



Fiberglass swimming pool installation manual

Manufacturer's guide and warnings:

Polyester body is a part of swimming pool made of composite materials (resin and glass fiber), manufactured in one piece (monobloc) and is the essential dig into the earth swimming pool element.

Swimming pool - is an artificial, water-resistant, disinfectant, renewable and recyclable reservoir and all necessary swimming pool operation equipment, intended for water activities, where water is filtered and disinfected.

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 polyester body must be completely filled all the time (the minimum level of middle separator). If you are intended to drain water from the swimming pool, partly or minimally or even for few seconds, please, contact your distributor. Please, follow recommended precautions.

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 installation must be protected by 30 mA fuse, installed by a licensed specialist.

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

Attention!

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

SITE PROCEDURES

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. Soil stability and consistency features determine the importance of performed swimming pool filling.

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

2. INSTALLATION, 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!

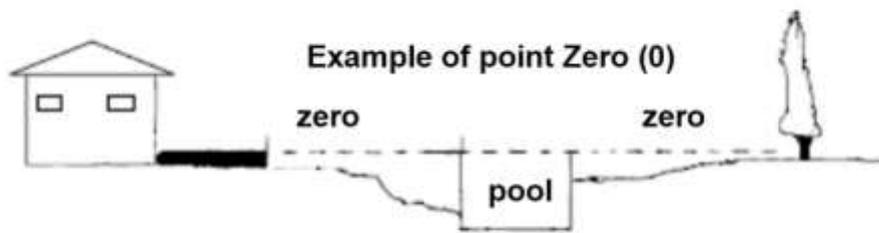
It is not recommended to install swimming pool on the soil poured recently (less than 3 years ago), otherwise there is a risk of sinking. If the installation location is on a natural slope, it is necessary to install a platform and retaining walls.

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

2.1 ZERO POINT (0)

Zero point (0) is the starting point; it meets completed work height measurement point. It is used to determine the level of the swimming pool compared to facilities or ground surface inclination.

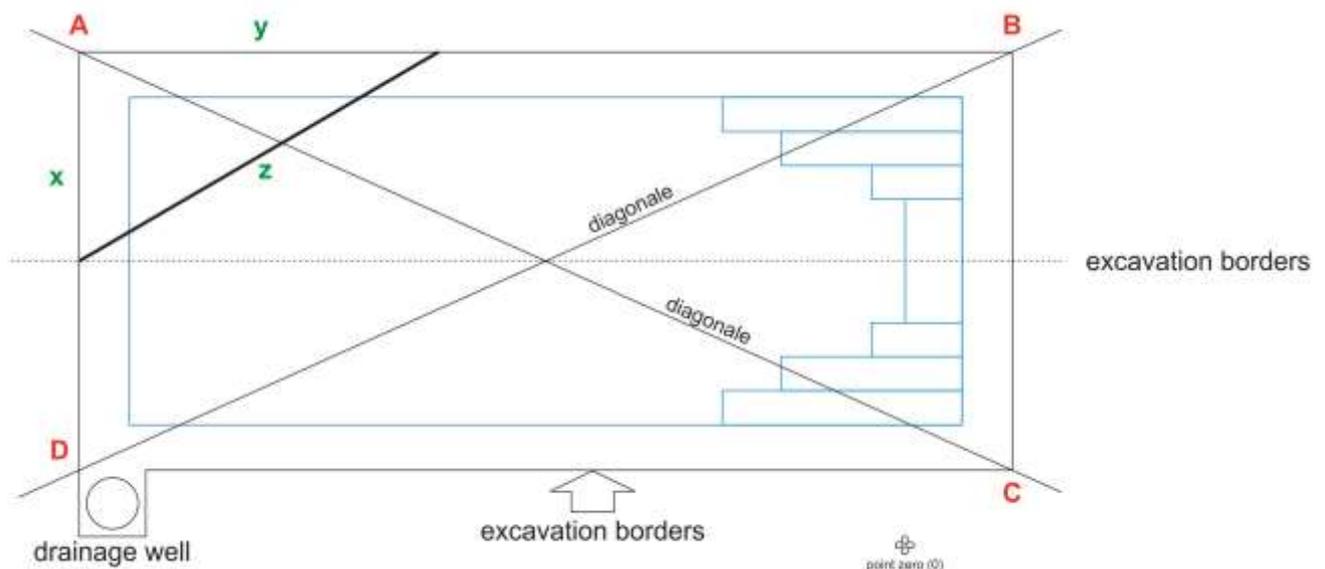
Zero point is the starting point for the whole duration of the project; use a stationary reference (on the building or on support pole outside of access area).



2.2 MARKING

The marking can be done using an observation sheet, which will reflect swimming pool shape and surface. If there is no observation sheet, mark edges with sticks, strings and marking balloons, while performing checking of diagonals and corners.

Pay attention to the layout and/or parallels of the existing dimensions according to installation specifications, stated in the agreement documentation.



Calculation of Diagonals and Squareness Checking

Squareness checking:

- Locate the point on the distance of Y meters from the corner A of a peripheral AB
- Locate the point on the distance of X meters from the corner A of a peripheral AD
- Measure the distance between 2 located points; it must be equal to Z meters (if the amount received is greater, repeat marking)

Triangle diagonal: $X^2 + Y^2 = Z^2$

Recommendations:

- Set the swimming pool with the separator facing the prevailing wind.
- Mark on 20 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 by a balloon on a pole or on terrace. This will be necessary for ground work and terrace which will be installed later.

Ground work - sewer connection (drainage wells balance)

The goal of ground work - is to dig a hole for swimming pool body. This action must be given special attention (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 hole must be clean and cleared of all extraneous elements (stones, roots, etc.) or sedimentation (friable soil etc.)
- Follow hole dimensions stated in this guide
- If you did not comply with established dimensions (hole too deep), cannot pour hole with friable soil, but need to use stabilized soil, locate geotextile on the bottom of the hole, restore the desired level using large rubble or ballast, which will be covered with geotextile before the completion of the formation of the base.
- Remove smooth or friable soil around excavation works for safe filling machine moving (bobcat or wheelbarrow), as well as giving access around the swimming pool for further works.

If the soil is unstable, and the hole is necessary to carry out the work, it is very important to perform filling with earth correctly.

WATER OR 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.

VERTICAL DRAINAGE OR PRECIPITATOR (*drainage wells balance*)

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.

The main function of the hole located in the bottom of the vertical drainage is to check the level of the ground water, and secondary function - to reduce ground water level and to maintain reduced level according to water level inside of the swimming pool, using filter and surface pump or vacuum pump.

External water level should always be below the water level inside the swimming pool (middle separator).

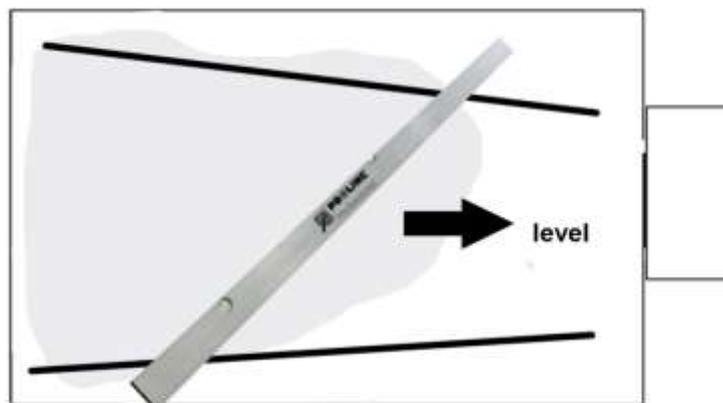
This drain consists of a tip or a sewer pipe with a minimum diameter of 200 mm, it must be installed below base level on the rubble and isolated with natural soil using geotextile covering (Bidim or similar).

This well is exposed to atmospheric pressure and need to be protected with safety covert from air leakage and to allow easy access to the underground water checking.

Soil preparation - geotextiles - installation of scales

After mechanic earth works it is needed to check desired depth depending on specific your model dimensions (See dimensions in the guide).

- Finish cleaning the soil manually using shovel and rake and aiming to remove remaining friable soil and stones or elements which can hinder to lay geotextile, scales and crushed rubble.



- Place the geotextile (Bidim or similar) at the bottom of the hole according to planned digging perimeter and do not hesitate to put marks on the edges of the hole with positioning scale; these marks will also be used to check the position of the swimming pool after its fixation.
- Re-pay geotextile on the walls so that natural soil would not absorb filled ground (this is especially recommended if the ground is heavily saturated with water).
- Check scales evenness by verifying each desired height and a right angle.

- Put scales in according to zero point position by the plan attached to the swimming pool. Check the height by keeping optical reference point as zero point plus 1.35 m depth, as shown.
- Fill with crushed rubble by scale height, then with the help of third scale plain the rubble over whole hole surface to ensure that the average rubble thickness of 20 cm (thickness can vary between 15 and 25 centimetres in order to correct any ground defects) in accordance with dimensions shown in this guide.
- Check levels, remove scales and correct the excavations.

Crushed rubble:

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 of a thumb nail size: 6 -10 / 7-16 / 5-15 / 10-14.

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.

SWIMMING POOL DELIVERY

Body delivery into the hole is carried out by us or by our authorized installers, subject to prior authorization, and if our truck can reach at least 5 meters distance to the site ground works and carry out the works with the crane under normal safety conditions.

In some cases a special crane is required, which can provide specific services.

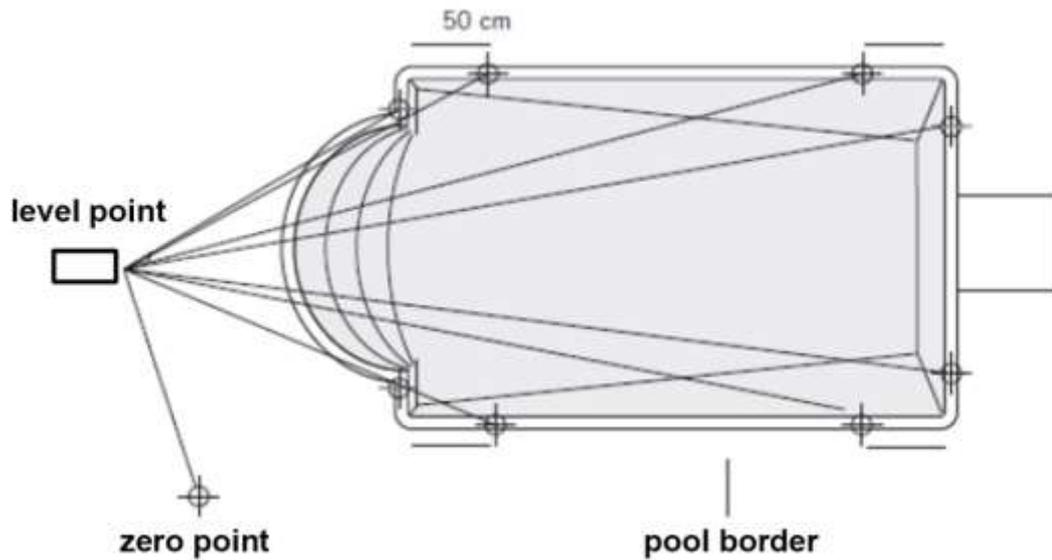
Undisturbed access must be ensured; it is recommended to pay attention to the trees, electrical wires, telephone wires, etc., which presence may hinder the work.

As much as possible, the swimming pool has to be operated by the feet in order to prevent certain construction indents.

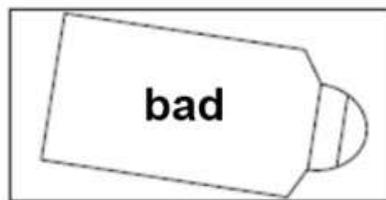
The swimming pool has to be gently lowered in the excavated hole in accordance with marks on the edges of the hole (bottom and central axis marking).

SWIMMING POOL EQUIPPING AND LEVELLING

Adjust horizontal swimming pool level using dipstick (lenses or laser) and checking the position of the swimming pool in the defined points, layout and zero point.



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.



If level difference from 1 to 2 centimetres appears, press and jump on the inclined side edges of the highest point, to make the pool completely stand on the ground. This can help restore the desired position.

If the difference in levels in excess of 2 centimetres, it is necessary to extract the pool and check the pool's base and pool's position in the hole.

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 gel layer cracks due to water pressure...

WALLS FILLING, SWIMMING POOL AND TECHNICAL PREMISES CONSOLIDATION

It is necessary to choose the incompressible crushed rubble (same kind that is used for the base). Any other type of backfill is prohibited and will be regarded as inconsistent with this manual.

CORNERS FILLING

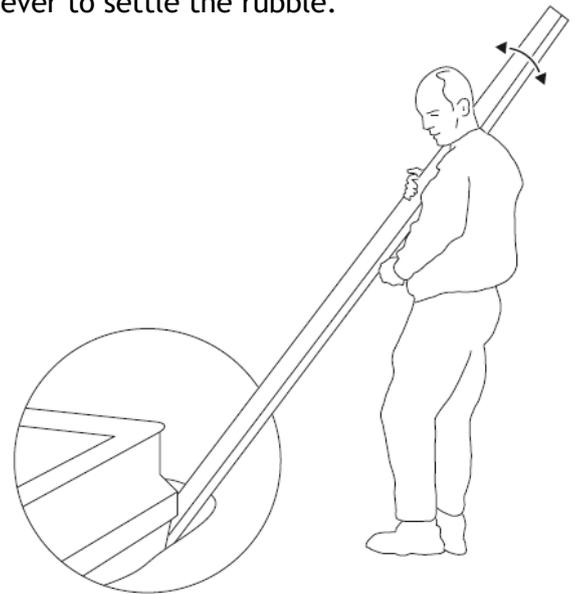
Filling starts with 4 corners consolidation.

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-truck type).

Check level and readjust swimming pool levelling.

- To lower corner, stamp your feet or jump on the edge of the swimming pool.
- To raise the corner, use wooden rafters as a lever to settle the rubble.

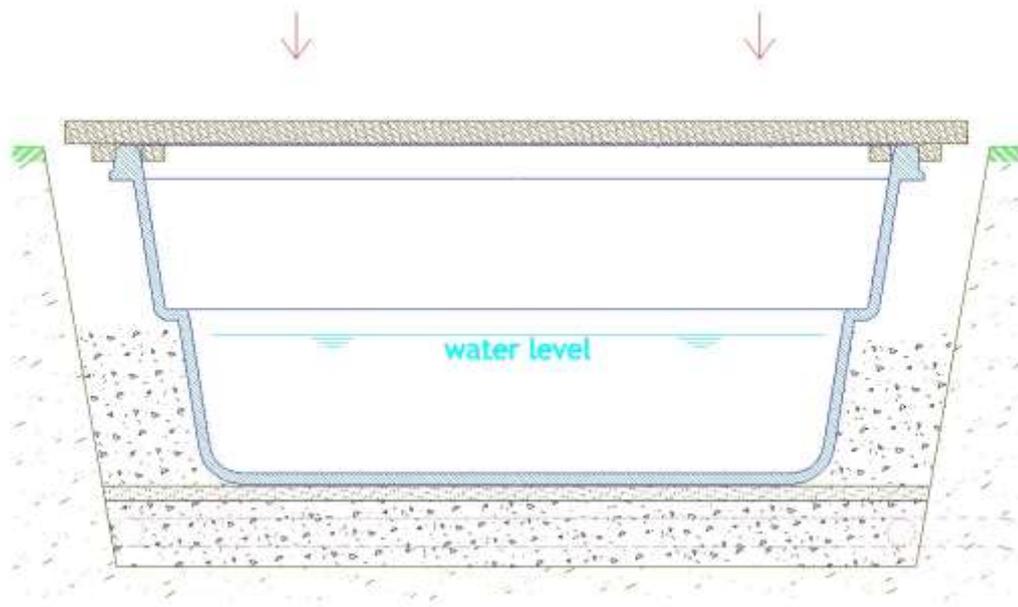


When the pool is fixed at the correct level, begin to fill it with water up to the first step to stabilize and balance it.

SUPPORTS POSITION

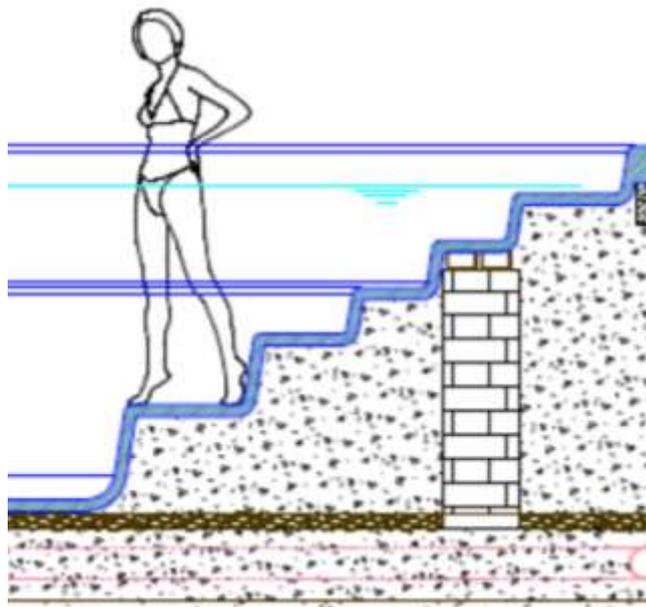
To avoid rubble pressure and body deformation when filling with earth, it is necessary to install 2 supports along the body width of approximately 1/3 and 2/3 of the length of the interval.

These supports remain in place until the complete swimming pool filling.



STAIRS SUPPORT

Models: TOBA, NAKURU, ANDAMAN and GARDA must have a stairs support bellow the middle stair. Brick or reinforced concrete column must be in place.



FILLING WITH EARTH HALFWAY

Start filling with earth and compacting soil lightly with grip or hollow 1 cm diameter and 2 meters long metal tube. Your poured earth is compacted until no more loose earth is running after pressing it with grip or tube.

These actions seek to fix finally the swimming pool on the ground and avoid the risk of its movement. This stability will be ensured unanimously filling the pool with soil or other materials.

Continue filling operation in an effort to maintain the same filling height (increase the filling height in 30 centimetres intervals around the body).

Regularly check the wall smoothness; if it swelled, reduce slightly the amount of rubble in the uneven area.

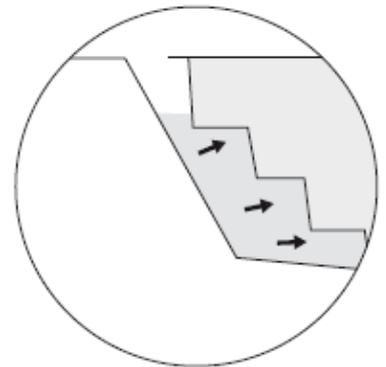
Constantly compact filling earths with grip or tube until earth level is 20 cm below the edge of the pool.

ATTENTION:

Never use a vibrating machine when compacting filling earth.

ATTENTION:

Do not leave the pool completely unfilled and empty without external ground water monitoring. There is a risk that the pool will be marginalized and destabilized.



CONCRETE PROTECTIVE FENCING

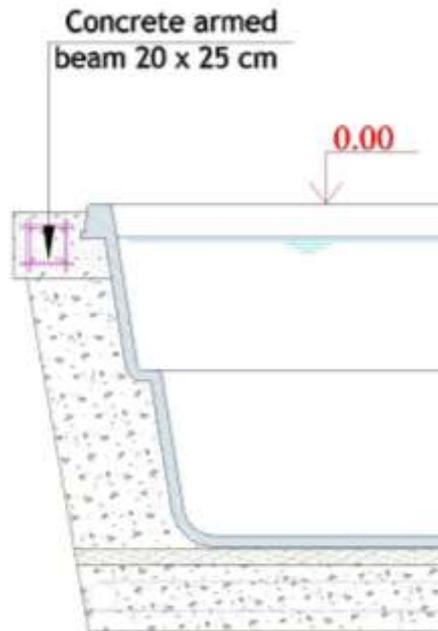
When the swimming pool is filled until 20 cm to its edge, in the central exit install concrete protective fencing of 20 cm in height and 25 cm in width, a minimum of 280 kg (thus, 300 kg of concrete or 400 kg of concrete produced on site with concrete mixer) with a centred reinforcement (minimum reinforcement ratio equal to 1,57), or by using 4 twists of 8 or 2 twists of 10.

Fiber-reinforced concrete can be used together with twist.

You can also put reinforcement at the edge of the pool connecting it with twist or wire.

Fencing installation you can perform in a following way:

- By formwork with good spatula and vibrating spatula to ensure the integrity of seats edge.
- With “dry” concrete and formatting your fencing with two spatulas (use the bottom edge as starting point for equalizing concrete fence).



- Concrete fencing is necessary in the case of pool installation on the moving beach wood or composite.
- If there is a terrace or flat, install an expansion joint between the pool fencing and base-plate.

Attention: Constantly monitor that the point “0” is above the natural soil level around the pool and drain rainwater to avoid the pool be overfilled by water and water running over edges.

Excavation borders

Model	Squareness checking			Hole dimensions		
	X, m	Y, m	Z, m	AB/DC, m	AD/BC, m	Hole depth, m
KORO	1.62	2.00	2.57	5.60	3.25	1.78
TOBA	1.80	2.00	2.70	6.60	3.60	1.83
NAKURU	1.95	2.00	2.80	7.60	3.90	1.88
LUGANO	2.15	2.00	2.93	8.25	4.30	1.88
ANDAMAN	2.05	2.00	2.86	8.80	4.10	1.93
GARDA 800	2.15	2.00	2.93	8.60	4.30	1.88
GARDA 950	2.15	2.00	2.93	10.10	4.30	1.88
WANAKA 650	1.95	2.00	2.80	7.10	3.90	1.88
WANAKA 750	2.15	2.00	2.93	8.10	4.30	1.88
WANAKA 850	2.15	2.00	2.93	9.10	4.30	1.88
WANAKA 1000	2.15	2.00	2.93	10.60	4.30	1.88
DOVE 670	1.80	2.00	2.70	7.00	3.60	1.76
DOVE 670 overflow	1.95	2.00	2.80	7.30	3.90	1.91*

*Including 15cm concrete base

Supports

Model	distance between supports, m	Number of supports, pcs
KORO	1.20	3
TOBA	1.40	3
NAKURU	1.80	3
LUGANO	2.00	3
ANDAMAN	2.00	3
GARDA 800	1.60	3
GARDA 950	1.70	4
WANAKA 650	1.60	3
WANAKA 750	1.60	3

WANAKA 850	1.90	3
WANAKA 1000	2.00	4
DOVE 670	1.60	3
DOVE 670 overflow	1.60	3

