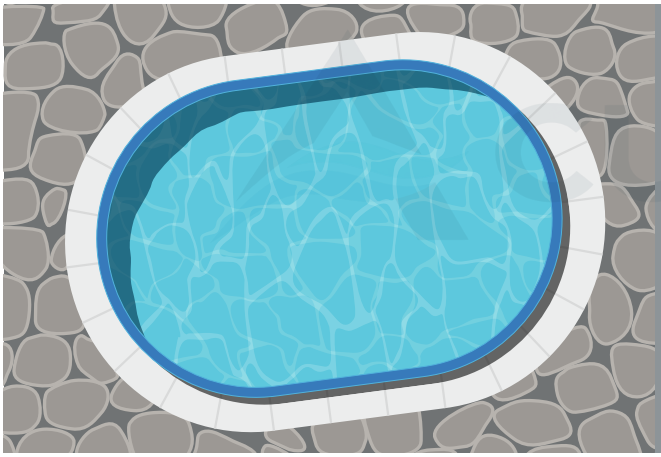
POOLSANA

Pool & Sauna Discount since 2005

Pre-instructions for steel/aluminium wall pools
Oval pool



Example sizes*

3,00 × 4,90 m
3,50 × 7,00 m
4,00 × 8,00 m
3,20 × 6,00 m
3,20 × 5,25

* You will find our current pool range at **www.poolsana.de**

Please note: The assembly steps given in these instructions apply to **oval pools** only!

Please contact us in case of any deviations and uncertainties before you start any construction work.

Safety instructions:

Before building and using a swimming pool, all assembly instructions with safety notes must be read and followed.

To avoid drowning or serious injury, unauthorised access to the pool by persons – especially children under 5 years of age – must be prevented by suitable safety devices.

Non-swimmers and children must be supervised by a competent person. However, all safety regulations and safety devices can only provide support and do not replace your personal duty of care.

You will find more information from page 28.

© POOLSANA GmbH & Co. KG – Version 0022.004 – Reprinting and reproduction prohibited

Contents

1 Important notes 4

1.1 Grounding the pool 4

2 Preliminary information 5

2.1 Pool parts 5
2.2 Basic schematic diagram (symbolic example) 5
2.3 Pool location 6
2.4 Filter system location 6
2.5 Preparing the ground 6
2.6 Pool liner 6

3 Structural preparations 7

3.1 Layout and dimensions of the pool and support wall 7
3.2 Excavation 7
3.3 Concrete slab 9
3.4 Building the support walls 10
3.5 Underwater lighting (optional) 12
3.5.1 PAR56 standard installation niche 12
3.5.2 Compact installation niche 13

4 Pool assembly 14

4.1 Laying out the bottom profile rails 14
4.2 Erecting the steel wall 15
4.3 Adjusting the bottom rails and joining the wall ends 16
4.4 Preparing the connection openings 17
4.4.1 Built-in skimmer (surface skimmer) 17
4.4.2 Inlet nozzles 19
4.4.2.1 Inlet nozzles for rigid piping (for in-ground installation) 19
4.4.3 Compact underwater light (optional) / installation in the pool curve 20
4.4.4 Built-in counter-current unit (optional) 21
4.5 Fixing the steel wall 21
4.6 Laying the underlay fleece 22
4.7 Hanging the liner and fitting the top rail 22
4.7.1 Fitting the top rail (general) 23
4.7.2 Smoothing out wrinkles 24
4.8 Installing the built-in fittings 24
4.8.1 Inlet nozzles 24
4.8.2 Skimmer (surface skimmer) 25

5 Lean concrete backfilling at the curves 25

CUÁTICO

6 Miscellaneous 26

6.1 Water level and skimmer flap 26

6.5 Care and maintenance 27

6.6 Winterizing 27

6.7 Safety instructions 28

CUÁTICO

Assembly and operating instructions for oval pools



Fig. 1

Pool sizes:

3,00 × 4,90 m
3,20 × 6,00 m
4,00 × 8,00 m
3,20 × 5,25/5,30 m
3,50 × 7,00 m

1 Important notes

Please read these instructions carefully in all their points first and observe all notes.

The illustrations and graphics in these instructions are partly symbolic and exemplary representations and serve for general illustration.

Before starting assembly, check that your pool is complete. Check all parts for faultless condition. We cannot accept liability for transport damage claimed on parts that have already been installed. We reserve the right to make changes in the interest of technical progress.

Attention: The oval pool must be sunk into the ground by at least 2/3. In addition, lateral support walls are required,
the height of which must be built as described in these instructions from page 10, even if the masonry protrudes from the ground because the pool stands proud.

As an alternative, we recommend the conZero system, which, thanks to its special support structure,
does not need side support walls or a concrete slab.

You will find further information about the conZero system on our website www.poolsana.de.

Please make sure that only suitable building materials come into contact with the steel wall.

For example, when using silicone, make sure it is acid-free, as otherwise the protective coating of the steel wall will be damaged and rust may form. If necessary, the suitability of the material for the intended purpose must be clarified beforehand.

1.1 Grounding the pool

In accordance with regulations, the pool and all large metallic parts must be connected to the equipotential bonding by a licensed electrical contractor.

For this purpose, you can drill through the steel wall in its lower area (then seal it again with zinc spray or plastic paint) and fasten an earthing cable to a metal screw. From there, the cable is laid to an earthing rod.

Attention: All electrical work must be carried out by a recognised specialist company in accordance with the relevant DIN and VDE regulations
(e.g. DIN VDE 0100 Part 702).

2 Preliminary information

2.1 Pool parts

Individual components of the versions may differ in appearance without their function being impaired.

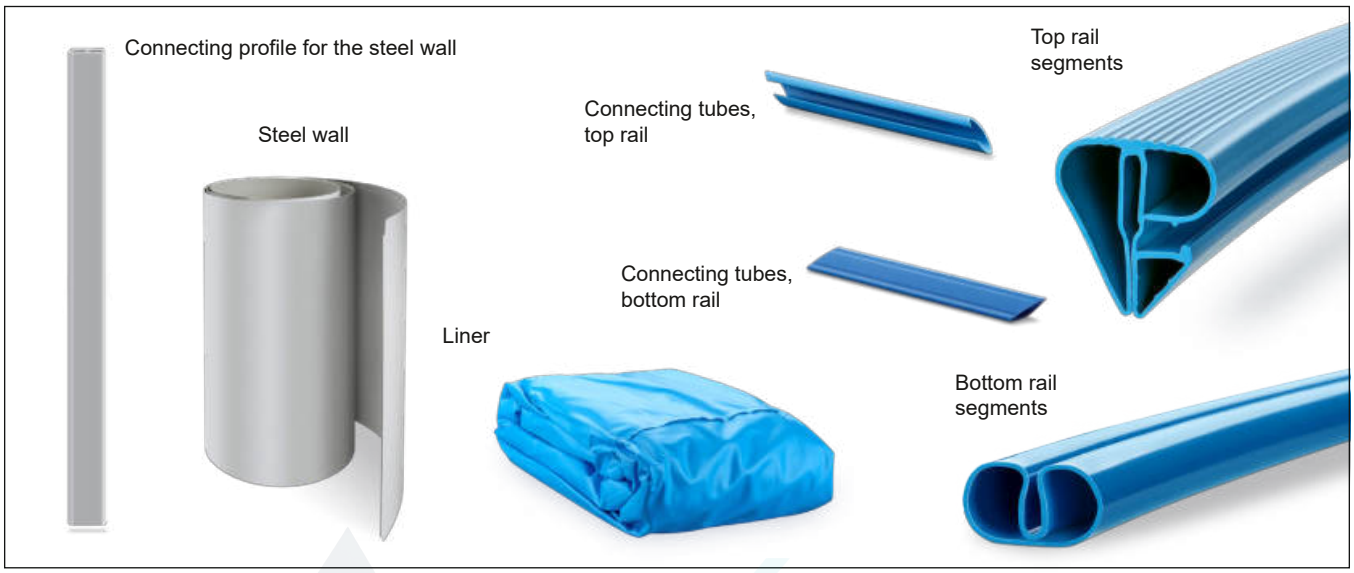


Fig. 2

2.2 Basic schematic diagram (symbolic example)

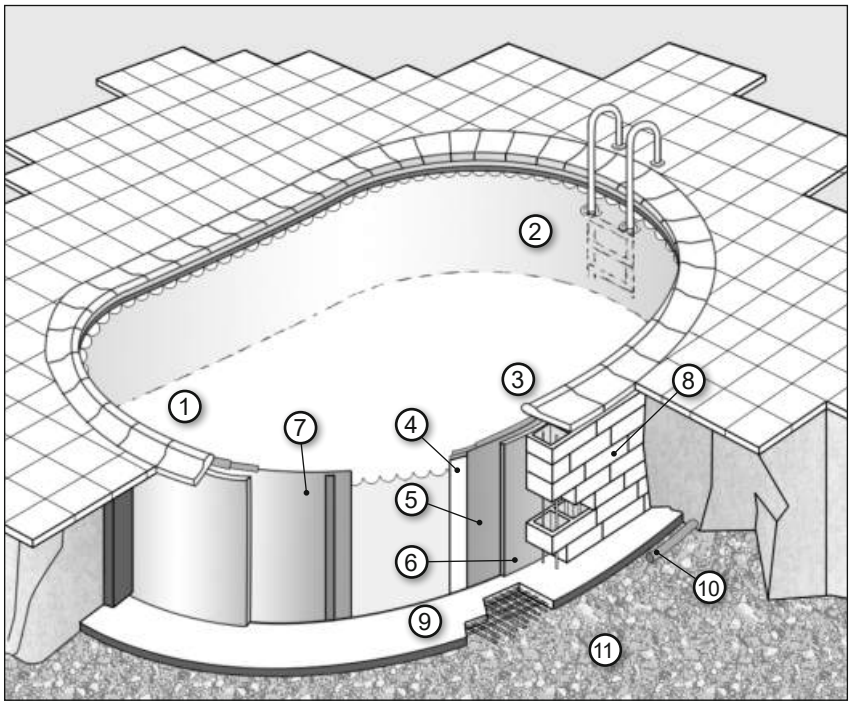


Fig. 3

1) Skimmer side (on some pools the inlet nozzle is also on this side)
2) Nozzle side (possibly also a counter-current unit)
3) Underwater light, if applicable (shining away from the bathing area)
4) Liner
5) Steel wall
6) Construction film + polystyrene
7) Connecting profile, steel wall
8) Support wall (reinforced)
9) Reinforced concrete slab with smooth finish
10) Drainage
11) Gravel (blinding layer)

2.3 Pool location

The pool should be located in the sun if possible, not too far from the house. The skimmer (surface skimmer) should be placed in the main wind direction so that dirt on the water surface is driven towards the skimmer. More important, however, is that the skimmer is fitted on the side closer to the filter system.

If a pool enclosure is planned, it must also be taken into account in terms of space; in that case the pool should preferably not be placed directly in front of the living room window.
More on the structural preparation for an enclosure on page 9.

2.4 Filter system location

The filter system should in principle be placed as close to the pool as possible, whereby it is in turn more favourable to keep the suction line (skimmer line) shorter than the pressure line (nozzle line).
The filter system can be installed as desired in a shaft, in the house or in a garden shed or similar. When it is installed in the house or in a shaft, make sure that a floor drain is provided for any water that may escape. The backwash water must also be drained away, on average about 200 l every 1 – 2 weeks. This can be done via a permanent sewer connection or, if necessary, via a hose that is then led to a suitable drain.

If the filter system is higher than the water level, make sure that the pump is self-priming. The respective manufacturer's information on the maximum suction head must also be observed. The planned heating method also plays an important role when choosing the location of the filter system. If the pool is to be heated with a pool solar absorber system, the filter system should if possible be installed close to the relevant solar absorber location. Even if an air-to-water heat pump that is installed outdoors is planned, it is advisable to place the filter system in the garden as well. With a heat exchanger connection to the central heating, on the other hand, a filter location in the house is almost indispensable.

2.5 Preparing the ground

The site for the pool must meet the structural requirements and be completely level; any slopes must therefore be excavated. On sloping sites, never build up fill!

Slopes must be retained with a support wall.

The pool wall must on no account support the slope!

The ground under the pool should be natural and not filled. Filled ground must be compacted so that the pool does not sink, or more effort must be put into the foundation. If in doubt, consult a construction expert or structural engineer.

Important: Please make sure that the pool is on no account located in the groundwater area. If groundwater occurs already during the excavation at the relevant depth, a construction expert must be consulted and a solution must be found.

A reinforced concrete slab is required as a base (exception: conZero system), usually with a blinding layer/stone bed underneath. A drainage line is also generally recommended.

2.6 Pool liner

The PVC liner of your pool is made of thermoplastic material and is manufactured at the factory with a certain undersize, i.e. slightly smaller than the pool, to allow for expansion due to temperature and water pressure. You should therefore make sure to assemble your pool at outside temperatures of approx. + 15° C to + 25° C. Also do not hang the liner in strong sunshine, but wait until late afternoon to hang it.

If the temperature is too high: the liner is soft, elastic and too large.
If the temperature is too low: the liner is hard, inelastic and too small (because of the material properties, at too low a temperature the liner can be up to Ø 50 cm smaller than the pool size intended for it).

Please make sure that the PVC liner only comes into contact with PVC-compatible material. We therefore generally recommend an underlay of polyester protective fleece (usually included in our complete pool sets).

3 Structural preparations

3.1 Layout and dimensions of the pool and support wall

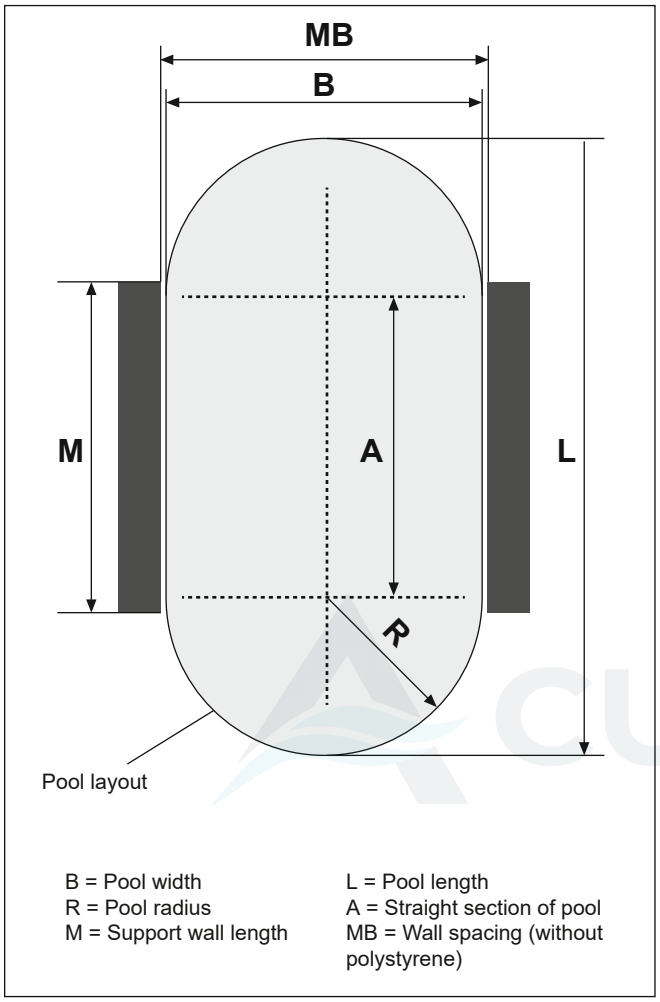


Fig. 4

Pool			Support wall	
B × L(m)	A (m)	R (m)	MB (m)	M (m)
3,00 x 4,90	1,90	1,50	3,04	2,10
3,20 x 5,25	2,05	1,60	3,24	2,25
3,20 x 6,00	2,80	1,60	3,24	3,00
3,50 x 7,00	3,50	1,75	3,54	3,70
4,00 x 8,00	4,00	2,00	4,04	4,20

3.2 Excavation

For pools with 2 nozzles opposite the skimmer:
During excavation, make sure that at least 50 cm of working space is allowed at the curves and along one long side, so that the built-in fittings can later be fitted into the pool wall and piped.

On the other long side, a distance of approx. 30 cm is sufficient (see Fig. 5). **Observe the dimensions of the support walls!** It should already be pointed out here that the later backfilling directly behind the steel walls (except in the area of the support walls) must be done with lean concrete in a thickness of 15-30 cm; you will find more information on this on page 26.

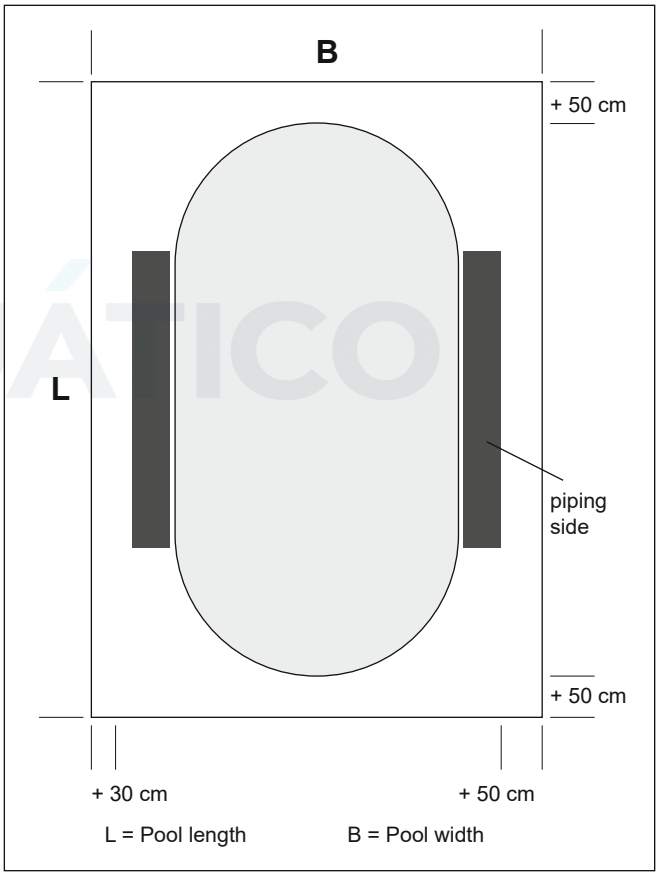


Fig. 5

Recommended excavation dimensions (for pools with 2 nozzles)

Pool	Excavation dimensions
B x L (m)	**B x L (m)**
3,00 × 4,90	4,30 × 5,90
3,20 × 5,25	4,50 × 6,30
3,20 × 6,00	4,50 × 7,00
3,50 × 7,00	4,80 × 8,00
4,00 × 8,00	5,30 × 9,00

On one long side, more space must be provided for the piping, as shown in the sketch. This can be either the left or the right long side, depending on local conditions (e.g. the location of the filter system).

For pools with one nozzle located on the same end side as the skimmer, so that the piping runs on one end side only, a distance of approx. 30 cm on both long sides is sufficient. The distance for the excavation on the opposite end side can also be reduced to 30 cm.

For simplicity, the excavation pit is usually dug rectangular. Of course, it can also be dug following the outline of the pool (with the appropriate distance).

The depth of the excavation pit depends on the thickness of the concrete slab and the blinding layer (stone bed), as well as on the pool depth and the pool's projection above ground.

The formula is:

Blinding layer (gravel)
+ Concrete slab
+ Pool depth
– Projection above ground
= Depth of the excavation pit

The thickness of the concrete slab is usually 20 cm and that of the blinding layer approx. 15 cm (the exact thickness is determined by the construction company carrying out the work, depending on the ground).
The projection of the pool above the ground may be max. 1/3 of the total height. It is usual to set the top edge of the pool level with the surrounding ground and then to cover the pool edge with coping stones (see Fig. 6).

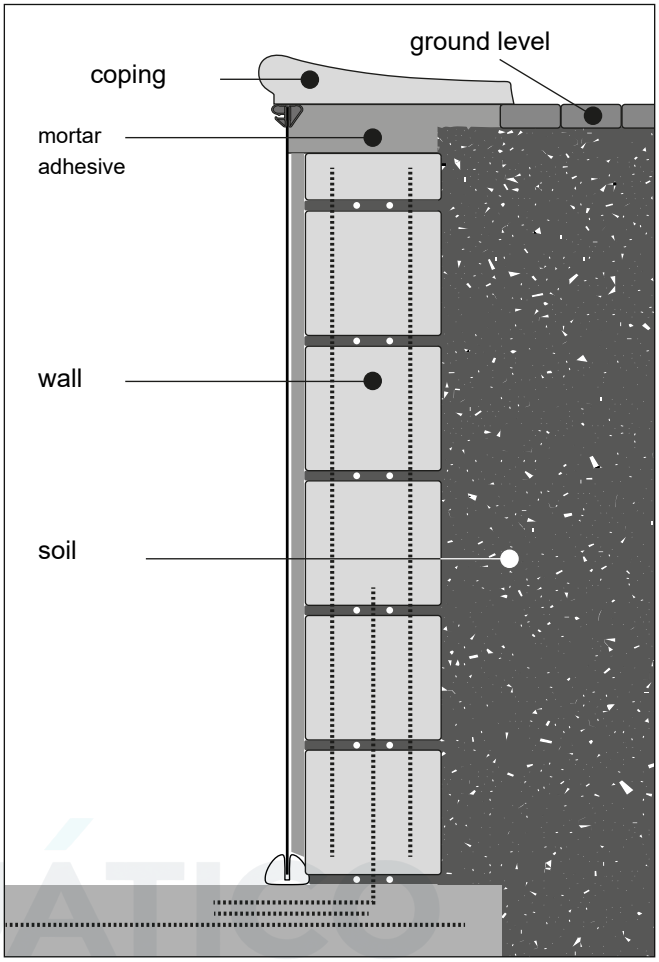


Fig. 6

Important: If the filter system is not located directly at the pool, trenches must also be excavated for the pipes to be laid.
They should be approx. 40-50 cm wide and approx. 100 cm deep. If the pipes can be drained completely before winter by means of drains at the lowest point of the pipework, the pipes can be laid higher and with a slope towards the drain.
For this purpose it is recommended – as described in detail in our piping instructions – to provide a large plastic pipe or similar with an internal diameter of at least 160 mm at the relevant point.
Likewise, trenches must be made if necessary for the solar lines (from the filter system to the solar absorber) and for the electrical cables.

3.3 Concrete slab

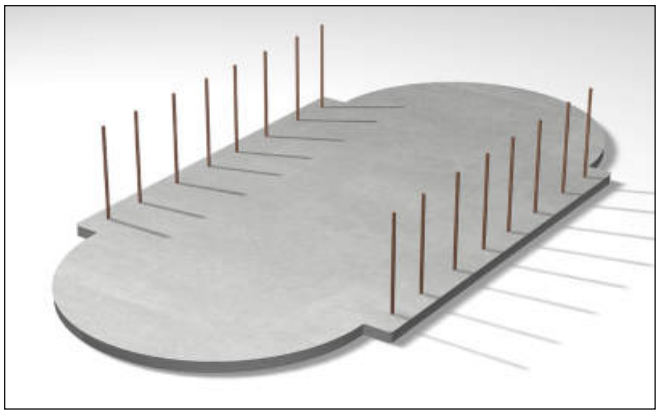


Fig. 7

After excavation and drainage (lay drainage/blinding layer if necessary), a concrete slab (C25/30) with reinforcement (steel mesh Q188A) is made first. We recommend a slab thickness of 20 cm, but the exact thickness – also that of the blinding layer – should be determined by a construction expert.

The concrete slab should be approx. 10 cm larger all round than the pool/support wall dimension and be horizontal, without a slope.

Slab dimensions:

Pool	Concrete slab (min.)
B × L (m)	B × L (m)
3,00 × 4,90	3,70 × 5,10
3,20 × 5,25	3,90 × 5,50
3,20 × 6,00	3,90 × 6,20
3,50 × 7,00	4,20 × 7,20
4,00 × 8,00	4,70 × 8,20

Here too, the concrete slab can be made rectangular or follow the shape of the pool.

Important: It is advisable to place the floor/wall reinforcing bars into the still wet concrete slab straight away.
They are made of 8 mm structural steel, are angled and measure approx. 25 x 50 cm. It is best to take one of the hollow blocks for the support wall and press a pattern of the later wall into the wet concrete. The angled reinforcing bars are placed centrally in each of the inner chambers of the imprints that are now visible (see Fig. 7 and Fig. 8).

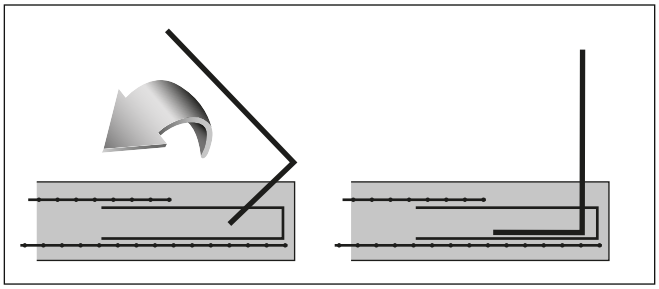


Fig. 8

The concrete slab must be screeded as smooth as possible. A few days before pool assembly, unevenness should be levelled out with a levelling compound in order to achieve the best possible visual result and to avoid seeing imprints through the liner later.

If a pool enclosure is planned, please take into account:
If a sliding pool enclosure is to be installed immediately or later, we recommend providing a foundation (pad or strip foundation) in the area of the longitudinal rails, especially if the enclosure is to be located in the area of the current pool excavation.

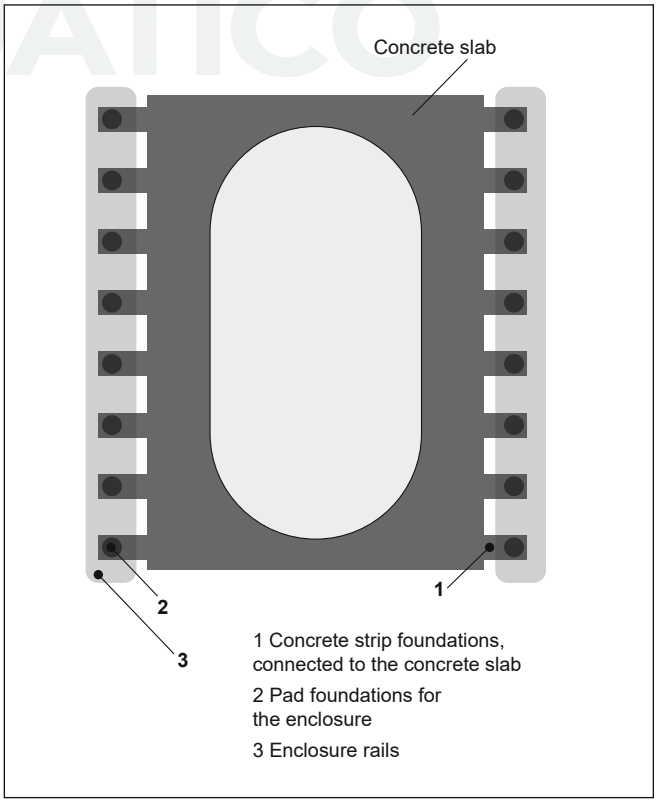


Fig. 9

In this case a certain settling of the ground in the first years is normal, but this leads to problems with an enclosure.

We therefore recommend pad foundations at a spacing of approx. 150 cm.
For this purpose the excavation should be dug accordingly. The concrete slab should be extended in strips towards the planned pad foundations in order to obtain a structural connection. Then a pipe approx. 20 cm in diameter is placed for each pad foundation and filled with concrete.

The height of the pipe should be such that the surrounding slabs can still be laid on top. Between the pad foundations it is sufficient to make a strip of lean concrete and to lay the surrounding slabs on it.

On the end sides of the enclosure a lean concrete base is likewise sufficient.

3.4 Building the support walls

Once the concrete slab can be walked on, the two lateral support walls are built. Each row of hollow blocks is filled with concrete (C25/30) and reinforced vertically and horizontally with structural steel (Ø 8 mm). When building the wall, make sure the joints are staggered and the vertical and horizontal are exactly maintained, and that the two support walls are exactly parallel.
The height of the support walls depends on the pool height; see the adjacent sketches.
For secure fixing of the steel wall to the support wall it is helpful to build the top 1-2 rows of blocks with solid blocks, e.g. bricks, as the fixing screws have been found to hold better here. If the fixing is to be made in filled hollow blocks, we recommend using particularly long screws to reach the concrete core.

Please observe the setting time of the concrete (normally 28 days). Shorter curing times should only be approved by an experienced construction expert.

Please note: Have a construction expert advise you. We cannot accept liability for installation errors and damage caused by faulty construction of the support wall!

Pool 1.20 m high:

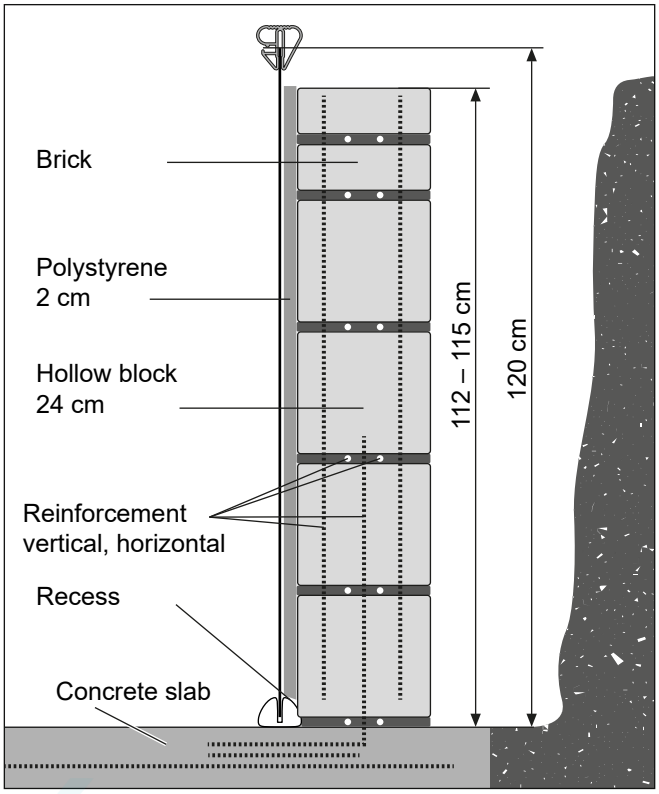


Fig. 10

Pool 1.35 m high:

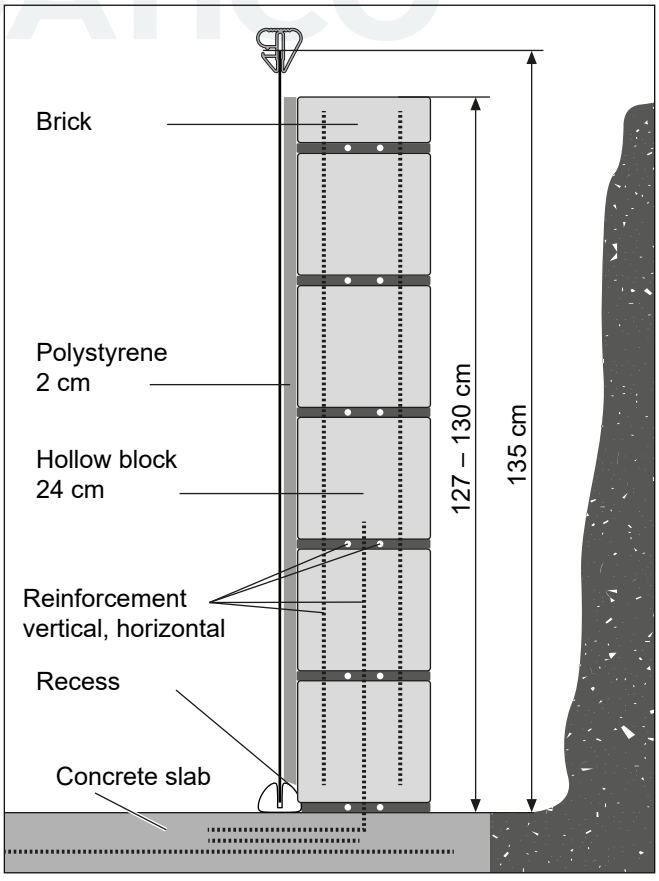


Fig. 11

Pool 1.50 m high:

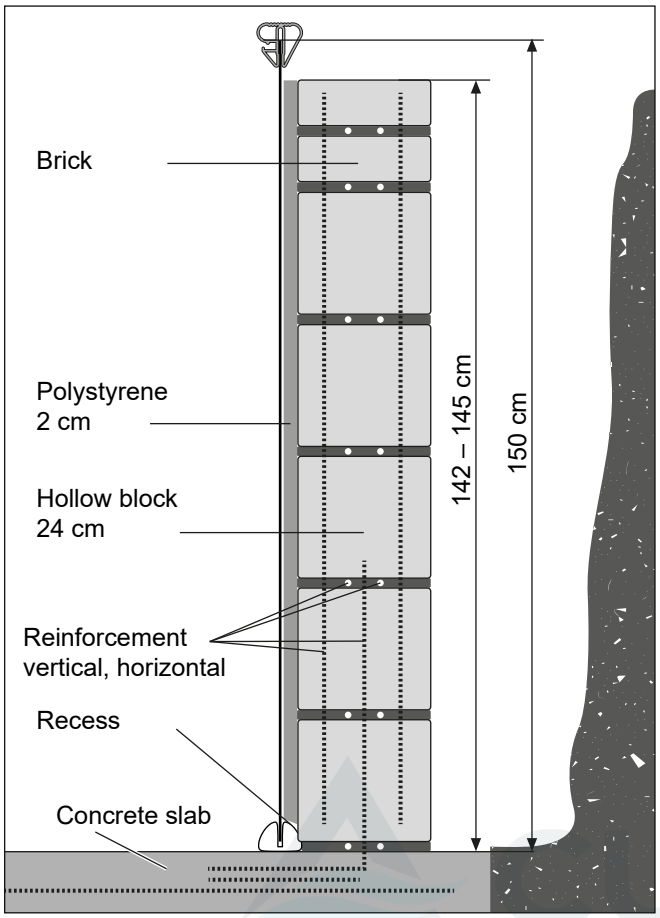


Fig. 12

Please note that the heights of 1.20 m, 1.35 m and 1.50 m refer only to the steel wall. Bottom rail, hanging bead and top rail are not yet included in these dimensions.

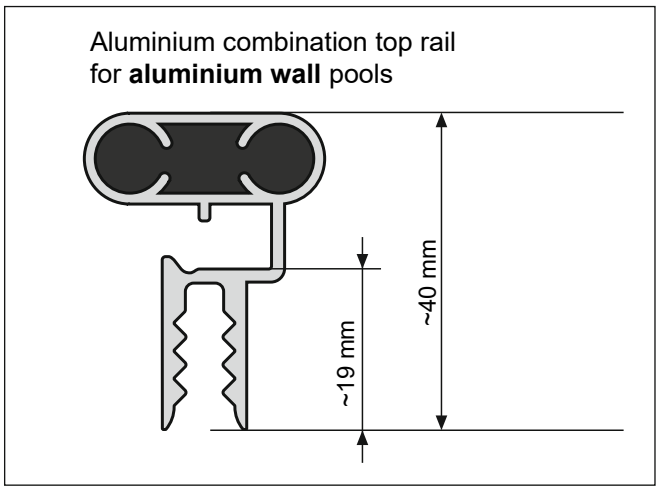


Fig. 13

Depending on the type and design of the top rail (with the aluminium top rail a bead is additionally placed underneath), the finished height is up to approx. 3 cm more than the respective steel wall height stated.

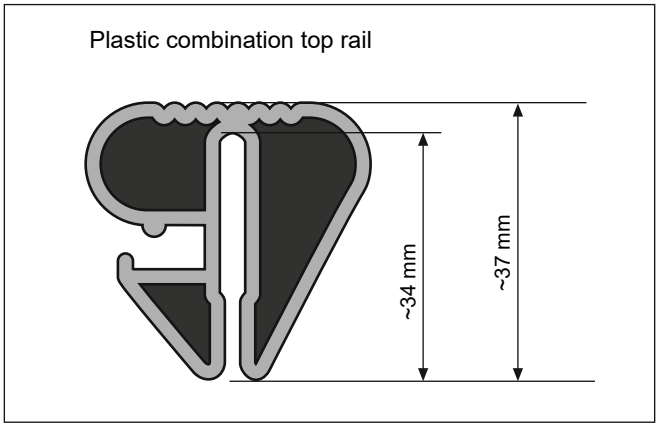


Fig. 14

Here once again the wall lengths and wall spacings (you will find all dimensions and the sketch for them on page 7):

Pool	Spacing (MB)	Length (M)
B × L (m)	MB (m)	M (m)
3,00 × 4,90	3,04	2,10
3,20 × 5,25	3,24	2,30
3,20 × 6,00	3,24	3,00
3,50 × 7,00	3,54	3,70
4,00 × 8,00	4,04	4,20

The wall height must on no account exceed 115 cm (for 120 cm high pools), 130 cm (135 cm high pools) or 145 cm (150 cm high pools), as otherwise the pool top rail can no longer be fitted correctly.

Using suitable polystyrene adhesive, attach 20 mm thick polystyrene boards to the inner sides of the support walls; leave approx. 25 mm free above the concrete slab for the bottom rails. (see Fig. 15).

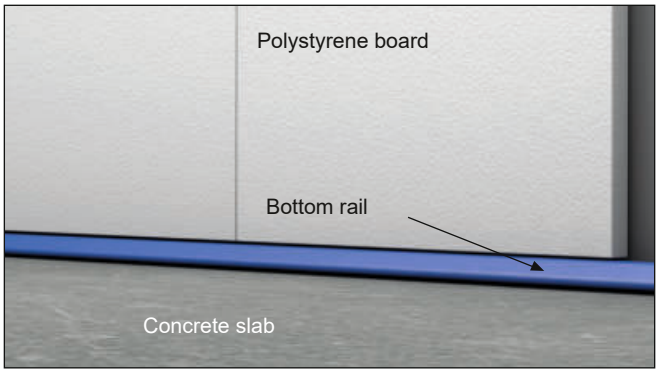


Fig. 15

3.5 Underwater lighting (optional)

On an oval pool the lighting can be installed either in one of the long sides (recommended option) or in one end side. The following assembly steps describe installation in the long side. For lighting in the end side see page 20.

Attention: The light installation niche(s) must be walled in when the support wall is built. Alternatively, you can provide corresponding recess(es) and insert the niches afterwards, fixing them with construction foam.

Types of light:

PAR56 standard installation niche

Only suitable for installation in the lateral support wall



Fig. 16

Compact installation niche

Suitable for installation in the lateral support wall and in the pool curve



Fig. 17

3.5.1 PAR56 standard installation niche

Here you will find installation notes for 1 and 2 light installation niches in brief:

Position when installing 1 underwater light

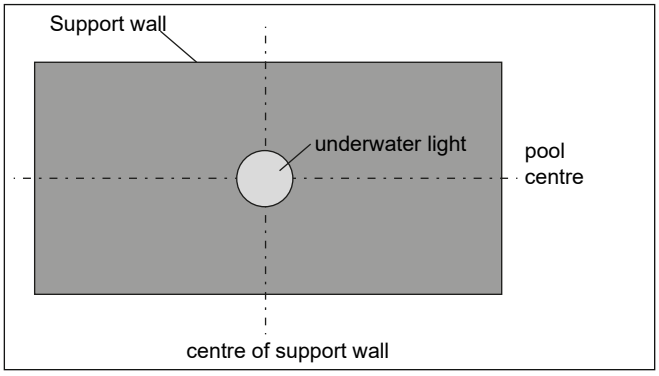


Fig. 18

The flange frame of the installation niche (with screw holes all round) must be flush at the front with the finished wall (polystyrene), i.e. it must project 2 cm from the raw wall (with a polystyrene thickness of 2 cm).

Position when installing 2 underwater lights

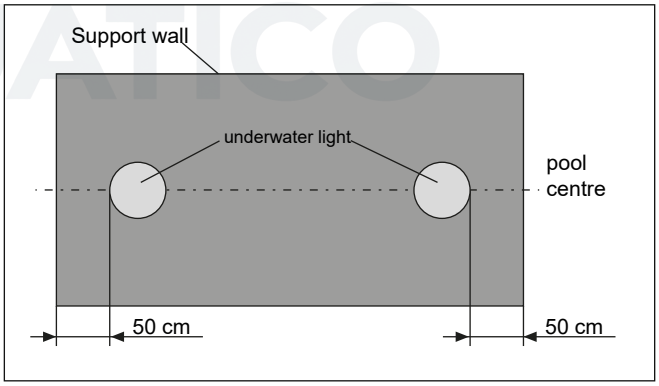


Fig. 19

The flange frames of the installation niches (with screw holes all round) must be flush at the front with the finished wall (polystyrene), i.e. they must project 2 cm from the raw wall (with a polystyrene thickness of 2 cm).

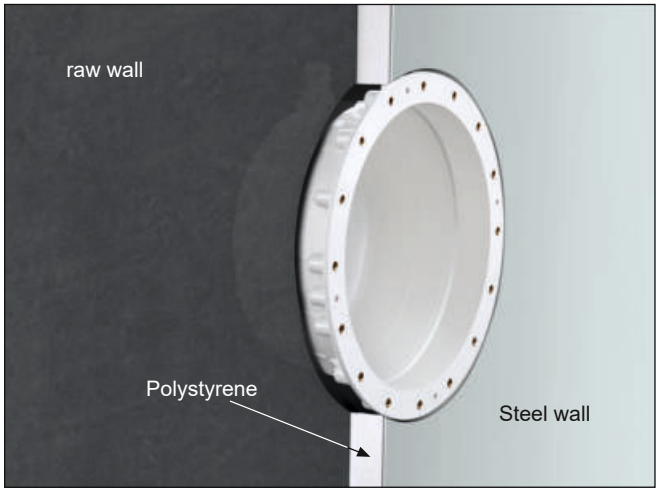


Fig. 20

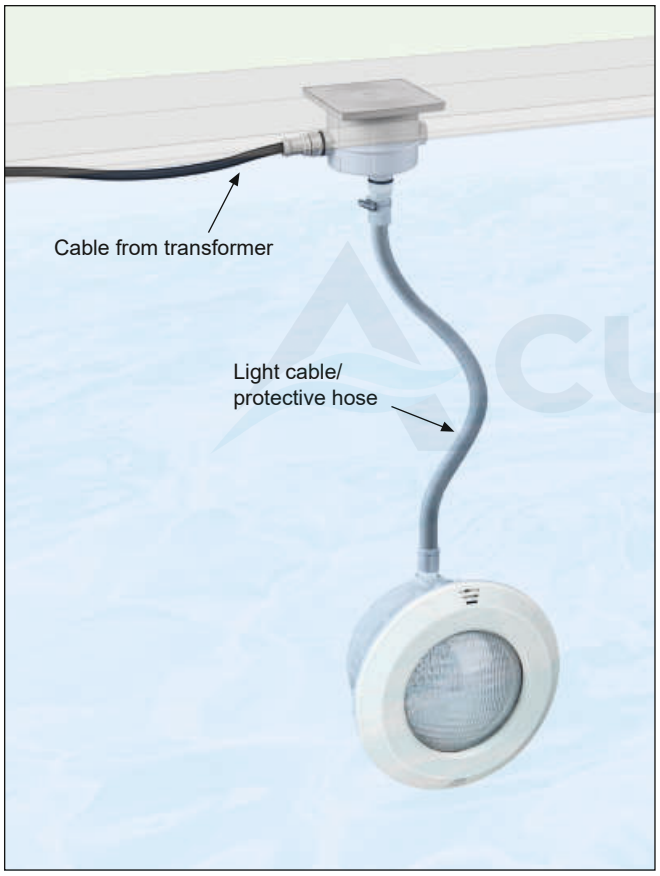


Fig. 21

Lead the cable hose upwards and backwards in a gentle curve, so that the cable junction box can be placed next to the pool, above the water level (see Fig. 21).

3.5.2 Compact installation niche

If you wish to install the Compact lights in the pool curve, you do not need to prepare anything in the pool wall.

In this case please observe the notes from p. 20. If, on the other hand, the light is installed in the long side, then here too, when walling in the niche, make sure that the flange frame is flush with the later finished wall, i.e. protrudes approx. 2 cm from the masonry. Make sure that the rear outlet for connecting the cable protection hose is at the top.

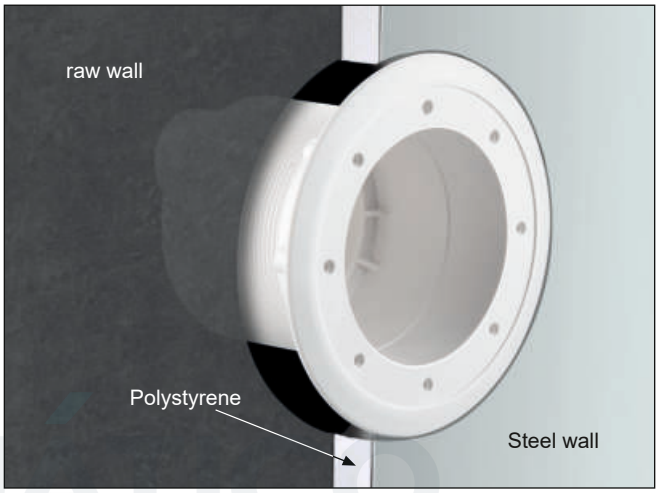


Fig. 22

4 Pool assembly

Depending on the pool size, assembly should be carried out by 3 – 4 people on a windless day. We recommend wearing gloves when erecting the steel wall.

First draw the outline of the pool on the ground. The semicircles of the curves are best marked with a string led around a nail driven in at the middle of the diameter. Mark the lines with a bricklayer's pencil or chalk.

For the pool dimensions including the radius, please refer to Fig. 4 on page 7.



Fig. 23

4.1 Laying out the bottom profile rails

First plug the straight segments of the bottom rails together (width approx. 20 mm). Lay the straight sections of the bottom rail directly in front of the wall in the polystyrene gap and distribute the rails evenly relative to the wall length.

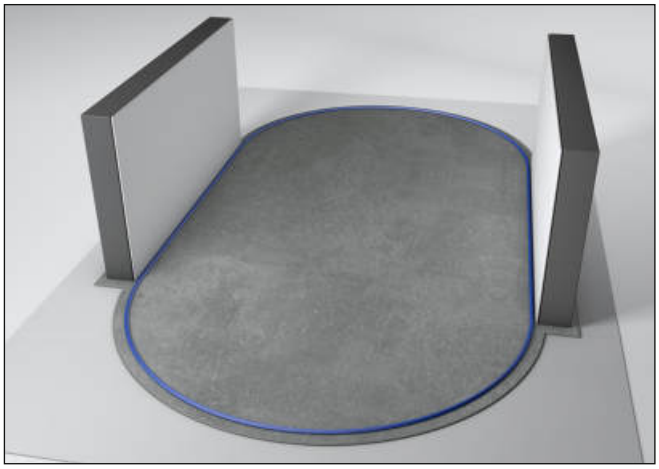


Fig. 24

The wall is slightly longer. Then join the curved segments of the bottom rail together and use them to complete the curves of the end sides. Follow the marked layout.

Please check the dimensions and the symmetry carefully and, if necessary, shorten 1 – 2 bottom rails accordingly.

Example of a bottom profile:

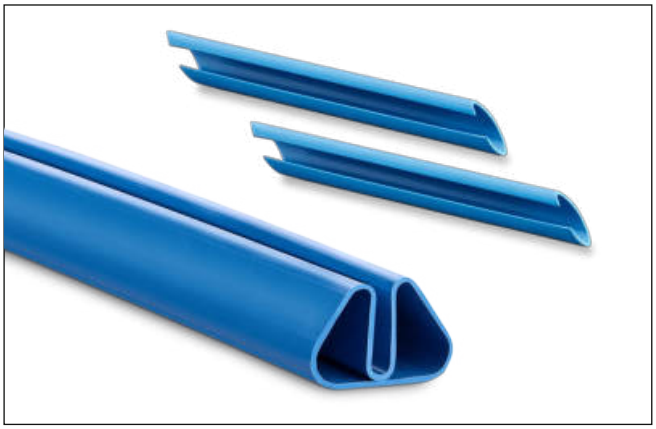


Fig. 25

Professional tip for fitting the bottom profiles and later the top rails: If the connecting pins are greased on one side, the segments can be plugged together much more easily. To do this, the pins are first inserted into one segment, then the still protruding side is greased and the profiles are brought together.

Professional tip for shortening the bottom profiles: First plug all profiles together and align them to the layout (see Fig. 24). Shorten any excess only when erecting the steel wall, because any difference in dimensions is then clearly visible and can be adjusted exactly. You will find the exact procedure described in chapter 4.3 on page 16.



Fig. 26



Fig. 27



Fig. 28

4.2 Erecting the steel wall

To get into the pool, you will need a ladder for the rest of the assembly.
However, later during liner installation care must be taken that this construction ladder does not damage the liner.
In addition, before assembling the pool wall, place the folded liner inside the pool.

With your helpers, place the steel wall approximately at the point where the skimmer (surface skimmer) is to be installed later, on strong boards and cardboard, so that you can pull the steel wall better when unrolling it. The steel wall must never be pulled over the concrete floor when unrolling, as this can damage it.

The steel wall carton is normally labelled “top” or similar; it is important that the steel wall is erected the right way up.

The steel wall is always rolled up inwards at the factory, so that the rolled-up steel wall shows the outside of the pool.
Also do not let yourself be confused by the folded ends of the steel wall roll. Depending on the manufacturer, the folds can be located both on the outside (on most steel wall pools) and on the inside (on aluminium pools). Always unroll the steel wall in the same direction in which it is rolled up.

It is also important to wear gloves when unrolling and erecting the steel wall and to secure the steel wall with a strap or similar before opening/unrolling it (risk of injury!) (see Fig. 28)

The skimmer cut-out is normally located at the beginning of the steel wall to be unrolled (approx. 1 – 2 m from the start); where there are several steel wall packages, the cartons indicate which part of the steel wall with which fitting cut-outs each one is.

Important: If light installation niches have been prepared in the support walls, these places should be marked at the top of the wall so that the corresponding places can easily be found later.
Unroll the steel wall and insert it accordingly into the profile rails. The skimmer cut-out must be positioned at the desired location (as close as possible to the filter system).

Depending on the pool size and scope of delivery, the inlet nozzle is located either near the skimmer or opposite it. With the opposite positioning, 2 nozzles are used.

If the connecting profile is fitted on one side of the steel wall, it must be pulled out. With larger pools the steel wall is divided into 2 parts; i.e. the connection with the connecting profile is made twice.

An important tip: To hold the steel wall temporarily, a few top rail pieces can be fitted during assembly
(see Fig. 29).

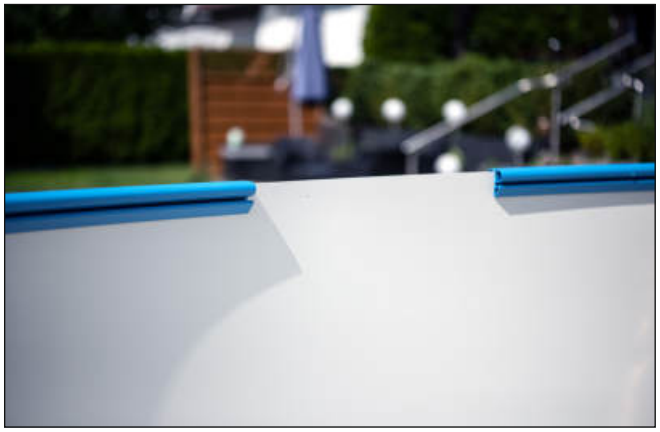


Fig. 29

Even better is the temporary use of 4 – 6 screw clamps to fix the pool wall
Also always make sure that the steel wall stands firmly in the bottom profile rail.

4.3 Adjusting the bottom profile rails and joining the wall ends with the connecting profile

The distance between the steel wall ends should be approx. 5 mm so that the connecting profile can join the two ends of the steel wall together.

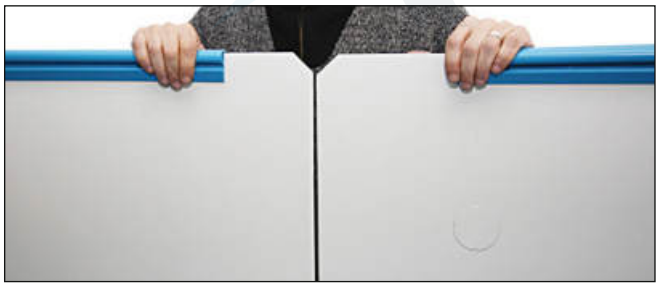


Fig. 30

This must be taken into account when adjusting/shortening the bottom profile rail.

Shortening the bottom profile rail: Unroll the steel wall and measure any overhang of the bottom profile rail. Then pull the steel wall out of the bottom profile rails by about 50 cm again and shorten one bottom profile rail accordingly (allow a gap of 5 mm between the steel wall ends for the connecting profile; see above).

Then fit the steel wall completely again and slide the connecting profile over it (see Fig. 32).



Fig. 31

Depending on the pool, the connecting profile may have a bevelled side. In that case fit the connecting profile so that the bevelled side is inside at the top. If there is no bevel, it does not matter which side is up.



Fig. 32

By moving it gently back and forth when pushing on the connecting profile, you can improve how easily it slides. It is easier to push on with a rubber mallet.

Incorrect fitting and forceful hammering of the connecting profile lead to damage to the steel wall (warranty restriction) and impair the stability of the pool.



Fig. 33

To protect the liner from damage, the connecting profile should be covered on the inside with adhesive tape before the liner is installed.

Attention: Please check that the pool is absolutely level. If height differences exceed 2 cm, the manufacturer's warranty is void.
In this case please look for the cause and eliminate the problem, e.g. by reworking the ground.

4.4 Preparing the connection openings

Attention: On most pools there is one nozzle pre-punching next to the skimmer and

two further nozzle pre-punchings on the opposite end side. Depending on the pool version (1-nozzle or 2-nozzle version), either the pre-punching next to the skimmer or the two opposite the skimmer must be opened. Follow the number of nozzles stated in the scope of the order. On no account may all three pre-punchings be opened! For pools with complete punching, the number and position of the built-in fittings depend on the punchings.

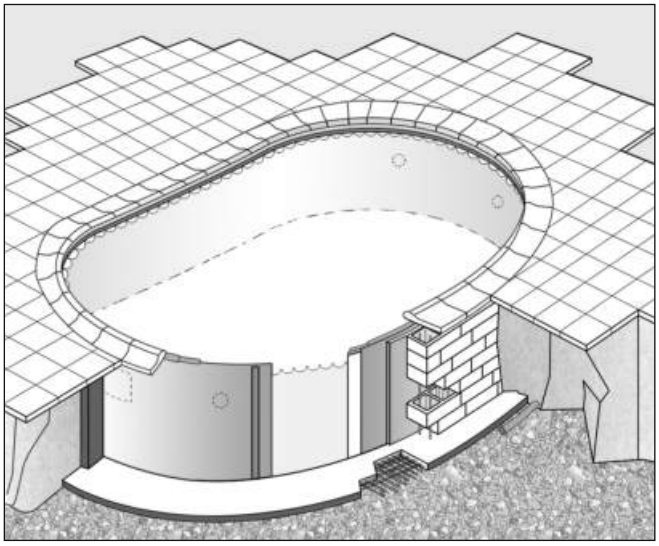


Fig. 34

A note in advance: Please also observe the manufacturer's assembly instructions, if supplied with the built-in fittings.
Please contact us in case of any uncertainties.

4.4.1 Built-in skimmer (surface skimmer)



Fig. 35

1) Skimmer body
2) Suction plate
3) PTFE tape
4) Hose nozzle
5) Double gasket

In our pool sets and individual pools, the corresponding skimmer opening is as a rule cut out or

pre-punched. If the cut-out is made on site, the skimmer opening and the flange holes are marked and then cut out or drilled with a drill and jigsaw.

The distance from the top edge of the skimmer opening to the top edge of the steel wall should be 5 cm. Then carefully deburr the edges. If the opening is pre-punched at the factory but not completely punched out, the inner piece of metal is carefully removed with a suitable tool and the edges are deburred (see Fig. 36).



Fig. 36

Regardless of whether the punching is done at the factory or on site, the edges must be treated with corrosion protection or plastic paint (see Fig. 37).



Fig. 37

If the piping is to be carried out straight away, it is advisable to install the skimmer body now. To do this, slide the skimmer double gasket over the sheet-metal wall at the punching (see Fig. 39), hold the skimmer against the opening from outside and fix it from inside with the smaller securing screws with round heads (see Fig. 39). If 2 separate gaskets are included in the scope of delivery – instead of the usual skimmer double gasket – these must likewise be fitted in the order gasket – steel wall – gasket – pool liner – skimmer flange.

It may be necessary to make additional holes in the steel wall (and treat them with rust protection), as the holes for the securing screws are not always pre-drilled.

If the piping can also be carried out later, the skimmer can also be installed only when the liner is installed (see page 25).

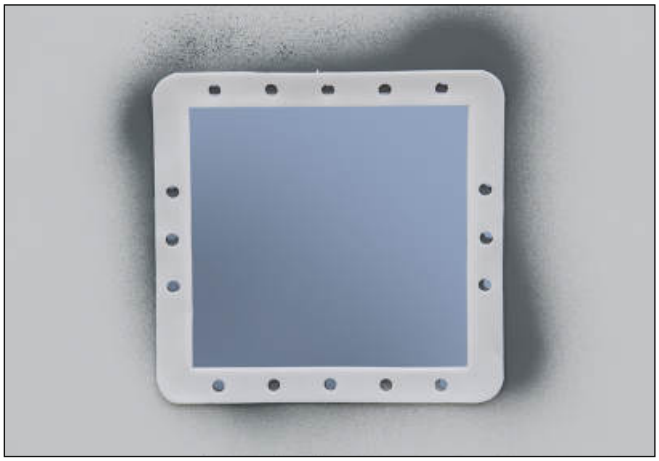


Fig. 38



Fig. 39



Fig. 40

4.4.2 Inlet nozzles

Depending on the pool type, either 2 inlet nozzles opposite the skimmer (opposite end side of the pool in the curve) or 1 inlet nozzle next to the skimmer (the built-in fittings are then located on one end side only) are provided. This is always stated in the scope of the order.

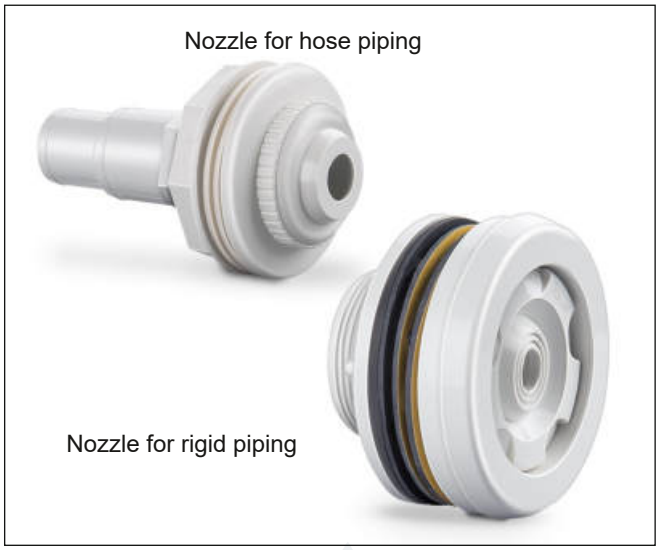


Fig. 41

If the opening is pre-punched at the factory but not completely punched out, the inner piece of metal must be carefully removed with a suitable tool and the edges deburred.

If the cut-outs are made on site, the nozzle openings are made to the size of the nozzle using a drill and jigsaw. Here too, please deburr the edges. The distance from the top edge of the nozzle opening to the top edge of the pool should be approx. 30 cm, and the distance between the two nozzles (with a 2-nozzle version) approx. 200 cm. Regardless of whether the punching is done at the factory or on site, the edges must be treated with corrosion protection or plastic paint.

4.4.2.1 Inlet nozzles for rigid piping (for in-ground installation)

Very important: The nozzle bodies must be fitted now, before liner installation, because

these are high-quality special inlet nozzles with a flange on the pool side, which makes a later liner replacement considerably easier than with conventional nozzles.

Subsequent installation is hardly possible, or only with considerable extra work!

For fitting the nozzle, the flange (7) is required separately. If it cannot be found at once, it is probably in the cover plate (6). The flange can be removed by pressing/bending the cover plate slightly and then installed (see Fig. 42).



Fig. 42



Fig. 43

1) Adjusting ring
2) Nozzle eye
3) Nozzle body
4) Lock nut
5) Screws
6) Cover plate
7) Flange
8) Gaskets

If the inlet nozzle comes with an additional gasket without holes (9), this can be disregarded for steel wall pools.

The nozzle body is now inserted from the inside through the punching in the steel wall.

Stick one of the two self-adhesive gaskets now onto the flange frame of the nozzle body.



Fig. 44

Then screw the lock nut from behind (outside of the pool) onto the nozzle thread and tighten it.



Fig. 45

Remove the adjusting ring and the nozzle eye on the inside before continuing with assembly.

These are only reinserted after the liner has been installed or after the nozzle has been cut out.

Inlet nozzles with a 32/38 mm hose connection are only installed together with the liner (see page 25).

4.4.3 Compact underwater light (optional) / installation in the pool curve

The opening (Ø 121 mm) for the installation niche must be marked on the steel wall, drilled, cut out with a jigsaw and then treated with anti-rust paint or zinc spray.

Then stick the gasket without holes onto the back of the niche, pass the niche through the hole from the inside to the outside and fix it on the outside with the lock nut. Make sure that the lock nut is screwed onto the niche with the deep side first.

Important: One of the gaskets with holes is now stuck on the inside onto the flange frame!



Fig. 46



Fig. 47



Fig. 48

The edges of the resulting hole must be deburred and then treated with zinc spray or similar to prevent later corrosion of the steel wall (see Fig. 47 and 48).



Fig. 49

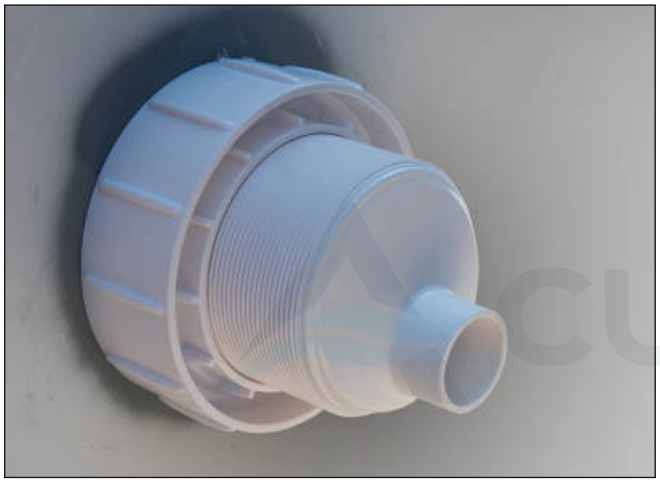


Fig. 50

After the self-adhesive gasket without holes – included in the scope of delivery of the light – has been stuck onto the back of the niche, the niche can be inserted into the hole from the inside to the outside and fixed from the outside with the lock nut. Make sure that the lock nut is screwed onto the niche with the deep side first (see Fig. 50).

4.4.4 Built-in counter-current unit (optional)

The built-in counter-current unit is placed in a pool curve – usually on the opposite side from the skimmer; behind it an inspection shaft with minimum dimensions of 100 x 100 x 100 cm must be provided (note the possibility of draining the shaft!).
For installing the counter-current unit, please observe the assembly instructions of the respective manufacturer. The holes in the pool wall must of course also be carefully protected against corrosion here.

4.5 Fixing the steel wall

The following explanations assume that the support walls have been built to the height described on pages 7 to 11.

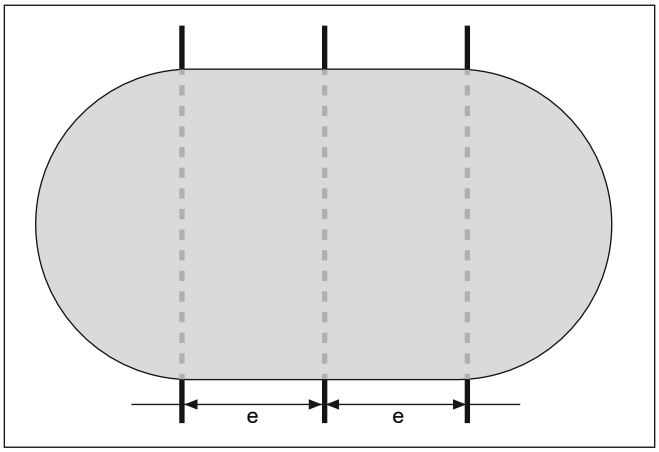


Fig. 51

B × L (m)	Number of fixings per side	Spacing e (m)
3,00 × 4,90	3	0,75
3,20 × 5,25	3	0,75
3,20 × 6,00	3	1,00
3,50 × 7,00	3	1,40
4,00 × 8,00	3	1,60

In the area of the support walls, you must fix the steel wall with screws 5 cm below the top edge of the support wall (for a pool height of 120 cm, fixing 110 cm from the ground; for a 135 cm pool, 125 cm from the ground; for a 150 cm pool, 140 cm from the ground). The fixing must be made in a horizontal line. The fixing must be absolutely stable; in case of doubt, add further screws and wall plugs. If the top row of blocks consists of filled concrete hollow blocks, it is advisable to use particularly long screws in order to achieve a fixing in the concrete core of the support wall. Protect the holes in the steel wall against corrosion.

Cover the screw heads with PVC-compatible adhesive tape (e.g. duct tape, gaffa tape or similar) to protect the liner.

4.6 Laying the underlay fleece

The pool should not be left without water for a longer period. Pool assembly should be completed promptly. If this is not possible because of the weather or other reasons, it is advisable not to lay the fleece yet.

We recommend using a polyester underlay fleece or a ground protection sheet (usually included in our complete pool sets) to protect the liner from direct contact with the ground and any PVC-incompatible materials it may contain. However, the underlay fleece can only protect, not level out unevenness.

Before laying the fleece, the floor must be cleaned thoroughly.
In some cases the fleece is already cut to the pool size. If it is supplied as roll goods, please lay it out in strips and fix it with adhesive tape.



Fig. 52

Cut the fleece approx. 10 cm larger than the pool dimension and leave about 5 cm standing up the pool wall all round. The offcuts can be used for smaller edge pieces. Pull the excess over the bottom rails and stick the fleece to the steel wall with packing tape.



Fig. 53

Pull the underlay fleece smooth and likewise join it at the seams with packing tape.
Any kinks and wrinkles in the fleece that may occur during transport and storage are smoothed out by the water pressure by themselves after a certain time.

4.7 Hanging the liner and fitting the top rail

Attention: Install the liner at temperatures between +15 °C and +25 °C. Make sure that this minimum temperature is also maintained at night, since nights, especially in spring, can still be quite cold and the liner otherwise does not "come up to temperature" quickly enough during installation, particularly if stored outdoors. Not in strong sunshine! If the temperature is too high: the liner is soft, elastic, too large. If the temperature is too low: the liner is hard, inelastic, too small (size differences of up to 50 cm!).

Once the fleece has been laid, the interior of the pool should only be entered with clean shoes or socks. In addition, the entire interior of the pool should be cleaned again (e.g. with a vacuum cleaner).

Now place the liner in the middle and spread it out so that the outer floor seams lie at an even distance from the steel wall, since the liner is always slightly smaller than the pool itself.

Please make sure that the vertical weld seam is not located in the area of the skimmer, the inlet nozzles or the lights,
as otherwise watertightness is not guaranteed.

Attention: Only step onto the PVC liner barefoot or with suitable shoes.



Fig. 54

Regardless of the top rail, the liner always has a welded-on hanging profile, the so-called hanging bead (see Fig. 55).



Fig. 55

Only exception: oval pools of the “Undercover” series. For these pools the liner is supplied with a welded-on wedge bead, which is only inserted after the final top rail assembly – see 4.7.1. To do this, the wedge bead is inserted horizontally into the lateral groove and the liner is then pulled slightly downwards so that the wedge jams and the liner is held.

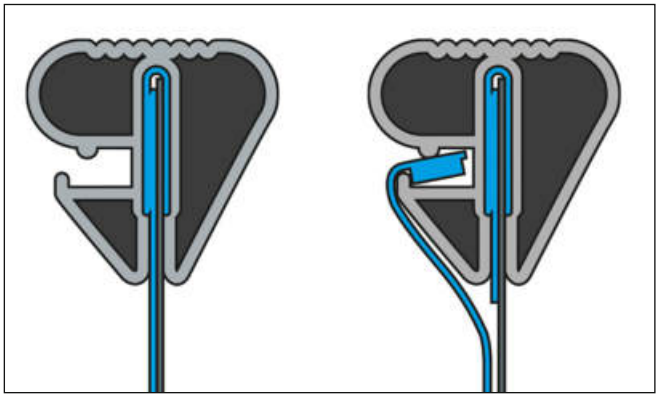
Undercover top rail



Fig. 56

Digression: top rail:

The lateral wedge groove of the special top rail is only needed for a later liner replacement, if coping stones have been laid on the top rail. For this the old liner is cut off along the top rail, with the remaining hanging profile continuing to serve as edge protection. Only the second liner, which in turn has a wedge profile rather than a hanging profile, is hung sideways into the groove of the top rail.



(Special combination top rail)

Slide the edge of the liner with the welded-on hanging profile over the edge of the steel wall and fix the liner with several individual top rail pieces



Fig. 57

Fit the top rail completely only after the liner weld seams have been evenly aligned

4.7.1 Fitting the top rail (general)

Plug the top rail pieces together with the connecting pins; press them onto the pool edge by striking with the flat of the hand or with a rubber mallet, clamping the hanging profile in the process. If necessary, shorten one top rail piece.



Fig. 58



Fig. 59

4.7.2 Smoothing out wrinkles

Diagonal wrinkles on the wall part of the liner can be smoothed out by shifting them while the top rail is partly fixed.

Push the wrinkles out of the floor towards the pool wall. Pay particular attention that the weld seam of the liner between the floor and the wall part lies exactly in the floor/wall corner of the pool wall and floor.



Fig. 60

Before the pool is filled, the liner should have an even distance of the weld seams to the pool edge everywhere and, if possible, no longer show any wrinkles. Since the liner is manufactured with an undersize, i.e. slightly smaller than the pool dimension, to allow for expansion due to temperature and water pressure, it is absolutely important that the floor seams are not aligned unevenly in their distance from the pool wall.



Fig. 61

After the final top rail assembly, any remaining floor wrinkles can be corrected by filling the pool with approx. 2 – 3 cm of water and moving the wrinkles outwards.

4.8 Installing the built-in fittings

When the water level is approx. 20 cm below the respective built-in fitting, flanging can begin. The following assembly instructions apply only to our built-in fittings.

4.8.1 Inlet nozzles

For hose connection 32/38 mm (see Fig. 64):

When the liner is aligned, cut out the liner tightly at the sheet-metal punching (slightly smaller than the steel wall opening). Then place one gasket between the liner and the steel wall and pass the nozzle with the second gasket through the opening, so that there is a gasket both in front of the liner and behind the liner. Then tighten the nozzle with the lock nut on the outside of the pool.

Note: If a double gasket is included in the scope of delivery, please separate it in the middle so that you have 2 individual gaskets (see Fig. 62).

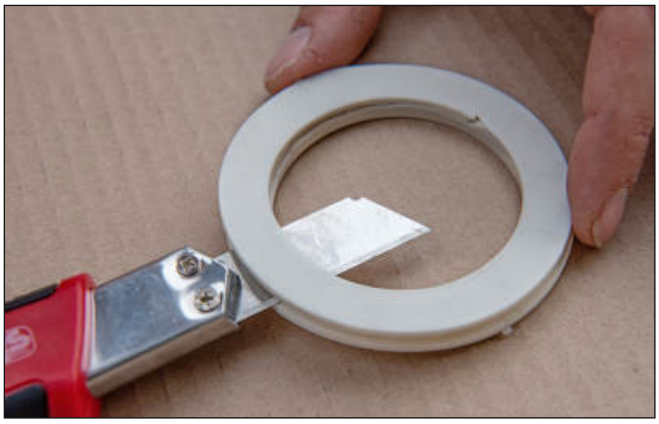


Fig. 62



Fig. 63

For rigid piping 50 mm (see Fig. 64):

When the liner is aligned, pierce the screw holes in advance, e.g. with an awl. Stick the 2nd gasket behind the flange so that the gasket is located between the liner and the flange. Tighten the flange screws in a cross pattern.

Then cut out the liner according to the opening. Then screw the ball and adjusting ring back on and fit the cover plate.



Fig. 64

4.8.2 Skimmer (surface skimmer)

Pierce the screw holes, screw on the flange in a cross pattern, then cut out the skimmer opening and fit the cover plate (see Fig. 65 – 66). On the flange and cover plate, the marking “Top” usually indicates the upper side.

Insert the skimmer flap and skimmer basket. Only fit the suction plate in connection with the pool cleaner hose, not during normal filter operation!

You will find more information on vacuuming the pool floor via the skimmer connection, for example, in our filter system operating instructions.
If the skimmer body is only installed now together with the liner, place the double gasket in the punching of the steel wall, hold the body from outside, pierce the screw holes from inside and screw on the flange in a cross pattern.



Fig. 65



Fig. 66

5 Lean concrete backfilling at the curves

Fill the assembled, fully installed pool with water (initial height approx. 60 cm).

Before backfilling, attach construction film and polystyrene boards (thickness 15 – 25 mm) to protect the outside of the steel wall at the curves in the ground.

Backfill the pool wall in several layers (each max. 50 cm) with lean concrete C8/10 (or a mix ratio of approx. 1:10 depending on the gravel grading), earth-moist. The lower layer should in each case already have set

before the next layer is applied. Formwork boards or similar can be used to delimit the individual lean concrete layers at the sides. After setting, the formwork boards are then moved up to set the dimensions of the next layer (see Fig. 67).

The concrete must not be too wet and must not be vibrated or tamped.

The concrete backfill must be at least 15 cm thick in natural ground (e.g. cohesive clay). In ground that pushes back, we recommend a backfill of approx. 30 cm.

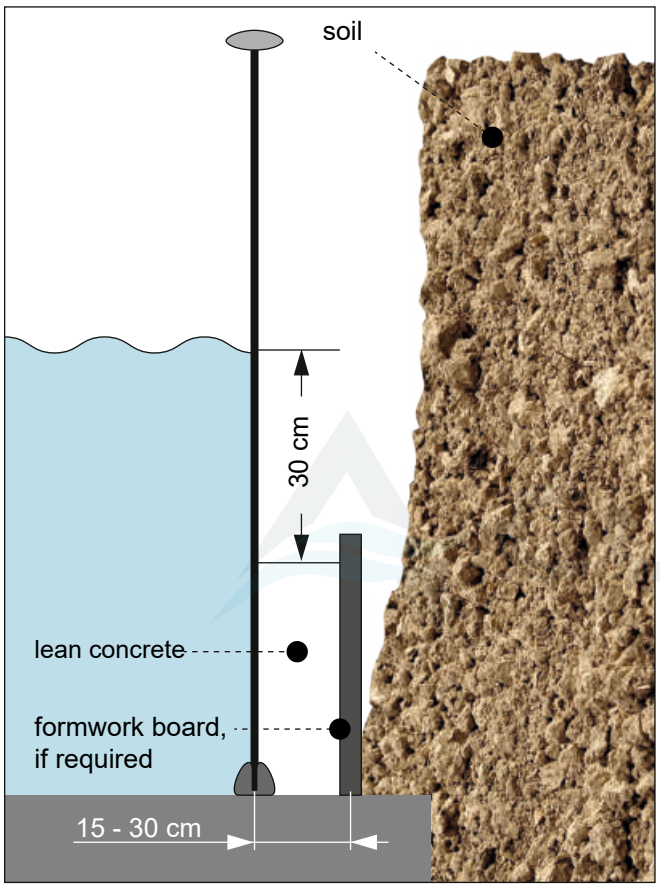


Fig. 67

When backfilling, it is important that the water level is ALWAYS at least 30 cm higher than the lean concrete, in order to counteract the pressure of the concrete.

When backfilling the pool with concrete, make sure that the pool wall is not deformed by the pressure of the concrete.

Excessive pressure of the concrete on the built-in skimmer must also be avoided, as this can lead, among other things, to deformation and later jamming of the skimmer flap. It is advisable to place polystyrene or similar around the skimmer in order to absorb the concrete pressure at this point. Damage of any kind to the steel wall must also be avoided, as this can lead to later corrosion of the steel wall and to loss of the manufacturer's warranty. If scratches or other damage occur on the steel wall, they must be treated immediately with rust protection agents.

Behind the support walls no lean concrete backfill is required

6 Miscellaneous

6.1 Water level and skimmer flap

The water level of the pool must be based on the skimmer opening. The optimum is the middle to 2/3 of the skimmer opening (see Fig. 68). A water level that is too low must be prevented in every case, as this can damage the pump. The free movement of the skimmer flap and the correct seating of the skimmer basket must also always be ensured; otherwise both can impede the water flow.

The suction plate may only be fitted during vacuuming of the pool floor and with the pool cleaner hose in use.

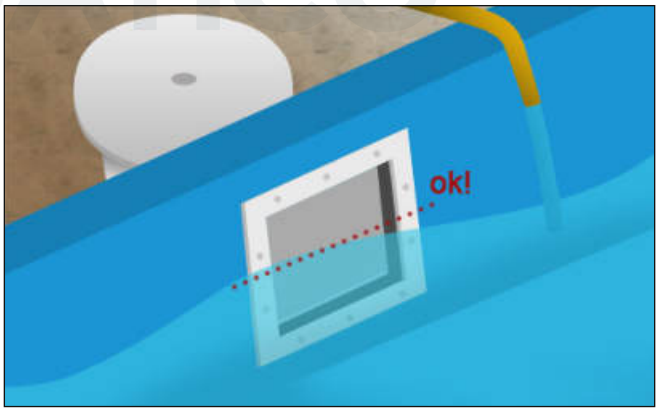


Fig. 68

Therefore, when working with ("stainless") stainless steel, take care to use the right tool. Please do not use tools that already show corrosion from flash rust or similar, or that were used to assemble components made of "normal" steel. It is therefore advisable to use separate tools for work with stainless steel and for work with other metals.

6.4 Repairing the pool liner

Damage to the pool liner can be repaired without difficulty using a repair kit.

For this, you will find useful tips on the correct installation of the pool liner at www.poolsana.de, as well as a video guide to repairing a leak.

6.5 Care and maintenance

Permanently clean, clear water is ensured by the combination of mechanical water treatment and chemical water care.

Mechanical water treatment:
Removal of smaller particles of dirt from the surface (e.g. pollen, grass, hair) by the skimmer and filter system. Coarse contamination (leaves, insects) is removed with a net and/or pool cleaner.

Chemical water care:
Manual floor cleaning (vacuuming) requires a filter system and a skimmer/surface skimmer to be present. Before manual cleaning, the sand filter system should first be properly backwashed and rinsed.

Manual floor vacuuming:
The skimmer scope of delivery usually includes a so-called “suction plate”, which is also needed alongside a cleaning brush (suction brush), possibly with a telescopic pole, and a suction hose (connection from the brush to the suction plate). To vacuum up coarse dirt, the suction hose is pushed onto the nozzle of the suction plate and the plate is placed on the strainer basket of the skimmer. The hose and the telescopic pole are then connected to the pool vacuum, the valve of your sand filter system is set for floor cleaning to the “Filter” position and cleaning can begin.

Make sure that the suction hose is completely filled with water so that the pool pump does not draw in air!

Professional tip for bleeding the hose:
To fully bleed the suction hose for manual cleaning, it can be held briefly against the inlet nozzle while the filter system is running. The water movement pushes all the air out of the hose; when no more air bubbles rise from the other end of the hose or the suction brush, it is completely bled and the filter system can be switched off.

Fit the suction plate on the skimmer, push the hose onto the suction plate and switch the sand filter back on. If air nevertheless gets into the sand filter system, you must switch off the pool pump and bleed the vacuum again – the filter system normally bleeds itself. To vacuum, now move your brush slowly and evenly (moving too fast can stir up the dirt) over the pool floor. For sand filter systems without a pre-filter, a skimmer with a strainer basket is a prerequisite!

If filter performance drops, the following may be the causes:

12) Filter sand dirty → backwash the filter
13) Pump draws in air (air bubbles on the inlet side) → hoses defective, check the clamps
14) Skimmer gets too little water → check the water level and raise it if necessary
15) Skimmer basket dirty → clean it
16) Pre-filter basket of the filter pump dirty → clean it

(Please follow our respective recommendation for solving the problem).

For manual pool cleaning too, you will find many useful tips on pool care on our website www.poolsana.de, as well as checklists, e.g. for pool commissioning or pool winterising

In our online shop you will find a complete water care range for this with excellently suited, health-compatible products. Here you will also find our detailed water care plan.

6.6 Winterizing

All in-ground pools must remain partially filled with water in winter in order to balance the external pressure.

First the pH value should be set to 7.0 and any cloudiness of the water or algae growth eliminated by shock chlorination.

Then the water level must be lowered to approx. 10 cm below the inlet nozzles and the pipes and the filter system (water and quartz sand) must be drained. The inlet nozzles can be closed with winter plugs.

If built-in lights are installed in the pool, the water level should be either below or above them.

After lowering, add a winterising agent

to the water. To prevent ice pressure on the pool walls, ice pressure pads are recommended.

On our website www.poolsana.de you will also find further information and explanations on this under the categories Checklists and Blog, which can additionally be downloaded free of charge and printed out in the form of a to-do list.

6.7 Safety instructions

General precautions:
Never let children play unsupervised in or near the pool;
inform them about possible dangers. Teach children to swim if necessary. Cover the pool when it is not in use. After eating or sunbathing, enter the water very slowly. Risk of circulatory failure or cardiac arrest!

Immediate help in the event of a bathing accident:
Rescue victims immediately. Check pulse and breathing. If necessary, immediately give mouth-to-mouth resuscitation and chest compressions. Alert the emergency services.

Safety instructions:
Please read all the information carefully before using the pool and ask if anything is unclear. Follow the recommendations. They serve your safety and the safety of your pool users. Please keep this document carefully so that you can use it again at a later date.

One thing first: the following describes – without claiming to be complete – typical risks of using a pool. Not all hazards in every conceivable individual case are covered. Therefore: use your common sense in all activities at and in the pool.

Safety of non-swimmers:
Make sure at all times that non-swimmers and users with only limited swimming ability – especially small children – are supervised by a person who can rescue and call for help in an emergency.
To avoid misunderstandings in communication: designate a person capable of helping who constantly monitors the pool while it is in use.

Non-swimmers and persons with limited swimming ability should wear personal protective equipment (arm floats etc.) when using the pool.

Please remove toys from the pool and its vicinity when the pool is not in use or not being supervised. This prevents children from being attracted to them.

Safe access to the pool:
If your access device (ladder) cannot be pulled up or folded away, and in order to prevent children from unexpectedly gaining access to the pool and drowning, we recommend that you secure access to the pool with a safety device.

Safety devices:
Safety devices can not only prevent children from gaining unexpected access to the pool and thereby prevent drowning. They also protect in general against unauthorised access to the pool. We therefore recommend that you do not do without safety accessories. Depending on individual circumstances, this could be, for example, a fence, a cover with special accident protection, an enclosure or an alarm system. We will be happy to inform you about additional protection options for your pool.

In addition, we recommend that you secure the doors and windows of your house and the access to the property in order to avoid unauthorised access to the pool.

Please note: protective accessories can make a pool safer, but they never replace permanent supervision of children by an adult who can help in an emergency.

Safety equipment:
We recommend that you keep rescue equipment (for example a lifebuoy) near the pool.

Make sure that a working telephone and a list of emergency numbers are near the pool so that help can be called quickly in an emergency

.
Safe use of the pool:
Encourage all pool users – especially children – to learn to swim.

Learn first aid measures (cardiopulmonary resuscitation) and refresh what you have learned regularly. In an emergency this can make a life-saving difference.

Explain to all pool users – including children – before using the pool what to do in an emergency.

Never jump into shallow water. This can lead to serious injury or death.

Do not use the pool if you are under the influence of alcohol or medication that may impair your ability to use the pool safely.

If your pool is fitted with a cover: before using the pool, make sure that the cover is fully opened or fully removed from the water surface.

To protect pool users from diseases spread by water, make sure that the water is always treated and kept hygienically safe. Consult the guidelines and information on water treatment in the operating instructions.

Keep chemicals and water care products (for example products for water treatment, cleaning or disinfection) out of the reach of children.

Removable ladders must be set up on a level surface.

Attach the following safety signs in a clearly visible place within 2 metres near the pool



.

POOLSANA

Pool & Sauna Discount since 2005

We wish you lots of fun with your swimming pool!



PoolSana GmbH & Co. KG
Vershofenstraße 10
90431 Nürnberg

www.poolsana.de
info@poolsana.de