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Circular and oval swimming pools INSTALLATION GUIDE

Montageanleitung für runde und ovale Swimmingpools IBIZA

Инструкция по монтажу для круглых и овальных бассейнов IBIZA

IBIZA

Circular and oval swimming pools

INSTALLATION GUIDE



Safety Information

Please read the complete Installation Guide including Safety Guidelines first and follow them during swimming pool construction and use.

Use appropriate safety devices to prevent uncontrolled access into the pool, specifically by children under 5 years of age, thereby preventing their drowning or severe injury.

Non-swimmers and children must be under constant supervision by an experienced person. Remember that safety guidelines and safety devices cannot substitute personal supervision by a skilled person, they can only support it.

Read more detailed information starting on page 30.

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1 Important comments



Read all sections of this document carefully and strictly follow all instructions.

Illustrations and pictures in this document are partly symbolic and typical presentations to give the reader a general idea of the topics described.

Inspect the package(s) delivered before starting the assembly to make sure that all parts of the swimming pool have been provided. Inspect all parts to detect any defect. Mountfield shall not be liable for any damage arising during the shipment if claimed after assembling the parts. Mountfield reserves the right to make changes resulting from technological progress.



Make sure that the steel wall will come in contact with suitable building materials only.

For instance, if you intend to use silicone, make sure that this material contains no acids that may damage the steel wall's protective coating and potentially result in corrosion. It may be necessary to determine if the materials planned are appropriate with respect to the intended use.

1.1 Swimming pool earthing

The swimming pool wall and all large-area metallic parts must be bonded in compliance with applicable local regulations. This is a job for a qualified electrician.

For this, the steel wall may be drilled through in the lower part (and then treated with a zinc spray or a plastic paint) and the earthing cable connected to a metallic bolt (Fig. 1). The cable is routed from the bolt to an earthing pole.



Warning: All electrician's work must be done by a qualified company and in compliance with applicable electrical standards (such as DIN VDE 0100 Part 702).

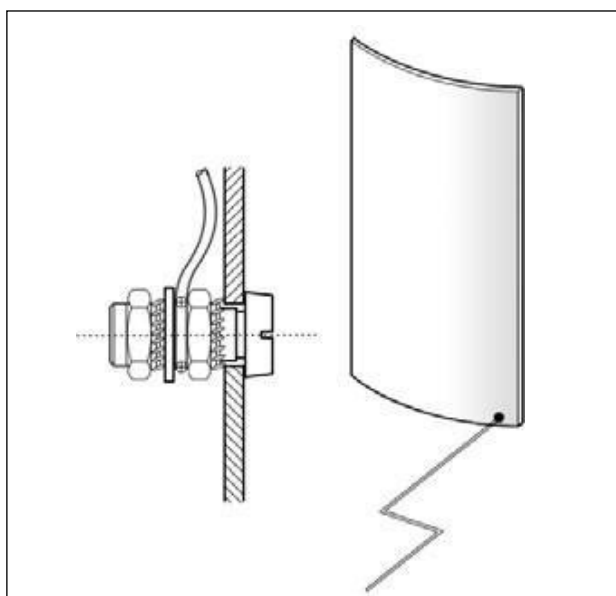


Fig. 1

2 Introductory information

2.1 Swimming pool parts



Fig. 2



The picture above does not show all parts delivered. The design and colour of the parts delivered may differ from what is shown.



The illustrations and pictures reproduced here may differ from the product actually delivered. They are only meant to help the reader understand the text herein.

The manufacturer reserves the right to make changes without prior notice.

2.2 Swimming pool siting

The swimming pool should stand on a sunny place if available, not very far from the house. The skimmer (collecting foreign matter from the pool water surface) should be located downwind, so any foreign matter floating on the surface is pushed by wind to the skimmer. What is more important, however, is that the skimmer should be installed on the side that is closer to the filter.

2.3 Filter location

Install the filter system as close to the swimming pool as possible. Preferably the suction piping (skimmer piping) should be shorter than the return piping (nozzle piping).

The filter system can be installed in a shaft, in the house, in a garden house, etc. If installation in the house and in a shaft is selected, the floor must be provided with a drain (sink) in case of water leak. Water from the back flushing must also be drained, roughly 200 litres every 1-2 weeks. This can be done by means of fixed piping or a hose ending in a drain. If the filter system lies higher than the water level, a return valve must be installed on the suction side, that is, on the skimmer piping. This must be installed 1–1.5 m far from the sand filter system and must be accessible at all times.

The planned water heating method is also an important factor when selecting the place for the filter system. If the swimming pool is to be heated by a dedicated solar system, the filter system should be installed as close to the solar absorber as feasible. Even if an air-water heat pump is planned for outdoor installation, the filter system should preferably also be installed in the garden. However, if the heat exchanger is connected to the central heating system, installation of the filter in the house is virtually inevitable.

2.4 Spatial arrangement options

2.4.1 Spatial arrangement options – circular swimming pool

Three different options exist for the installation of a circular swimming pool irrespective of its depth and size:

Inground swimming pool

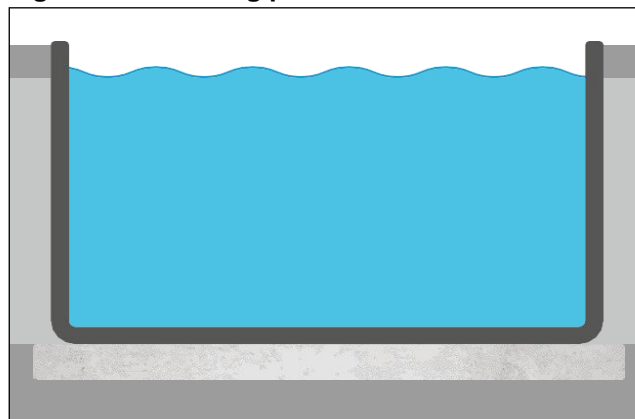


Fig. 3

Semi-inground swimming pool

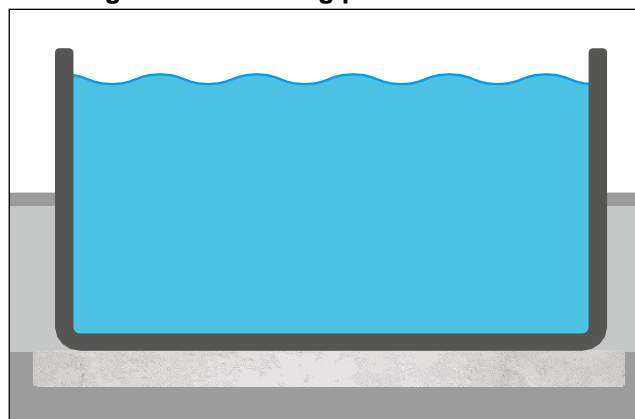


Fig. 4

Above-ground freestanding swimming pool

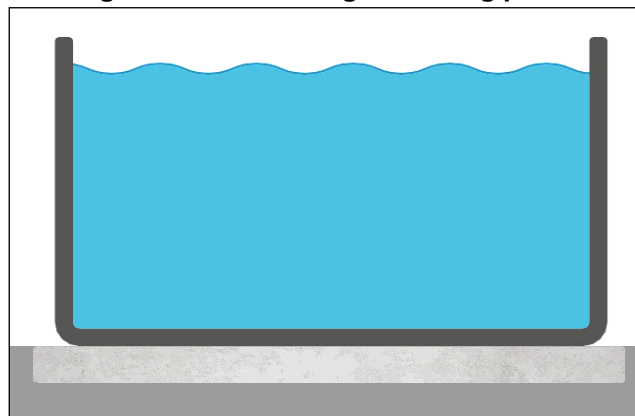


Fig. 5

Swimming pools 150 cm deep must always be at least 60 cm sunk in the ground.

For such swimming pools and for inground and semi-inground swimming pools the area around the inground part must always be backfilled with lean concrete.

2.4.2 Spatial arrangement options – oval swimming pool

Oval swimming pools cannot be installed arbitrarily and their inground part must encompass least 2/3 of their total height. The installation site must be provided with a concrete base slab and with retaining walls on the long sides, which must be joined with the base slab by means of steel reinforcement.

Once the construction is complete, the area around the front sides to the oval swimming pool must be backfilled with lean concrete or bricked in.

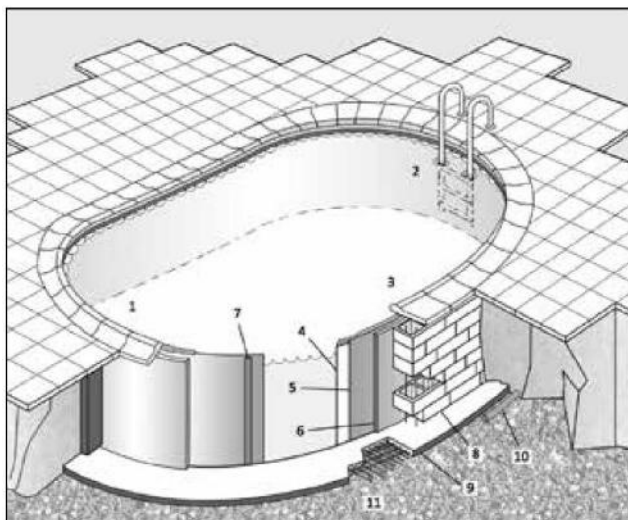


Fig. 6

- 1) The skimmer/nozzle side
- 2) Pool stairs
- 3) Pool lights shedding light away from the installation site (if any)
- 4) Pool liner
- 5) Steel wall
- 6) Construction sheets + polystyrene
- 7) Steel wall joining section
- 8) Retaining wall (reinforced)
- 9) Reinforced concrete base slab
- 10) Water draining
- 11) Gravel (subbase)

2.5 Bed preparation

The swimming pool ground must meet appropriate static strength requirements and must be solid and compact. Any inclined surfaces must be eliminated.

Never create any backfill on the slopes! Any slopes must be supported by retaining walls. Never support a slope by the swimming pool wall!

The ground for the swimming pool must be natural, it should not consist of infilling. Any filled-in earth should be compacted so that the swimming pool should not sink or else more efforts must be made when constructing the foundations. If in doubt, contact a specialized civil engineer or a structural engineer.



Important when installing the pool into earth: The swimming pool must not get into a groundwater area! If groundwater is encountered during the excavation work, a civil engineer-specialist must be contacted and an acceptable solution must be found!

A reinforced concrete base slab must be used. A gravel layer is normally used as the subbase. Water draining piping is generally recommended for inground swimming pools.

2.6 Pool liner

The pool liner is made of a thermoplastic material. So, the swimming pool must be mounted at outdoor temperatures between +15°C and +25°C. Do not install the liner under strong sunlight, it is better to wait till the evening.

Because of its material properties, if exposed to low temperatures, the liner may be about 50 cm shorter than as required for the swimming pool.



Prevent the swimming pool liner from getting in contact with any material that is incompatible with PVC. To this end the use of protective geotextile padding is recommended.

3 Construction preparation

3.1 Pit for a circular swimming pool



When digging out the ditch for a (nearly) inground swimming pool, a working area 50 cm wide or wider must be left for later installation of the swimming pool structure parts and their connection to the piping.

If the inground height does not exceed one-half of the total pool height and the piping should not be buried, an area 20–30 cm wide will be sufficient.

Remember that the lean concrete backfilling of the area immediately after the steel walls must be 15–30 cm thick. More information can be found on page 27.

Recommended pit dimensions:

Swimming pool	Pit dimensions
Width x length [m]	Width x length [m]
3.60 diam.	4.60 diam.
4.00 diam.	5.00 diam.
4.60 diam.	5.60 diam.
5.00 diam.	6.00 diam.
6.00 diam.	7.00 diam.

For the sake of simplicity the pit has normally a rectangular shape, although it can, of course, also be circular or oval as appropriate, with the required dimension margins.

The dug-out depth depends on the base slab and gravel layer thickness as well as on the depth and height of the swimming pool.

The rule of thumb is:

$$\begin{aligned} & \text{Gravel layer thickness} \\ & + \text{concrete slab thickness} \\ & + \text{swimming pool (inground) depth} \\ & = \text{digging depth} \end{aligned}$$

The base slab is typically 15 cm thick, the gravel layer is typically about 5 cm thick (the precise thickness will be determined by the installing company depending on the bedrock).



Important: If the filter system is not located immediately at the swimming pool and the piping is planned to be buried, then the trenches for the piping must be excavated simultaneously with the pit for the pool.

The trenches for the piping must be excavated simultaneously with the pool pit. They should be approximately 40–50 cm wide and about 80 cm deep. If the possibility to completely drain the piping before the winter season exists, the pipes can be laid higher, inclined downwards to the (lowest-lying) draining point.

For this we recommend preparing a large (160 mm in diameter or larger) plastic or similar pipe at the appropriate site.

If required, trenches can also be excavated for piping from the filter system to a solar heating system and for power supply cables.

3.2 Base slab

Once the pit is dug out and a water draining system prepared, the concrete base slab (C16/20) reinforced with a Q 188A construction steel mesh is fabricated. The recommended base slab thickness is about 15 cm: the actual thickness (and the gravel layer thickness) should be specified by a specialized civil engineer.



The base slab should be laid precisely horizontally, with no gradient, and its edges should overreach the swimming pool edges by some 10 cm.

Once again, the base slab can be rectangular or circular/oval (copying the swimming pool contours).



Warning: Respect the concrete setting time (typically 28 days). Only a civil engineer-specialist may decide (on his/her own responsibility) that this time can be shortened .

3.3 Pit for an oval swimming pool

3.3.1 Ground plan and size: swimming pool and retaining wall

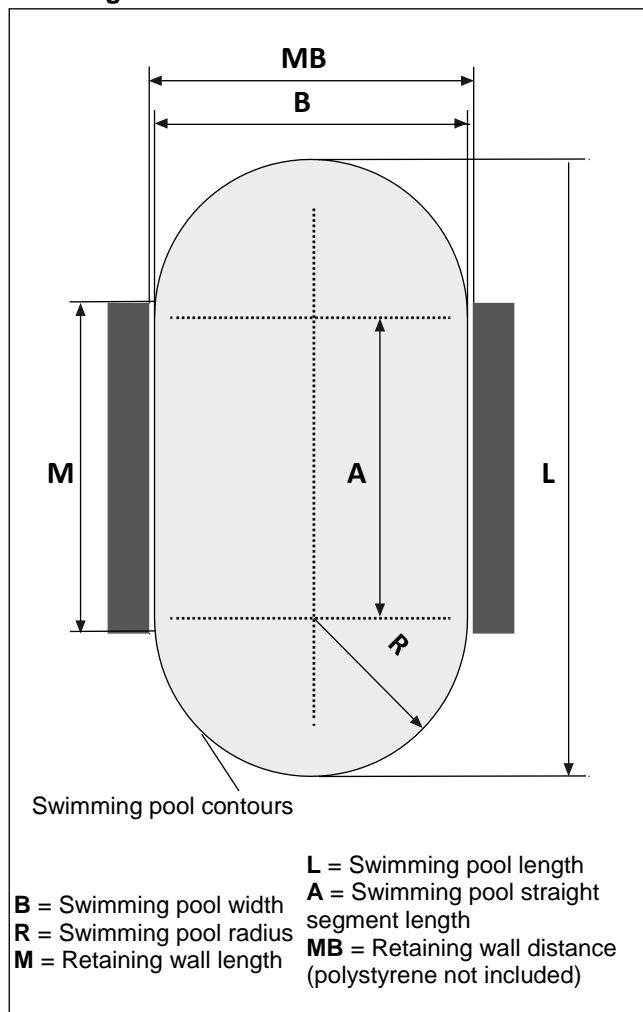


Fig. 7

Swimming pool			Retaining wall	
Width x length [m]	A [m]	R [m]	MB [m]	M [m]
3.20 × 5.25	2.05	1.60	3.24	2.25
3.20 × 6.00	2.80	1.60	3.24	3.00
3.50 × 7.00	3.50	1.75	3.54	3.70
4.16 × 8.00	3.84	2.08	4.20	4.04
4.16 × 10.00	5.84	2.08	4.20	6.04
6.00 × 12.00	6.00	3.00	6.04	6.20

3.3.2 The pit



A margin of a minimum of 50 cm must remain in the rounded swimming pool segment where the skimmer and nozzles are to be mounted, to allow the parts to be built in and interconnected with the piping at a later stage.

Margins of 30 cm are sufficient on the opposite side and on the longitudinal sides.

Remember that the space immediately behind the steel walls (except for the retaining wall segments) must be backfilled with lean concrete at a 15–30 cm thickness of bricked in.

Recommended pit dimensions:

Swimming pool	Pit dimensions
Width x length [m]	Width x length [m]
3.20 × 5.25	4.30 × 6.25
3.20 × 6.00	4.30 × 7.00
3.50 × 7.00	4.60 × 8.00
4.16 × 8.00	5.25 × 9.00
4.16 × 10.00	5.25 × 11.00
6.00 × 12.00	7.10 × 13.00

For the sake of simplicity the pit has normally a rectangular shape, although, of course, it can also be circular or oval as appropriate, with the required dimension margins.

The dug-out depth depends on the base slab and gravel layer thickness as well as on the swimming pool depth.

The rule of thumb is:

Gravel layer thickness
+ concrete slab thickness
+ swimming pool depth
= **digging depth**

The base slab is typically 15 cm thick, the gravel layer is typically about 5 cm thick (the precise thickness will be determined by the installing company depending on the bedrock).

The above-ground swimming pool height must not exceed 1/3 of the total swimming pool height. Typically the swimming pool's top edge is made flush with the ground and then covered with a rim.

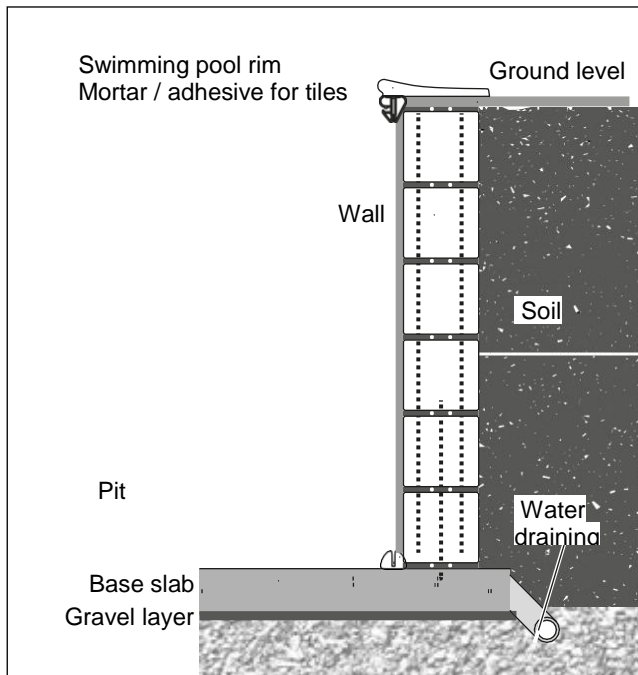


Fig. 8



Important: If the filter system is not located immediately at the swimming pool, trenches for the piping must be excavated simultaneously. The trenches should be about 40–50 cm wide and about 100 cm deep. If the option to completely drain the piping before the winter season exists, the pipes can be laid higher, inclined downwards to the (lowest-lying) draining point.

For this we recommend preparing a large (160 mm in diameter or larger) plastic or similar pipe at the appropriate site.

If required, trenches can also be excavated for piping from the filter system to a solar heating system and for power supply cables.

3.3.2 Base slab

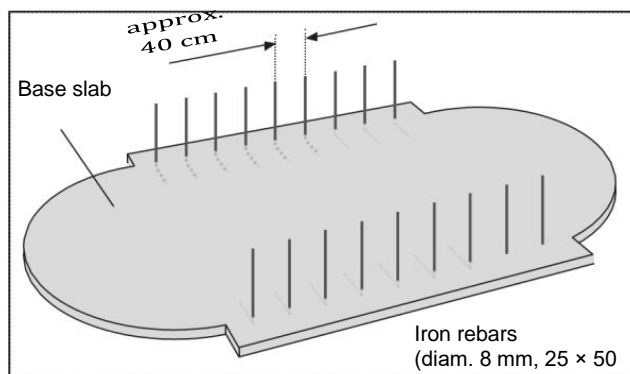


Fig. 9

Once the earth excavating and water draining (after gravel layer laying if necessary) operations have been completed, the concrete base slab (C16/20) with reinforcement (Q188A construction steel mesh) is fabricated. The recommended base slab thickness is about 15 cm: the actual thickness (and the gravel layer thickness) should be determined by a specialized civil engineer.



The base slab should be laid precisely horizontally, with no gradient, and its edges should overreach the swimming pool edges by some 10 cm.

Base slab dimensions

Swimming pool	Base slab (minimum)
Width x length [m]	Width x length [m]
3.20 × 5.25	3.90 × 5.50
3.20 × 6.00	3.90 × 6.25
3.50 × 7.00	4.20 × 7.25
4.16 × 8.00	4.86 × 8.25
4.16 × 10.00	4.86 × 10.25
6.00 × 12.00	6.70 × 12.25

Once again, the base slab can be rectangular or circular/oval (copying the swimming pool shape).



Important: Embedding the steel reinforcement immediately into the wet base slab is recommended. The reinforcement consists of 8mm construction steel bars with bends, laid at a spacing of approximately 25 x 50 cm.

Best take one of the hollow blocks to be used for the retaining wall and imprint the patterns of the later wall into the wet concrete. Put a bent steel rebar centrally into each of the now visible internal chambers of the imprints (Fig. 10).

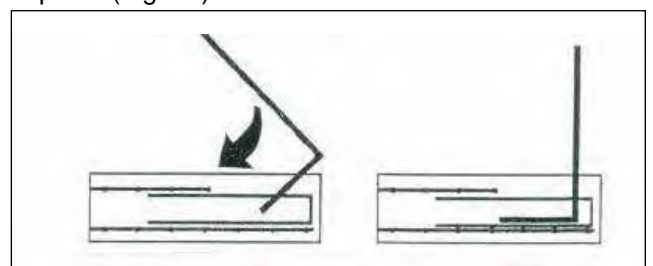


Fig. 10

3.3.3 Building the retaining walls

Once the base slab can be walked on, the two side retaining walls should be built. Fill each row of hollow blocks with concrete (C16/20) and reinforce both vertically and horizontally with construction steel rebars (8 mm diam.). While bricklaying, avoid shifting the joints or disturbing the verticals and straight lines or the precise parallel orientation of the two retaining walls.

The retaining wall height depends on the swimming pool height – see the sketches.

For a safe fastening of the steel wall to the retaining wall, best make the top 1 to 2 rows by using full blocks, such as bricks, because (as experience shows) such blocks will hold the installation screws better than hollow blocks do. If fastening into filled hollow blocks is planned, best use very long screws that will reach the concrete core.



Warning: Consult a civil engineer-specialist. Mountfield will take no responsibility for installation errors or damage resulting from a poorly constructed retaining wall!

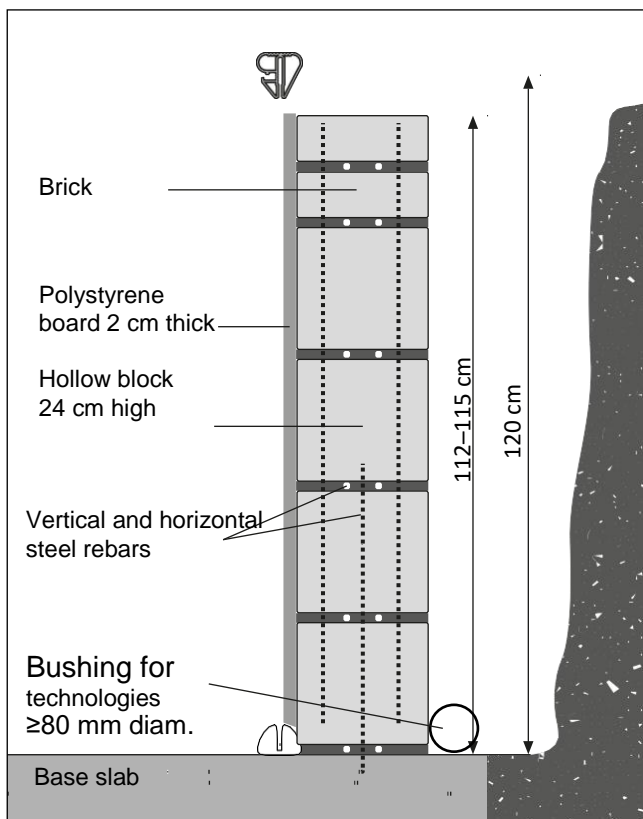


Fig. 11

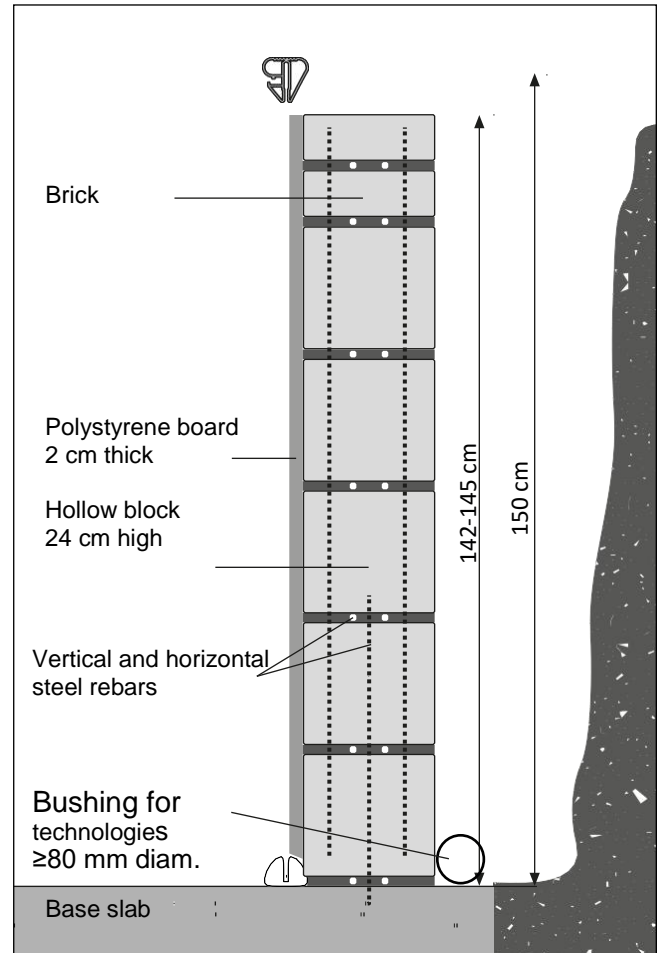


Fig. 12



Warning: Respect the concrete setting time (typically 28 days). Only a civil engineer-specialist may decide (on his/her own responsibility) that this time can be shortened .

The wall height (measured from the top edge of the base slab) must NOT exceed 115 cm / 145 cm for swimming pool height 120 cm / 150 cm, respectively, or the top edge trim cannot be installed properly.

Fix the polystyrene boards 20 mm thick to the internal side of the retaining walls by using an adhesive for polystyrene. A 25 mm offset above the base slab must be left free for the bottom edge trims (Fig. 13).

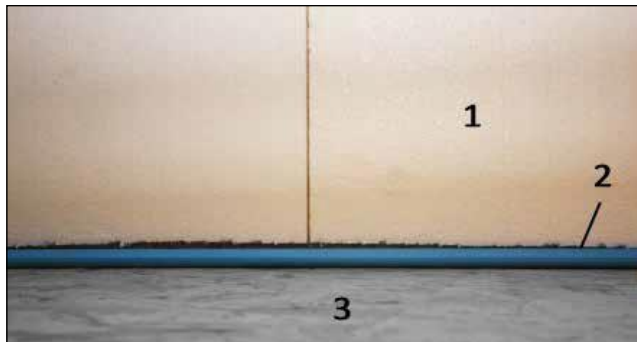


Fig. 13

- 1) Polystyrene board
- 2) Bottom edge trim
- 3) Base slab



Important: If swimming pool lights are planned to be installed, openings for this installation must be made/prepared during the retaining wall building process. Follow manufacturer's instructions.

4 Swimming pool installation

4.1 Circular swimming pool installation

Depending on the swimming pool size, its installation is a job for 3–4 persons and should be made in windless conditions. The use of gloves during the steel wall construction is recommended.

First, draw the swimming pool contour on the ground. This will immensely facilitate the swimming pool siting and installation procedures. For this, fasten a string to a nail driven into the centre of the future pool and measure the radius (= one-half of the diameter). Use a piece of chalk or a bricklayer's pencil to mark the radius measured with the string – see Figs. 14 and 15: The bottom and top wall edge trims are provided. You will find them inside the coiled steel wall.



Fig. 14



Fig. 15

4.1.1 Installation of the bottom wall edge trims

Combine the bottom edge trim segments (approx. 20 mm wide) into one unit by means of the joining tubes and put the closed swimming pool contours on the ground. Proceed by following the ground plan. Check precisely the dimensions and symmetry.



Professional hint for the installation of the bottom edge trims (and later also the top edge trims): Combination of the segments into one unit will be much easier if the pins are greased.

For this, insert a pin into one segment, grease the still protruding side (see Fig. 16) and combine the edge trims (Fig. 17).



Professional hint for shortening the bottom edge trims: First combine all the edge trims into one and align as appropriate according to the ground plan. Any overhanging ends should be shortened only when building the steel wall because only then the differences in the dimensions are apparent and can be trimmed as appropriate.

The precise procedure is shown in Figs. 28-30 on page 13.



Fig. 16



Fig. 17



Fig. 18

4.2 installation of an oval swimming pool

First, draw the swimming pool contour on the ground. The semi-circles of the rounding can be best marked by means of a string fixed with the nail in the centre of the future pool. Mark the lines with a bricklayer's pencil or chalk. The swimming pool dimensions, including the radius, are shown in Fig. 7 on page 7.

4.2.1 Installation of the bottom edge trims

First slide the straight bottom edge trim segments (width approx. 20 mm) into one another. Lay the straight parts of the bottom wall edge trim directly in front of the brick wall, into the space in the polystyrene, and centre the edge trims against the brick wall length. The wall is very slightly longer.



Professional hint for laying the straight edge trims symmetrically: Measure diagonally the end points of the edge trims. The dimensions will be identical if the edge trims have been laid symmetrically. See dimension "a" in Fig. 19.

Join the bent bottom edge trim pieces and use them to fill the rounded segments on the front sides. Proceed by following the ground plan.

Check precisely the dimensions and symmetry.



Professional hint for shortening the bottom wall edge trims: First combine all the edge trims into one and align as appropriate according to the ground plan. Any overhanging ends should be shortened only when building the steel wall because only then the differences in the dimensions are apparent and can be trimmed as appropriate. See section 4.4.

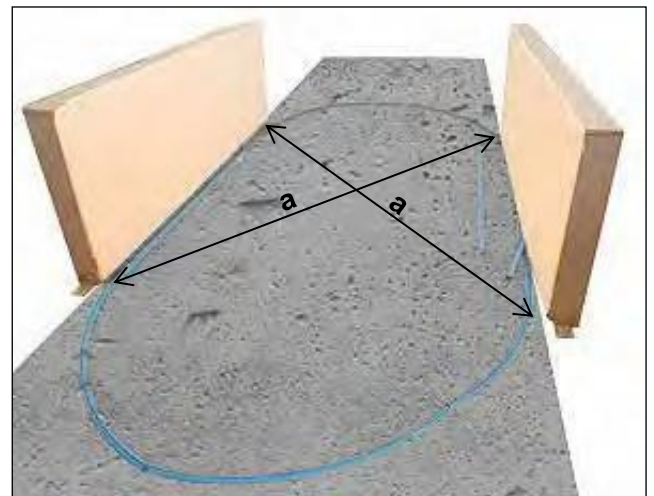


Fig. 19

4.3 Steel wall installation

If you want to be able to get into the swimming pool, you will need swimming pool steps/stairs or a ladder. Later, when installing the liner, be cautious for the construction ladder not to damage the liner.

Furthermore, bring the coiled steel wall into the swimming pool before installing it.

With the assistance of your helpers move the steel wall roughly to the point where the skimmer (surface impurity collector) should be installed and put it onto thick boards and cartons to facilitate its uncoiling (see Fig. 20). When uncoiling the steel wall, do NOT drag it over the concrete foundation, it might get damaged.



Fig. 20



The steel wall is coiled inwards in the factory so the outer side is visible on the coiled steel wall.

So, uncoil the steel wall in the direction in which it has been coiled.

In order to prevent injury, wear gloves when uncoiling and mounting the steel wall and use straps to control the uncoiling process. (see Fig. 21).



Fig. 21

The recess for the skimmer is normally located at the beginning of the uncoiling steel wall (approx. 1–2 m from the front end). If the steel wall is packed in more than one package, it is shown on the boxes which steel wall parts (with which recesses for the structure parts) are included.



Fig. 22



Fig. 23

Uncoil the steel wall and slide it into the edge trims (see Figs. 22–23). The skimmer recess must be positioned as required (as close to the filter system as possible).

The return nozzle is located left of the skimmer (viewed from outside).

If a joining section is present on one side of the steel wall, it must be slid out.

Where large swimming pools are concerned, the steel wall is divided into 2 parts and the joining procedure using the sliding-in section is performed twice.



Important hint: Some segments of the top edge trim may be put on for the steel wall to provisionally keep its shape (see Fig. 24).



Fig. 24

The steel wall of an oval swimming pool may be provisionally fixed to the retaining walls by using screw clamps.



Fig. 25



Fig. 26

Always see to it that the steel wall should stand firmly in the bottom edge trim.

4.4 Processing of the bottom wall edge trims and joining the wall ends with a sliding-in section

The gap between the two steel wall ends should be about 5 mm to enable the sliding-in section to join the steel wall ends together. This must be taken into account when shortening the bottom edge trim.



Fig. 27

Shortening the bottom wall edge trim

Uncoil the steel wall and measure any overhang of the bottom edge trim. Now draw the steel wall by some 50 cm out of the bottom edge trims and shorten the bottom edge trim appropriately (remember that a 5mm gap should be left between the steel wall ends for the sliding-in section – see above).



Important hint: Always shorten the wall edge trim in the arched segment. If it is shortened more than 5 cm, then shortening 2 edge trims is recommended for the sake of arch symmetry – each arch by one-half of the total overhang.

Now put the whole steel wall again on and slide the sliding-in section over (see Figs. 28–30).



Fig. 28



Fig. 29

Depending on the swimming pool type the sliding-on section may have a side bevelled. If this is the case, put the sliding-in section with the bevelled side directed inside and upwards. If none of the sides is bevelled, there is no difference between the top/bottom sides.



Fig. 30

Facilitate the section installation by moving it slightly up and down periodically. The use of a rubber hammer can also be convenient.



Fig. 31

However, if the section is put on incorrectly and/or driven down with too much force, the steel wall may get damaged (and the validity of the warranty may be limited) and the swimming pool stability may be compromised.



Fig. 32



Fig. 33

Covering the internal sliding-in section surface with an adhesive tape is recommended in order to protect the swimming pool liner from damage.

Additional information regarding oval swimming pools: **Steel wall attachment**

It is assumed in this explanation that the retaining wall height is as described on page 9.

In the area of the retaining walls the steel wall must be fastened to the retaining wall edge with screws (at a height of 110 cm or 140 cm from the ground for a swimming pool 120 cm or 150 cm high, respectively). The fastening must be in a horizontal line. Use the screws, wall plugs and try squares provided for this operation (see Fig. 34).



Fig. 34

Drill the holes in the steel wall. Grind the hole edges smooth and coat with an anticorrosion paint.



Fig. 35



Fig. 36



Fig. 37

In this manner the steel wall is fastened directly onto the retaining wall.

In order to protect the swimming pool liner, cover the screw heads with an adhesive tape that will not damage the PVC (with a packaging tape for instance).



Fig. 38



Caution: Make sure that the swimming pool stands perfectly horizontally. Manufacturer's warranty becomes void and null if the height difference is larger than 2 cm. If this is the case, identify the cause and eliminate the problem, e.g. by improving the base.

4.5 Preparation of openings for the accessories

Important: Follow also the accessory manufacturers' guidelines if attached to the products. If in doubt, contact your seller.

4.5.1 Skimmer (to collect any foreign matter from the water surface)



Fig. 39

- 1) Skimmer body 2) Vacuum plate
- 3) Teflon tape 4) Hose adaptor
- 5) Double gasket 6) Nozzle

Openings in the swimming pool steel wall for the skimmer may be present from the factory. If not, they must be cut out/drilled.

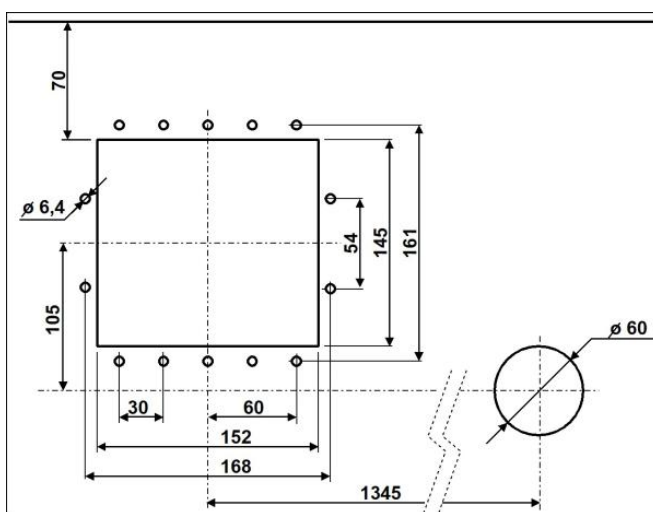


Fig. 40

The sketch above shows the dimensions of a standard skimmer for attachment by using swimming pool hoses 38 mm in diameter. If a different skimmer is to be used, an appropriate template / correct dimensions and spacing must be used.

We recommend that the cutting edges be ground smooth and treated with an anticorrosion product or plastic paint prior to the installation.



Fig. 41

If the piping is to be mounted now, installation of the skimmer at this stage is recommended. For this, put the double gasket over the steel wall (see Fig. 43), hold the skimmer at the opening from the outside and fix it from the inside with rounded head safety screws (see Fig. 45). If 2 individual gaskets have been provided in place of the conventional skimmer double gasket, they must be put on in order: skimmer body – gasket – steel wall – gasket (– pool liner – skimmer flange).

This also applies to the return nozzle gasket(s) (for more information please read page 24, "Internal parts installation").

In certain circumstances it may be necessary to prepare additional holes in the steel wall (and coat them with an anticorrosion paint) because not always are the holes for the screws ready.

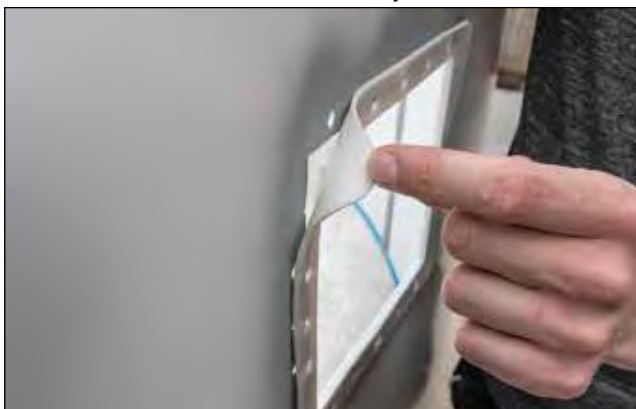


Fig. 42

If installing the piping later is feasible, the skimmer can also be installed later along with the installation of the liner (see page 20).

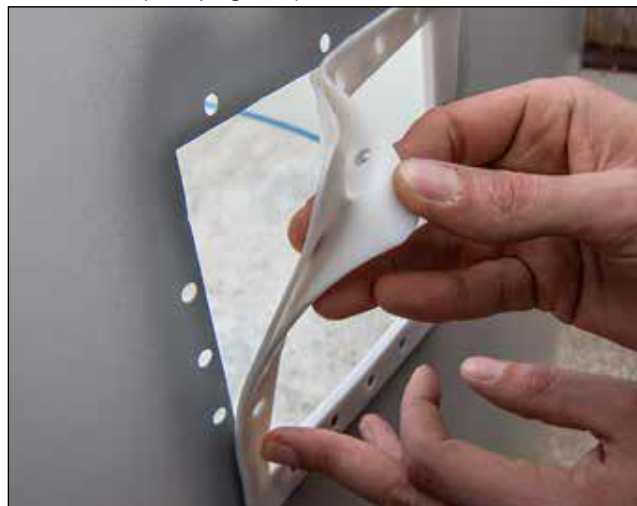


Fig. 43



Fig. 44



Flange screw

Safety screw

Fig. 45



Fig. 46

4.5.2 Return nozzle

The IBIZA swimming pools use normally 1 return nozzle, located next to the skimmer. Here also the cutting edges should be treated with anticorrosion coating.



Fig. 47

4.5.2.1 Return nozzles for fixed (buried) piping



Important! The nozzle bodies must be used now, prior to the installation of the liner, because they are specific high-quality return nozzles with a flange on the swimming pool side, which – in contrast to conventional nozzles – facilitate appreciably any later liner replacement.

The flange ⑦ is needed for the final nozzle installation. If the nozzle flange cannot be found promptly, it is probably inserted into the cover ⑥. Compress/bend the cover slightly to separate the flange and mount the flange (see Fig. 48).



Fig. 48



Fig. 49

- | | |
|---------------------|---------------|
| 1) Adjusting ring | 2) Nozzle eye |
| 3) Nozzle body | 4) Safety nut |
| 5) Screws | 6) Cover |
| 7) Flange | 8) Gasket |
| 9) Hole-less gasket | |

If the return nozzle is completed with an additional hole-less gasket ⑨, this gasket is not used for swimming pool with steel walls.



Fig. 50

Fix one of the self-sticking gaskets onto the nozzle body flange frame.



Fig. 51



Fig. 52

Put the nozzle body through the opening in the steel wall from the inside.

Now put on the safety nut on the nozzle thread from the back (outer swimming pool side) and screw it on.



Fig. 53



Return nozzles with hose couplings 32/38 mm are installed only simultaneously with the liner (see page 24).

4.6 Laying protective geotextile padding

The swimming pool should be installed in time or it may collapse. If fast installation is impossible, e.g. because of bad weather, we recommend that the padding should not be used for the time being and the swimming pool wall should be mechanically secured against any strong wind.

The use of protective geotextile padding or a protective paulin is recommended to protect the pool liner against direct contact with the substrate and any materials in it that might potentially damage the PVC. Remember, however, that a protective geotextile pad can only protect but not make for any surface unevenness.

The substrate must be cleaned thoroughly before laying the padding.

In some cases the padding has been cut already to match that of the swimming pool. If the padding was delivered in rolls, lay it in strips and fix with an adhesive tape.



Fig. 54



Fig. 55

Cut the padding approximately 10 longer than the swimming pool dimension and let it overreach around the swimming pool wall to a height of some 5 cm. Cuttings can be used for minor side areas. Draw the overhanging edges over the bottom wall edge trims and fix to the steel wall with an adhesive tape.



Fig. 56



Fig. 57

Smooth the padding and join the adjacent strip edges together also with an adhesive tape.



Professional hint for laying the padding: Subsequently, small wedges at a spacing of 20-25 cm must be cut out of the padding edge in the oval segment in order to remove any excess material (see Figs. 58–59).



Fig. 58



Fig. 59



Fig. 60

Any folds in the padding from the transport and storage will get smooth eventually under the pressure of the swimming pool water.

4.7 Hanging the pool liner and installing the top wall edge trim



Caution: Install the pool liner at +15°C to +25°C. Avoid exposure to strong solar radiation!

If the temperature is too high, the plastic material is soft and elastic and the liner is too large. If the temperature is too low, the plastic material is hard and inelastic and the liner is too small (the size differences can make up to 50 cm!).

If the padding is present on the pool bottom, enter the swimming pool only in clean shoes or in socks. Also, the entire internal swimming pool area should be cleaned again (with a vacuum cleaner for instance, Fig. 61).



Fig. 61

Now put the liner in the centre of the swimming pool and spread it so that the outer floor seams should be equally far from the steel wall because the plastic material is soft and elastic and the liner is always somewhat smaller than the swimming pool itself.



See to it that the perpendicular weld should not be in the area of the skimmer, return nozzles or lights or else leaktightness cannot be guaranteed.



Caution: Enter the swimming pool with the liner inside only barefoot or in suitable footwear.



Fig. 62



Fig. 63

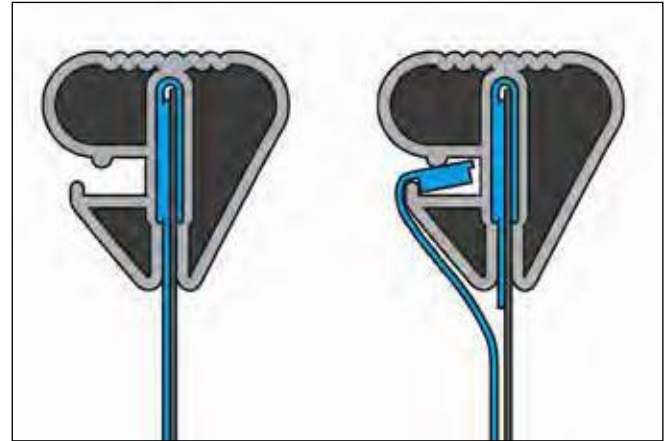
Irrespective of the top wall edge trim, the pool liner has its own suspending edging (see Fig. 64).



Fig. 64

Notes on the top wall edge trim:

The wedge-shaped side rabbet on the specific top wall edge trim will be used later when the liner is replaced if a hem is laid on the top wall edge trim. For this, the old liner is cut off and the remaining suspending profile continues to be used to protect the edge. Only the second liner, which has a wedge section rather than a suspending section, will be hung into the rabbet in the top wall edge trim.



(Example of a specific combined top wall edge trim)

Put the edge of the liner with the welded-on suspension section over the steel wall edge and fix the liner with a few parts of the trim (see Figs. 65–67).



Fig. 65



Fig. 66



Fig. 67

Complete the top wall edge trim installation only after smoothing the liner welds.

4.7.1 Installation of the top wall edge trim (general)

Combine the top wall edge trim parts together by using joining pins and by impacting on the swimming pool edge with your hand or with a rubber hammer. At the same time fasten the suspension section. If the top wall edge trim is too long, shorten it (see Fig. 68–70).



Fig. 68



Fig. 69



Fig. 70



Professional hint: The delivery of the top aluminium rail includes 2 plastic covering strips. It may happen during the swimming pool filling that a major gap emerges on one or the other side of a segment of the top rail due to steel wall expansion. Once the swimming pool is complete, use the strips to cover such places.

Cover the plastic top wall edge trim joints with aluminium strips (if provided).

4.7.2 Smoothing any folds



If vertical folds occur on the wall part of the liner, they can be eliminated by displacing it if a partly fixed top wall edge trim is present.

Move the folds starting from the ground outwards toward the swimming pool wall. In particular, see to it that the liner weld lies between the pool bottom and wall precisely in the swimming pool bottom/wall corner. Before filling the swimming pool with water, the liner welds should everywhere be identically far from the swimming pool edge and have no folds or creases as far as possible. Since the pool liner has been fabricated to be somewhat smaller than the swimming pool size, so as to take account of expansion due to the effect of temperature and water pressure, it is imperative that the pool bottom seams are uniformly offset from the swimming pool wall.



Fig. 71



Fig. 72

Following final installation of the top wall edge trim, correction of any remaining folds on the pool bottom can be made by filling the pool with a 2cm to 3cm water layer and displacing the folds outwards.



Fig. 73

If folds on the wall cannot be smoothed::

Wait for a water layer 20–30 cm thick. If the problem persists, partly take off the trim (step by step, never completely!) and displace the liner to the side to reduce any folds or remove them as much as possible. In this case the liner must be adequately secured with the top wall edge trim to prevent the liner from sliding down into the swimming pool. If all those measures fail, that is, the folds are intolerably large, the only way out is to start a completely new attempt to install the liner.



Professional hint: A conventional vacuum cleaner can be used to smooth the sheet around walls.

The vacuum cleaner hose mouth must be wrapped with geotextiles (which must be fastened to the hose with an adhesive tape) to prevent the hose from sticking to the plastics. Push the hose end through the opening in the skimmer and further on behind the liner. Put a carton with a hole onto the skimmer lid and push the hose through it and make this assembly tight with an adhesive tape. This system will only work if all the remaining openings, i.e. the return nozzle holes and the skimmer holes, are blinded from the outside with adhesive tape. Now activate the vacuum cleaner to roughly one-half of the maximum power. Air will start to be aspirated and the plastic sheet will tighten slowly. What remains to do is only to smooth out the folds arising from the sheet storage in the box.



Fig. 74

4.8 Installing the parts to be built in

If the water surface is approximately 20 cm below the respective part, you can start trimming and installing (or completing the installation) of the parts to be built in.

4.8.1 Return nozzle

For attaching a hose 32/38 mm (see Fig. 76):

When the plastic swimming pool sheet is smooth, cut it just in front of the opening in the wall for the return nozzle (the cut-off part should be 5-10 mm smaller than the opening in the steel wall). Then put a gasket between the sheet and the steel wall and pass the nozzle with the second gasket through the opening so that gaskets are present in front of and behind the plastic sheet. Now tighten the nozzle with the safety nut on the outer side of the swimming pool.



Important: If a double gasket has been provided, separate it in the middle to obtain two separate gaskets (see Fig. 75).



Fig. 75



Fig. 76

For fixed piping 50 mm (see Fig. 77):

Once the plastic pool sheet is smooth, make holes for the screws, with an awl for instance (see Fig. 79). Fix the other gasket behind the flange so that it is positioned between the liner and the flange. Tighten the flange screws transversely.

Now cut out a hole in the liner copying the opening (see Fig. 83). Re-tighten the nozzle eye and adjusting ring and put on the cover.



Fig. 77



Fig. 78



Fig. 79



Fig. 80



Fig. 81



Fig. 82



Fig. 83

4.8.2 Skimmer

Punch the holes for the screws and then screw on the flange by the crosswise pattern.

If the skimmer body was installed together with the liner only now, put the double gasket into the opening in the steel wall, hold the body from the outside and make the openings for the screws on the inner side and screw on the flange crosswise.

Now cut out the opening for the skimmer and put on the flange cover. The top of the flange and the top of the cover are normally marked "Top".

Insert the flap and sieve into the skimmer.



Fig. 84



Fig. 85



Fig. 86



Skimmer basket:

When using the pool, the skimmer basket must be freed from impurities and tree leaves periodically for the filter system to work perfectly. To this end – and also for vacuum cleaning of the pool bottom – the skimmer cover must be readily accessible. Make sure that the skimmer basket sits well, is not lifted and does not block the skimmer flap and hence, the water flow (see Fig. 88).



Fig. 88

Use the suction plate only in combination with the pool bottom cleaner hose, not during the normal filter operation!

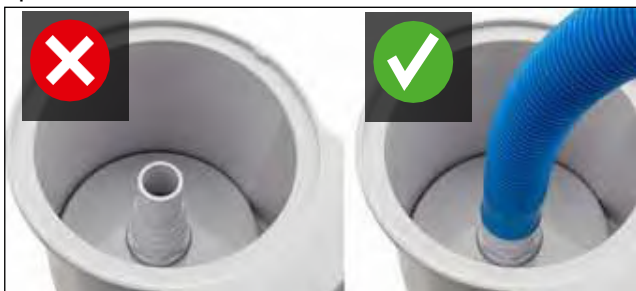


Fig. 89

4.9 Complete the technology installation procedures

Prior to filling the swimming pool completely with water and completing the full installation, the various parts of the technology (skimmer, return nozzle, lights, countercurrent, ...) must be (inter)connected. The piping should be stiff or flexible, with a PVC pipe resistant to the pressure of the earth and to the pressure of water. All connections should be accessible for inspection or be certified against leaks. Installation of a return flap in the filter pump suction segment is recommended if the filter unit is installed above the water surface level in the swimming pool. Electrical cables should be drawn through ducts to the site where the machine room/distribution box will be installed.

5 Dry concrete around the swimming pool

Dry lean concrete should be poured around a circular swimming pool to fill completely the inground part. For oval swimming pools it is sufficient to pour the concrete around the two front sides and rounded pool parts. No lean concrete needs to be poured behind the retaining walls. Once the installation is complete, fill the swimming pool with water. A circular swimming pool can be completely filled. An oval swimming pool should be filled stepwise along with the outer filling.

Prior to pouring concrete, put a construction sheet and polystyrene boards 15-25 mm thick into the ground at the rounded pool segments to protect the outer side of the steel wall.

Pour several layers (each ≤ 50 cm high) of wet lean concrete C8/10 (or in the mixing ratio of approximately 1:10 depending on the gravel grain size) around the swimming pool wall. Each layer must set before a next layer is added. Formwork panels or the like can be used to confine the concrete layer sides. Once the layer has set, the panels are put upwards for confining the next layer.

While the concrete is poured around the rounded faces of an oval swimming pool, earth must also be poured and compacted behind the retaining walls to help the brickwork absorb the pressure of the water. The concrete must not be too wet and must not be shaken or compacted.

Where natural soil (e.g. cohesive clay) is present, the concrete must be ≥ 15 cm thick.

Concrete thickness approximately 30 cm is recommended for calibrated soils.



Professional hint: As an alternative to concrete pouring, the rounded parts of the swimming pool can be surrounded with brickwork and the outer space can be then backfilled with soil and compacted.



Where poured concrete is used, the water level must be ≥ 30 cm higher than the outer concrete filling in order to absorb the external pressure.

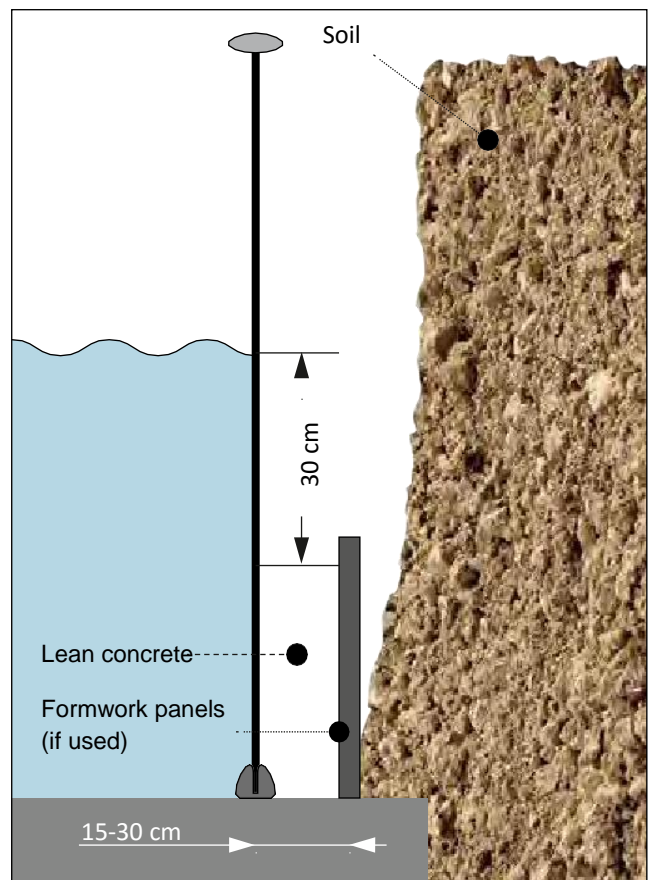


Fig. 90

While pouring concrete around the swimming pool, make sure that the swimming pool is not deformed by the pressure of the concrete.

Also, avoid too much concrete pressure on the skimmer, this might result in distortion and jam of the skimmer flap. Use of, e.g., polystyrene around the skimmer is recommended to absorb the pressure from the concrete at that point. Also, avoid damaging the steel wall, any damage may result in steel corrosion later. Also, the warranty would become void and null. If any scratches and other flaws are present on the steel wall, treat them with an anticorrosion agent promptly.

6 Miscellaneous

6.1 Water level and skimmer flap

Water level in the swimming pool must be set according to the skimmer opening. The centre or up to two-thirds of the skimmer opening is optimal (see Fig. 91). At any rate, avoid too low a water level, the filtration pump might get damaged. Also, the skimmer flap must be freely movable at any times and the skimmer basket must sit well, otherwise water flow might be precluded.

The suction board can be put on the system – hose of the pool bottom cleaner (see later) – only when removing dirt and impurities from the pool bottom.

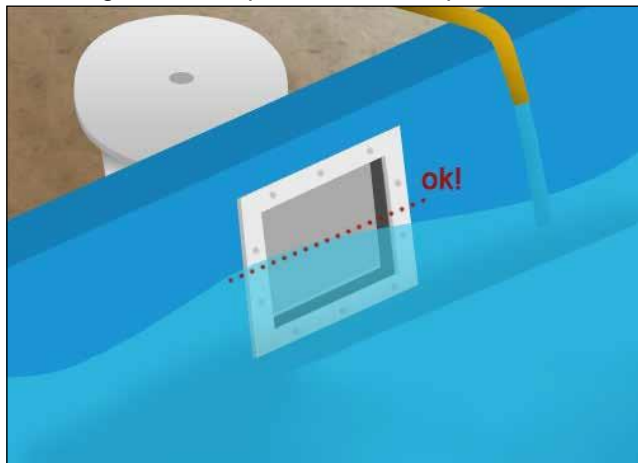


Fig. 91

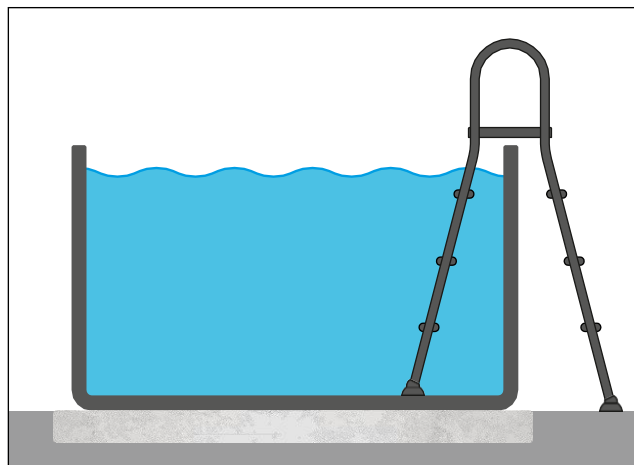


Fig. 92

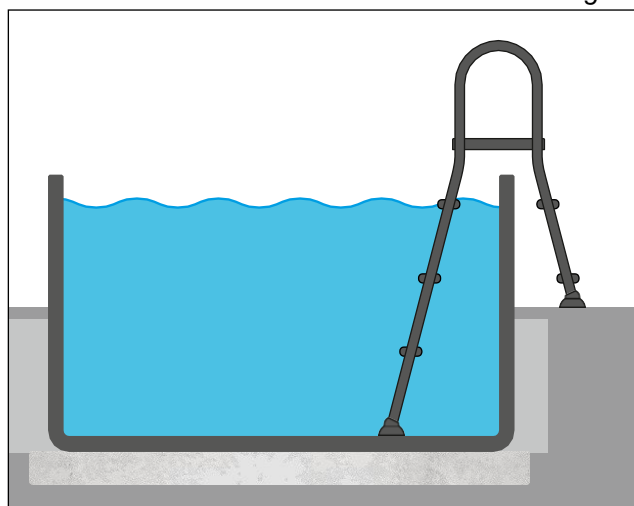


Fig. 93

6.2 Entering the swimming pool

A swimming pool must have a system – stairs or a ladder – enabling the visitor to get into the pool easily and safely. Stairs can be designed either for inground/semi-inground swimming pools or for above-ground (partly or fully free-standing) swimming pools:

6.2.1 Stairs for an above-ground swimming pool

Stairs for above-ground swimming pools are recommended if your product pool is a free-standing or semi-inground swimming pool. Where needed (for semi-inground swimming pools), such stairs can be shortened by sawing off a part of the stairs with a clean hacksaw, etc. Deburr the cutting edges. Then put the adjustable feet on the stair ends.

Follow the instructions for stairs assembly and use.

6.2.2 Stairs for an inground swimming pool

Two methods exist to install high-grade steel stairs for inground swimming pools. Follow the procedure described in the instructions for installation.

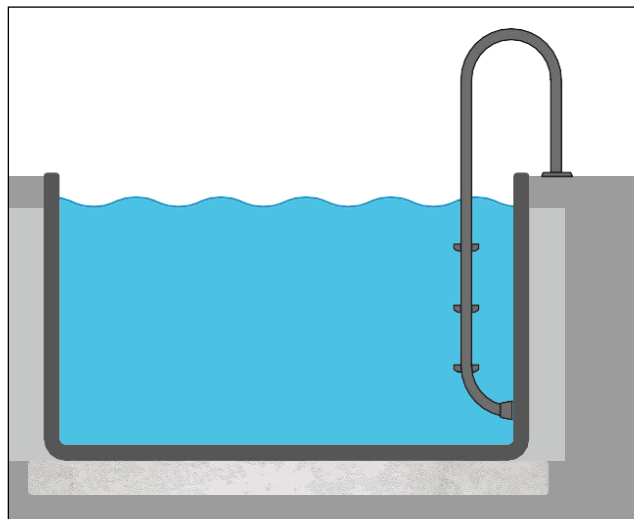


Fig. 94

6.3 Advice for using the swimming pool

- Shower and clean your soles before entering the swimming pool. Do not wear shoes in the swimming pool, the vinyl sheet might get damaged.
- Use stairs to leave the swimming pool.
- Maintain the water level at the prescribed height, approximately in the centre of the skimmer flange. Remember that water evaporates from the swimming pool at any weather and must be made up. Natural evaporation is normal, do not mistake it for water leak.
- Inspect the swimming pool and accessories periodically to detect any true water leak. If any leak is detected, tighten the coupling(s) or add a gasket / replace the gasket.
- Good care of the water in the swimming pool is prerequisite for maintaining the swimming pool in good condition.
- Water temperature in the swimming pool should not exceed 30°C, the optimum temperature is about 25°C. Too warm water will not refresh you very much and, in addition, will reduce the efficacy of the sanitation agent (chlorine) and create good conditions for the growth of algae. Also, the liner gets softer in warm water and creases form easily on it. If the water in the swimming pool reaches 30°C, stop using the water heating system, remove the paulin and, if appropriate, replace a fraction of the warm water with colder water.

6.4 Liner repair

Pool liner defects can be repaired readily by using the repair kit for use in water.

6.5 Maintenance

Water in the swimming pool will be clean and clear at all times if a combination of mechanical and chemical water treatment methods is applied.

Mechanical water treatment:

Minor impurities such as pollen, grass and hairs will be removed by the skimmer and the filter system. Use a net and/or the pool bottom cleaner to remove coarse impurities and foreign matter.

A filter system and a skimmer must be available for manual pool bottom vacuum cleaning. Rinse and flush the sand filter thoroughly prior to starting the manual cleaning process.

Manual vacuum-driven removal of impurities from the pool bottom:

A "vacuum cleaning board" is normally provided together with the skimmer. You will need a vacuum cleaning brush, telescopic pole and suction hose (to attach the brush to the board).

Attach the hose and telescopic pole to the vacuum cleaner brush. Fill the suction hose with water and

attach to the vacuum cleaning board. Put the board onto the skimmer filter basket. Set the sand filter system to "Filtration", the filter system will switch on and you can start the cleaning procedure.

Make sure that the suction hose is completely filled with water, avoid aspirating air into the pump!



Professional hint for suction hose deaeration: To achieve complete air removal from the suction hose for manual pool cleaning, the hose can be held for a short moment at the return nozzle while running the filter system. The water flow will purge any air from the hose, and once no additional bubbles leave the other hose end/suction brush, the hose is completely free from air and the filter system can be switched off.

If, despite this, some air gets into the sand filter system, the swimming pool pump must be switched off and deaerated again (the filter system is normally deaerated automatically). When cleaning the pool bottom, move the brush slowly and uniformly – too fast motion could stir the impurities and you would fail to reach them. A skimmer with a filter basket is required if the sand filter system has no prefilter!

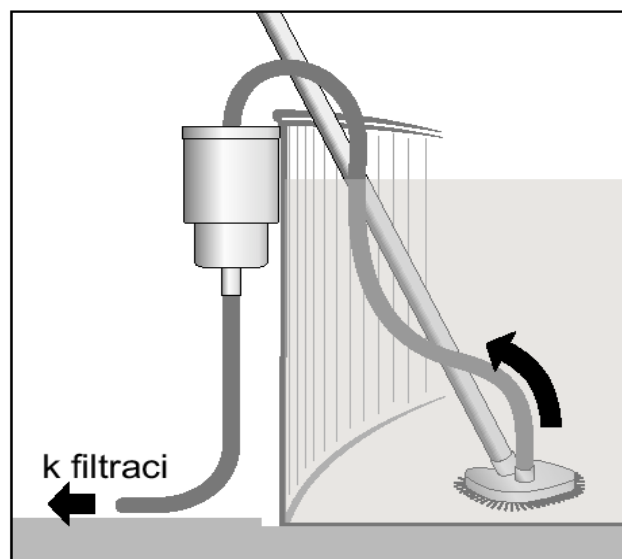


Fig. 95

If the filter performance is lower than expected, this may have one or more of the following reasons:

- 1) Filtering sand is dirty. → Clean the filter.
- 2) Pump aspirates air (air bubbles in water from the return nozzle). → Defective hoses, inspect the hose clamps
- 3) Too little water is fed to the skimmer. → Inspect the water level and increase if appropriate
- 4) Skimmer basket is dirty. → Clean the skimmer basket
- 5) Basket of the filter pump prefilter is dirty. → Clean the basket

Chemical water treatment:

No general instructions regarding dosage or the treatment regime can be provided for water treatment with chemical products. The situation of each swimming pool is different with respect to the swimming pool nature, number of visitor, surrounding environment, climatic conditions, etc. Dosage is governed by actual parameters measured. It is convenient to use a kit for measurements of the pH, free chlorine and any other active compounds. Knowing those parameters, one can dose the chemical products precisely as needed. The hazard of unnecessary exposure of humans to chemicals is then minimised. Follow these guidelines:

- Consider the appropriateness of the product and its use patterns when selecting a chemical agent
- Store the swimming pool chemicals OUT OF THE REACH OF CHILDREN, in a cold, dry a dark place.
- Read the first aid measures for each chemical, follow safety guidelines and safety instructions on the labels.
- Follow manufacturer's instructions when applying the chemicals. Follow personal hygiene habits when handling the products. Wash hands after finishing.
- Do not put any chemical products into the skimmer sieve. When applying chlorine agents in the form of tablets, best use a dedicated float or a chlorine dispenser. If you buy a float, insert the appropriate number of tablets into it and let it float on the water. The chlorine will be dispersed throughout the entire swimming pool faster if the filtering system is ON. Once the product has dispersed, remove the float and store it at a safe place. If you wish to use the swimming pool before the product has dissolved, remove the float and store it at a place where no injury, harm or damage can occur. Take special care to hide it from children.
- Do not use the swimming pool while applying any chemical product.

6.6 Preparing for the winter season

All inground swimming pools must remain partly filled with water during the winter months in order to compensate external pressure.

Initial pH should be set at 7.0 and any water haze or presence of algae should be eliminated by shock chlorination.

Subsequently, lower the water level approximately 10 cm below the return nozzles and drain (remove) any water from the piping and the filter system thoroughly. The input nozzles can be closed by means of winter valves.

If point light are built in the swimming pool, water level should be either below them or above them.

Add some protective product for the winter season in order to lower temperature. Using dedicated cushions is recommended to counteract ice pressure on the swimming pool walls.

7 Safety rules

General safety measures:



Never leave children alone in or near a swimming pool, instruct them about potential dangers. Teach children to swim. Cover the swimming pool when not in use. Enter the swimming pool very slowly after meal or sun tanning. Your blood circulation system or heart may fail!



Immediate aid after an accident during swimming: Get the victim(s) out of the pool immediately. Check heart rate and breathing. If needed, apply mouth-to-mouth breathing and indirect heart massage. Call medical rescue service.

Warning: Do not make any changes of the swimming pool and/or interventions into the structure of the assembled swimming pool filled with water. The swimming pool may collapse or cause severe injury.

Technical safety guidelines:

- Before using the swimming pool please read all information thoroughly and ask questions if anything is not clear to you. Follow the recommendations. They are intended to ensure your safety and the safety of other people in the swimming pool. Please keep this document at a safe place in case you need it later.
- One introductory remark: The text that follows describes the most typical risks associated with the use of swimming pools. Additional risks may also exist. So: Use common sense while doing any activities in or near the swimming pool.

Safety of non-swimmers:

- Always be sure that non-swimmers and persons with a reduced ability to swim – small children in particular – are under the surveillance of a person who can rescue them and call help in emergency.
- In order to avoid misunderstanding in communication: Appoint a person who can help and who will monitor and supervise the swimming pool constantly while in use.
- Non-swimmers and persons with a reduced ability to should use personal protective equipment when entering the swimming pool.
- Remove any toys from the swimming tools and its surroundings if the swimming pool is not used or monitored, so children will not be attracted by them.

Safe access to the swimming pool:

- If the swimming pool access device – stairs – cannot be lifted or lowered to prevent children from entering the swimming pool unattended and protect them from drowning, best use a dedicated safety device for this purpose.

Safety device:

- A safety device can prevent children from entering the swimming pool unattended and from drowning. It also prevents other unauthorised persons from entering the swimming pool. So we recommend that you should not try to do without such safety accessories. Depending on the individual circumstances, such devices can include a fence, covers with specific protection against injury, roofing or an alarm system.
- It is also worthwhile to secure the doors and windows of your house as well as the land plot against intruders who might want to use your swimming pool without your consent.
- Please remember that: Protective equipment can make the swimming pool safer but it can never substitute supervision of children by an adult who can help in emergency.

Rescue equipment:

- Keeping rescue equipment (such as a rescue ring) at the swimming pool in case of emergency is recommended.
- Make sure that a telephone in good order and a list of emergency telephone numbers are available near the swimming pool in case help must be called in emergency.

Safe use of the swimming pool:

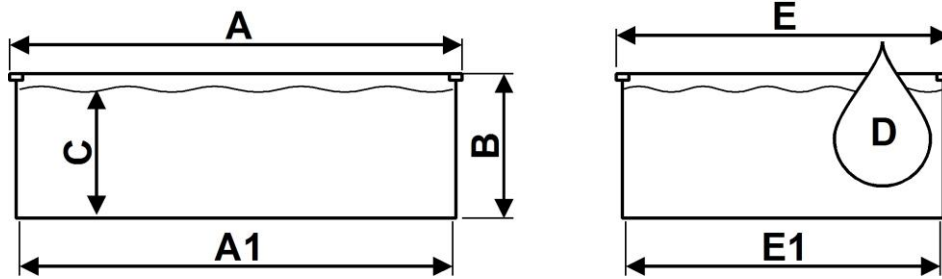
- Encourage all swimming pool users, notably children, to learn to swim.
- Learn the first aid principles (cardiopulmonary resuscitation) and brush up your knowledge periodically. This may save lives in emergency.
- Instruct all swimming pool users, including children, beforehand what to do in emergency.
- Never jump into shallow water. This may result in a severe injury or death.
- Do not use the swimming pool if you are under the influence of alcohol or medical drugs that may affect your ability to use the swimming pool safely.
- If your swimming pool is fitted with a cover: Make sure that the cover has been completely lifted/removed from the water surface before using the swimming pool.
- In order to protect the swimming pool users from diseases transmitted by water see to it that the water is maintained clean and hygienically safe. Follow the guidelines and instructions in the instruction for use of the water treatment products.

- Keep all chemicals and water treatment products/cleaners/disinfectants out of the reach of children.
- Keep detachable stairs on a horizontal surface when not in use.
- Protect the swimming pool users from diseases caused by harmful water. Maintain water in the swimming pool harmless and follow personal hygiene principles.

Put a warning sticker near (within 2 meters) the place where the swimming pool is normally entered/left. Remember that the swimming pool is not deep enough to allow safe jumping into, the injury hazard exists.



Approximate swimming pool dimensions and water volume



Swimming pool type	A1 [cm]	A [cm]	B [cm]	C [cm]	D [m³]	E1 [cm]	E [cm]
Ø 3,6 x 1,2 / 1,5 m	Ø 360	Ø 364	120 / 150	105 / 135	10.7 / 13.7	-	-
Ø 4,0 x 1,2 / 1,5 m	Ø 400	Ø 404	120 / 150	105 / 135	13.2 / 17.0	-	-
Ø 4,6 x 1,2 / 1,5 m	Ø 460	Ø 464	120 / 150	105 / 135	17.5 / 22.5	-	-
Ø 5,0 x 1,2 / 1,5 m	Ø 500	Ø 504	120 / 150	105 / 135	20.6 / 26.5	-	-
Ø 6,0 x 1,2 / 1,5 m	Ø 600	Ø 604	120 / 150	105 / 135	29.7 / 38.2	-	-
3,2 x 5,25 x 1,2 / 1,5 m	525	529	120 / 150	105 / 135	15.5 / 20.0	320	324
3,2 x 6,0 x 1,2 / 1,5 m	600	604	120 / 150	105 / 135	18.0 / 23.0	320	324
3,5 x 7,0 x 1,2 / 1,5 m	700	704	120 / 150	105 / 135	23.0 / 30.0	350	354
4,16 x 8,0 x 1,2 / 1,5 m	800	804	120 / 150	105 / 135	31.0 / 40.0	416	420
4,16 x 10,0 x 1,2 / 1,5 m	1000	1004	120 / 150	105 / 135	40.0 / 51.5	416	420
6,0 x 12,0 x 1,2 / 1,5 m	1200	1204	120 / 150	105 / 135	67.5 / 87.0	600	604

Swimming pool tightness class: W₂

We wish you a lot of joy with your swimming pool!

Mountfield