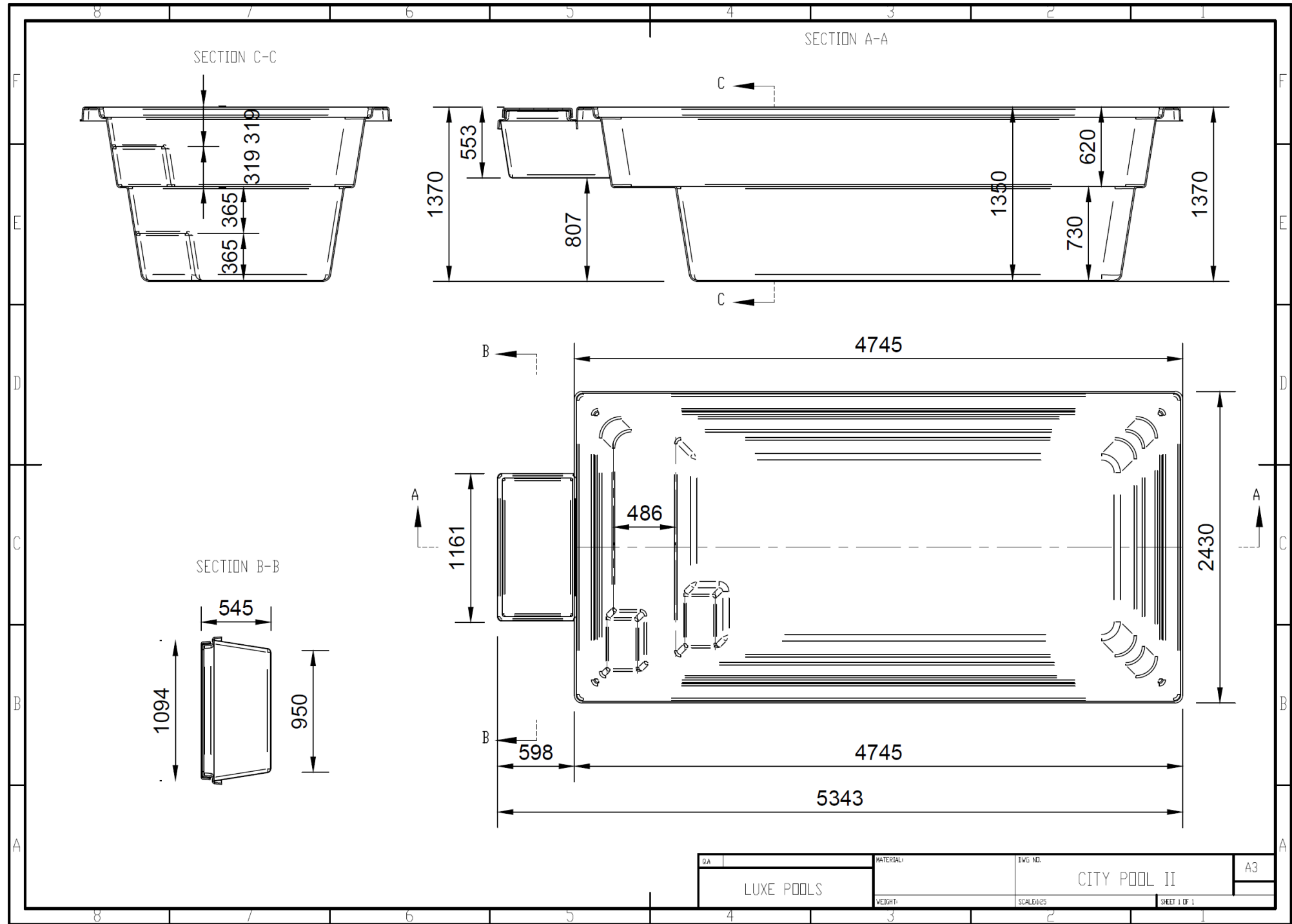
The heater must be set in the controller (CP) to maintain a pool temperature of 10°C.

In order to prevent algae and bacteria from appearing in the pool water, it is recommended that you always prepare for winter during the period of inactivity. For this purpose, put into the water a product for winter preparation and program the filtration cycle for at least 4 hours a day (spreading the working time in periods).

POSSIBLE PROBLEMS AND THEIR SOLUTION IN THE OPERATION OF THE POOL

There is no water circulation in the pool, the water has cooled down	* Check power supply
Underwater pool lighting not working	* Checking the circuit breakers on the electrical control panel (CP) * Increased input voltage, resulting in overheating of the transformer, requiring input voltage stabilization
Water heater not working	* Off heat regulator - enable automatic switch (CP) * Check water circulation. Adjust timer working time (CP)
The water is heating up very slowly	* The heater is "overgrown" with lime deposits. Call the pool service masters. * Cover the pool * Extend timer pump (M1) operating time
Air bubbles are fed into the pool through the nozzles and the pump runs loudly	* Low water level in the skimmer (1). The pump (M1), together with water, draws in air, which returns to the pool through the nozzles. Add water to the pool.
Foam appears when using massage equipment	* A non-foaming algicide is required to prevent foaming.
The water changed color and turned greenish	* Insufficient water disinfection. It is necessary to increase the dose of algicide and to control the chlorine level in the water. Pool water "shock therapy" (chlorine level maintained at 2-3 mg/l) is required for 2-3 days.
The color of the water is pale, the water is not crystal clear	* Rinse cartridge filters, and increase free chlorine level
The eyes become sensitive after using the pool	* High concentration of total chlorine in the pool * Replace some of the pool water with fresh water
The power of the massage pump has decreased	* Flush or replace cartridge filters in the skimmer (1) * Check for additional debris in suction installed on the pool wall (6)

In all cases and at all stages of using your swimming pool, if any doubt occurred, please, contact your distributor or, in extreme cases, the manufacturer.



DA	MATERIAL	BVG NO.	A3
LUXE POOLS		CITY POOL II	
WEIGHT	SCALE: 0.25	SHEET 1 OF 1	

