Heat Form®

Above-Ground Pool Installation Manual

Contents

Please read through the whole of this instruction manual before starting the installation of your Heatform Panel Pool.

The Heatform panel will give you a smooth, clean, wall system, to be mounted onto a concrete foundation and supported by a metal structure. A PVC liner is then placed inside to make the pool water-tight.

HeatForm panels can be heavy. Ensure you understand and apply basic principles of manual handling

Digging and trenching can be hazardous. Do not work alone if you can avoid it. Consider a risk assessment prior to commencing work.

Electrical work should be done only by an appropriately qualified person.

The HeatForm above ground pool does not come with external cladding - you are free to finish the pool with wooden or composite cladding as you see fit.

Introduction

Congratulations on purchasing the Heatform insulated panel pool system.
This panel pool system is designed to reduce the labour, heating and energy that is required to install an above-ground swimming pool, whilst ensuring that the quality and design are of the highest standards.

Location of Pool and Construction Considerations
The pool should ideally be located on level ground and a sensible distance from the house, as you will most likely using the house conveniences - toilet, shower etc. - as a changing room.

The filter pump is best positioned at the same level as the pool, to save strain on the pump and filter. If possible keep this technical equipment close: approx. 4-5m. A small garden shed or summer house is a good option for these items.

Things to Remember
Check the area of the dig for main services and ensure re-routing of anything that may be in the way – sewer drains, electrical cables or gas line. You will require electricity for the pump and heating system, and mains water to fill and top-up the pool. If not using electricity to heat the pool, consider where the gas or oil supply is coming from. Think about drainage and where the filtration backwash water can be directed – soakaway or drain.

The earth taken out of the pool will need to be taken away, unless it can be landscaped into the grounds. Think about your access route in and out of the property, and how you are going to move this earth safely. Remember that you will need to bring concrete in to the area, for use in the foundation slab

The most important thing to be considered is safety. Think about how the pool can be closed to children and animals. A suitable wall or fence around the pool is a good idea; this has the added benefit of slowing the wind, reducing its cooling effect and reducing debris getting into the pool.

Most councils in the UK do not require you to have planning permission for a swimming pool on your property. However, if you are in doubt it is always best to ask your local planning office.

Tools and parts list

For all variants:

- M10 Nut
- M10 x 40mm bolt
- Square plate washer
- M16 x 300 galv all thread 8.8 nuts and washers
- Lindapter Hollo bolts M8 size 1
- MA410 Resin tube 410ml
- Resin Applicator Gun
- Resin Blower
- 18mm SDS drill bit
- M8 x 60 zinc plated Thunderbolt
- EasyDrive screw 4.8mm x 22mm (100)
- Panel gasket tape (15m roll)
- 17mm ratchet spanner
- Hole saw and arbor
- White silicone, tube
- Silicone gun 5.5 x 50
- Self-drill wingtips with HF screw caps
- Silicone sealant, Mid-grey Manhattan 310ml
- 1mtr Mid-Grey edge trim

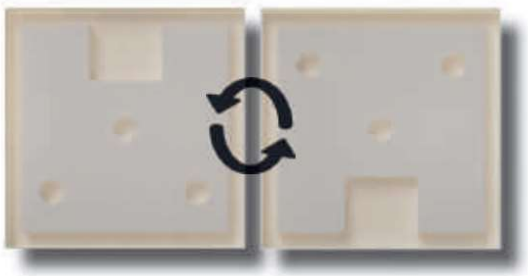
Essential tools:

Spanner & Socket sizes -
13,17 ,22 &24 mm
SDS drill
Hammer
Spirit level
Tape measure
Marker

Handy if available -
Drill for hole saw
Jigsaw for skimmer opening
Electric screw driver and bits
Impact driver with socket drive
500mm Breaker bar

For pools with Swim Jet - in addition to the above:

- Heatform 1.12 Jet Panel
- "L" Brackets for jet panel
- Jet panel gasket
- Jet Panel button bolt
- Nyloc nut for jet panel
- Penny washer 15mm



Preparation

The system has invertible panels that allow the user to create openings for lights, skimmers, inlets and outlets by cutting the pre-positioned openings to fit a standard ABS panel pool fitting (not supplied). Every attempt has been made to ensure that common components, easily available on the market can be used to fit out the pool. We recommend that pool fittings should be used in conjunction with filtration rates according to usage, and in line with SPATA guidelines.

Once you have decided where the pool is going, it is best to set out a datum point, so that you have a fixed position to take your site levels and depths of dig from. Use wooden pegs to set the levels and mark the excavation dimensions. Check that your diagonals are equal, to ensure the corners are square. The datum is a point that will remain until the project is finished. Then dimensions can easily be worked back to the datum.

Once the slab has been formed, the final structure should be fitted with a pool liner. Both on-site linings and bag liners can be used to suit the requirements of the pool.

The installation should only be carried out by professional swimming pool builders. All relevant installation, service and operation instructions must be followed.

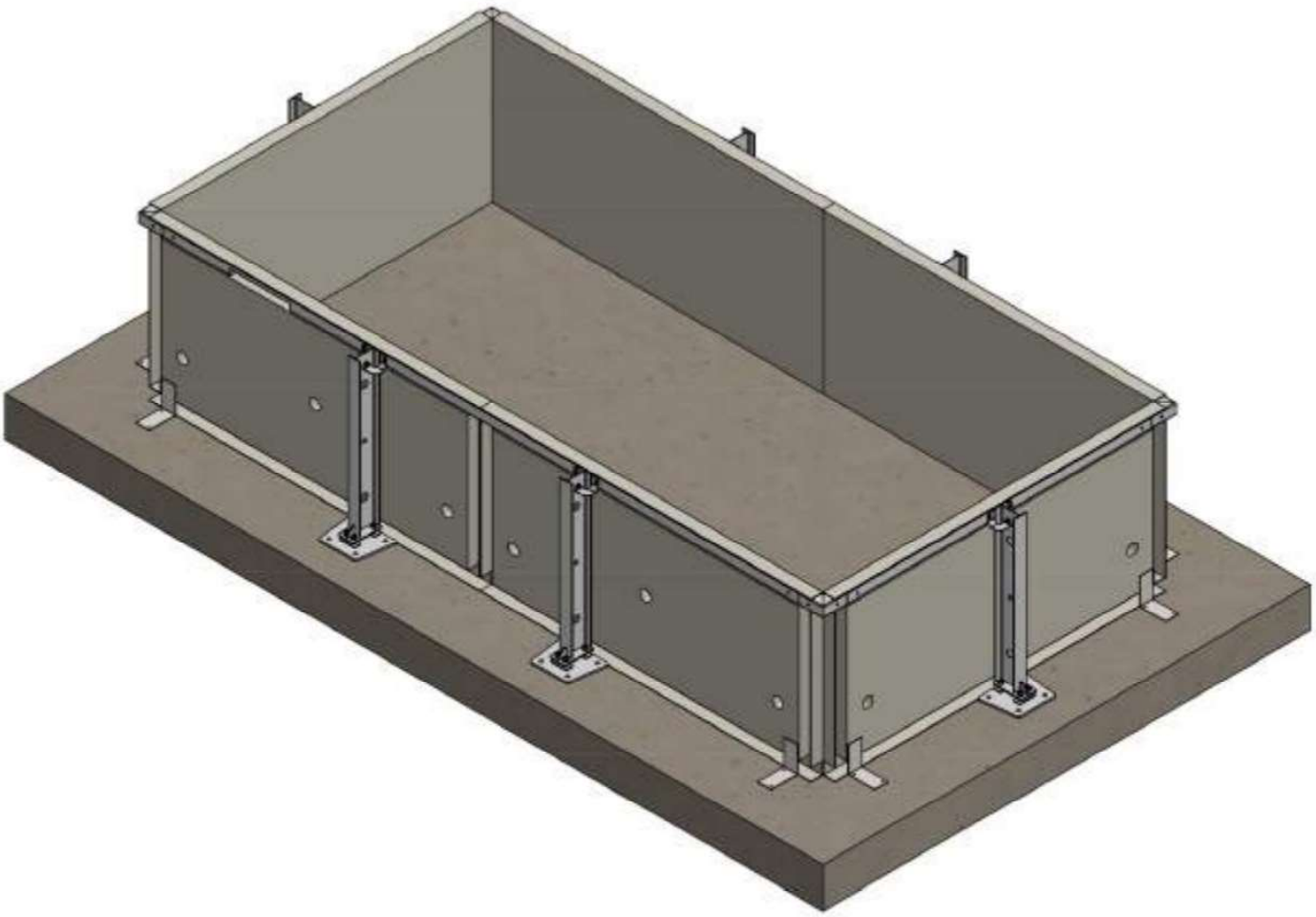
This manual is intended for guidance when installing the Heatform panel system only. While the manual is as comprehensive as possible, job-specific enquiries may still remain. If this is the case please feel free to contact one of our experts for further advice.

Preparation

Due to the manufacturing process and the elasticity of the pool panels, a measurement tolerance should be taken into consideration of +/– 3mm per panel. The indicated measurements are therefore not binding.

The above conditions should be checked and dealt with before the start of the installation. Additional measures may need to be checked and confirmed with a structural engineer before construction is undertaken, if the above values cannot be met.

Indoor pools require separate structural calculations (not supplied) for the pool hall.

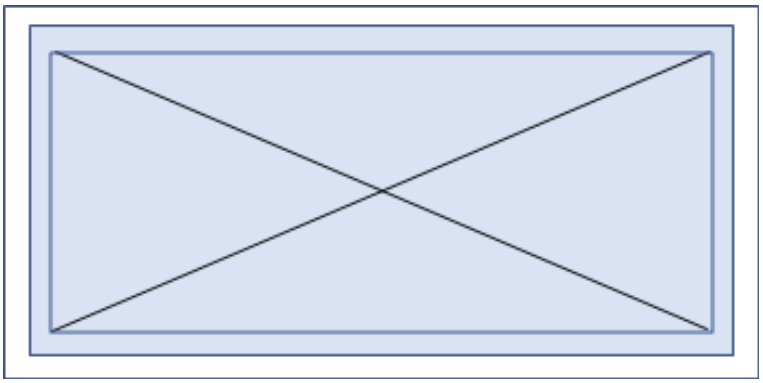


The Pool Slab

Set your datum point. Mark out the ground to show the position of the pool. Seek advice from a structural engineer if trees are present in the garden within a 5m radius of the pool dig, to prevent any ground heave at a later date.

Once the pool size is marked out, then an over dig should be marked 500mm wider to allow a clear, clean dig space around the construction of the panels.

Length



Width

Pool Size	L	W	Pool Internal Diagonal
5m x 2.5m	6	3.5	5.59
6m x 3m	7	4.	6.70
8m x 4m	9	5	8.94
10m x 5m	11	6	11.18
12m x 6m	13	7	13.41

The slab will need to be able to support the pool and the water in it, therefore a minimum of 250mm thick concrete with a double layer of steel mesh to strengthen the concrete is advised.

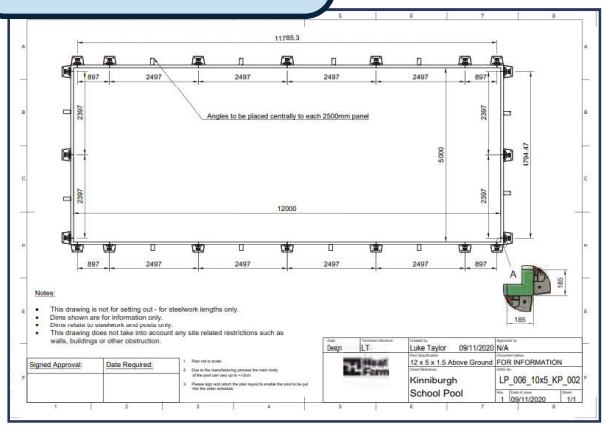
However, the foundation that the pool sits on is very much determined by the type of ground that the pool is being put on to. We suggest that you seek advice from a structural engineer or local pool builder to ensure that the correct design is used to support the pool wall structure adequately.

Setting out

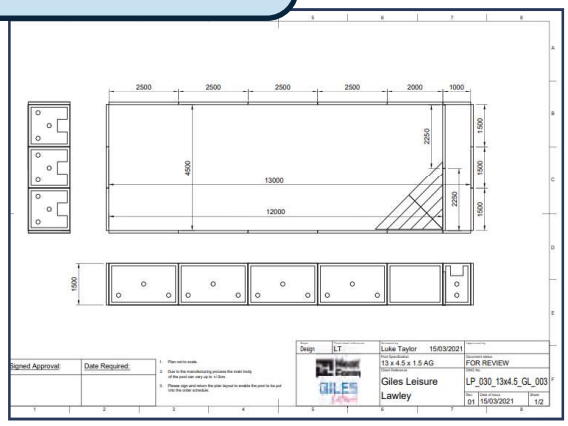
Component and worksite checks

The HeatForm system comes with a set of plans and drawings to help guide you through the installation:

Steelwork Drawing



Panel Layout Plan



The layout drawing supplied will have all information regarding the size of the pool, the number of pillars, angle brackets and position of any fittings included in the design. The drawings do not show slab or pool dig design; this should be designed by a specialist or engineer.

Before starting, lay out all the steelwork components in line with your steelwork drawing assembly pick list, ensuring you have a complete set of:

- Top ring beam box section
- Corners
- Internal sleeve connectors
- Footplates

All the associated nuts, bolts and washers will be found in a big blue plastic box, with a few specialist tools to assist your build.

With a string line, mark out the four corners of the pool wall.

Lay out the panels along these lines to create the shape of the pool, checking against the panel plan.

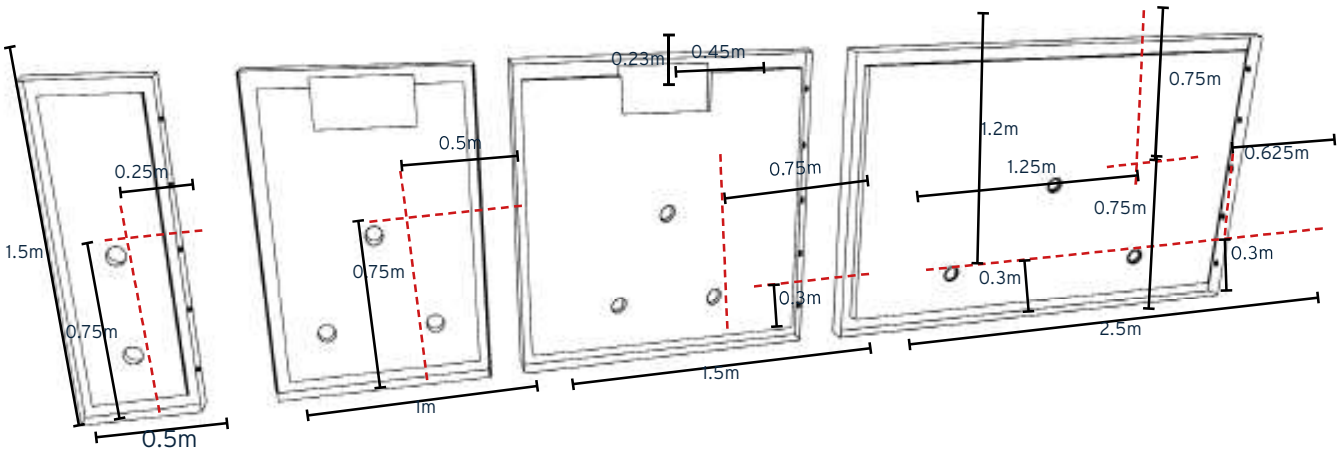
Double check your diagonal dimensions to make sure everything is square, using the table on page 7 to check measurements.

Ensure enough space has been given to allow the stanchion foot plates to be placed correctly, with room to spare on the concrete foundation.

Panel Preparations

Depending on how level the footing is that you're fixing to, the floor may require packing to achieve a flat and level surface for the panels to sit on.

On the back of the panels there are various cut-outs for inlets, lights and skimmers. Each panel is designed to allow it to be inverted, thus allowing an inlet hole to be used as a low-level suction hole, or a low-level suction hole to be used as a high-level vac point.



Once you have selected the panels and the positions for the filtration equipment, it is easier to install the wall section of the fitting at this stage - as the next step is to stand the panels in their chosen location.

These holes are plugged with a foam knock-out which is easily removed. Using a 60mm hole-saw, the inlets and suctions can be cut through the panel wall in the required positions to suit the filtration rate of the pool.

The rectangular position for the skimmer should be marked, and four corners drilled from the front, before using a jigsaw to open the aperture to suit your desired skimmer choice.

Finally, on one edge of each panel add a length of the supplied gasket foam on one side, to create a joint between the two panel flanges.

Assembly of the panels

At this stage, the panels can be lifted into position ahead of tightening and boxing out the steelwork. Take care when standing the panels, and always ensure the layout drawing has been checked for panel locations.

Once everything has been checked and the build area is clear and tidy, you can start to assemble the panels as per the layout drawings. It is recommended to start in a corner and work around from there, as this will ensure the panels are self-supported prior to the steel box beams being added.

Starting at one corner, fix all the panels together using the supplied nuts, bolts and square washers, 5 per panel side. Once you have all the panels in position, the diagonal dimension across the pool should be checked. With the connection of each panel, ensure the front faces are flush, level and even.

As each panel is positioned and connected, check the level on the horizontal and the vertical to ensure you have a straight run. Once this is complete and checked, the next stage can be started. A string line stretched down the whole length and across the width will assist in making sure panels are straight and true.

Steel Box Beams

Now the panels are in place and have been loosely secured, the beams can be laid out around the pool in the locations they are to be installed. The panels are designed to accomodate the beams in the top flange, with the beams being connected with internal sleeves and Hollo-Bolts.

Note: Refer to the supplied drawing for your pool.

Ensure the joints and steel positions line up correctly and fix as per the layout plan (supplied)

Internal sleeves supplied for connections of beam

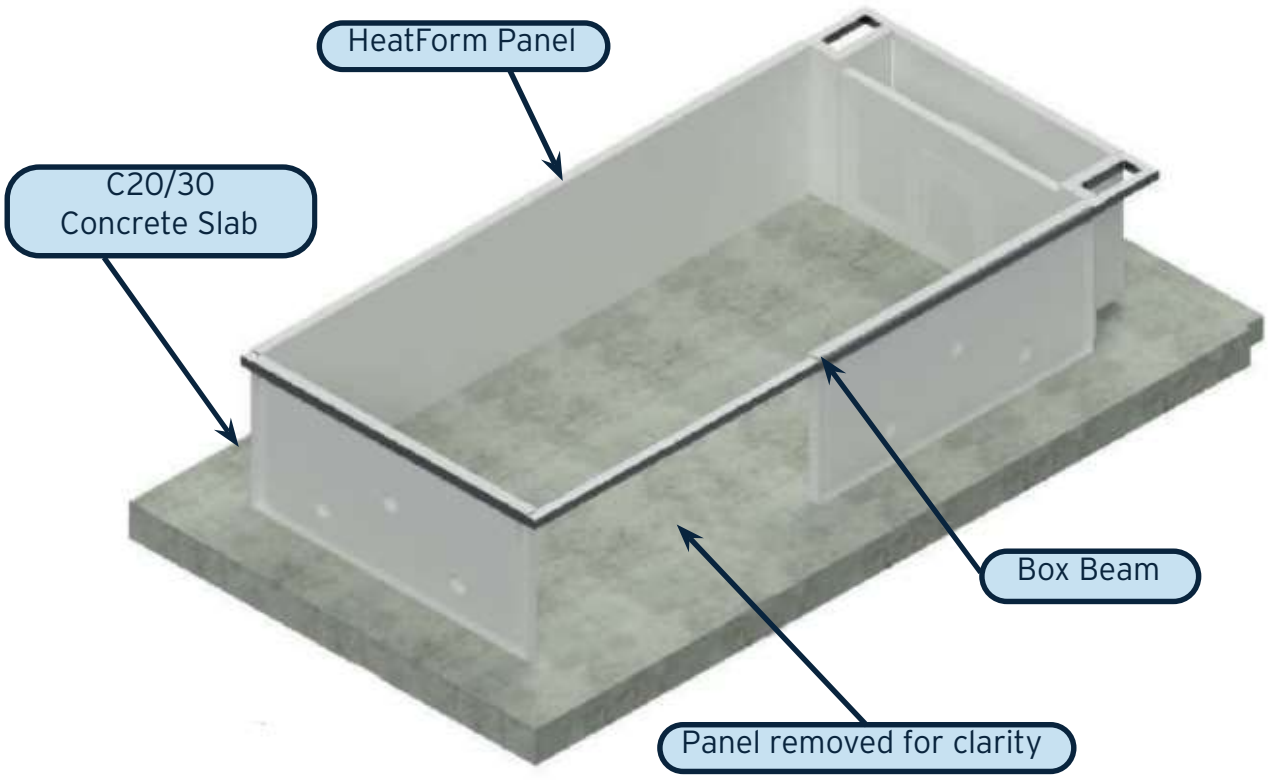
Place the Hollo-bolts in location loosely

Important:
Do NOT tighten any of the captive nut Lindapter Hollo-Bolt fixings at this point!

Steel Box Beams

With the box beams in place, and the structure is stable, double check the diagonals to ensure the pool is square.

A final check of all connections should be done prior to fitting the pillars to the frame, to ensure nothing has been missed.



With all the panels loosely connected and stood in position with the box beam, the structure will be self-supporting, which allows you to move on to the checking and positioning of the pillars around the pool.

Once the steelwork and pool walls are all in position and you are happy with the alignment, tighten all the panel fixing bolts using a 17mm spanner and ratchet.

Pillar Uprights

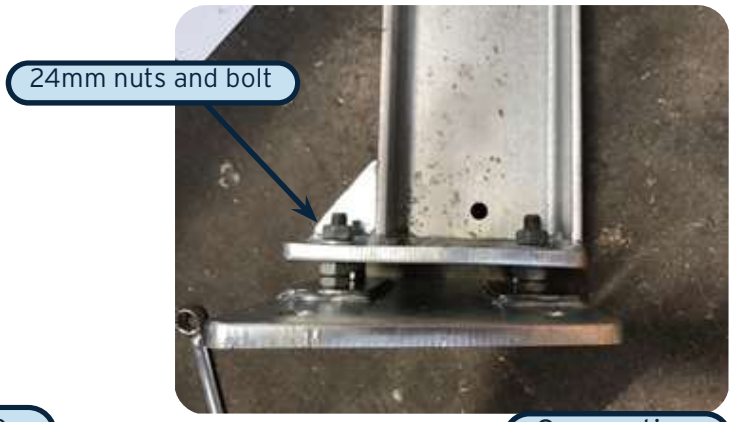
Checks and Assembly

The pillars will arrive pre-assembled, but it is sensible to check all parts before commencing with the fixing of the pillars to the box beam.

It is best practice to lay out the pillars around the pool in their final locations. Generally, each pillar is placed at the join of two panels along the width and length of the pool, with two pillars to each corner.

Please refer to your supplied layout plan for confirmation of pillar positions.

Baseplate



Connection

Wing bracket

Assembled pillar

Now the pillars are checked, they can be positioned in their places around the pool. Typically there will be one pillar per panel joint, and two per corner. On larger pools there may be additional steelwork to add rigidity and avoid movement on longer runs.

Always refer to your plan before positioning the pillars.

Pillar Uprights

Placing around the pool

Please refer to your supplied layout plan for guidance when positioning the pillars around the pool.

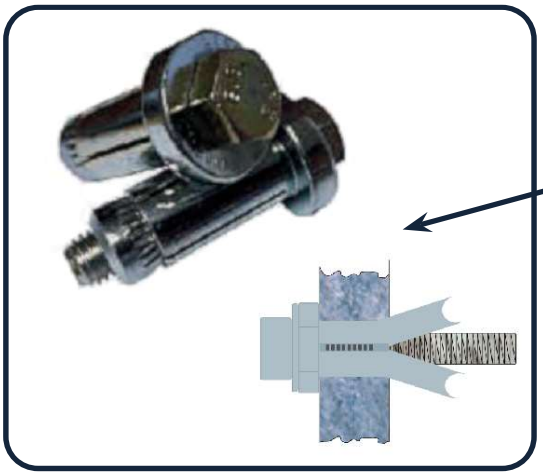
Place each pillar on each joint and around the corners of the box beam.

At this point, the Hollo-bolts (pictured) should be loosely fitted through the wing bracket of the pillar and into the corresponding hole in the box beam. The bolts will be in place from the previous step; they will need to be removed and refitted into the same holes.

Do not tighten the fittings until you are completely happy with the arrangement.

The first step in fitting the pillars is to ensure all items are assembled correctly as per the previous page, then loosely fit into the holes in the box beam through the wingnuts, as shown above.

The next step is to tighten the pillars against the box beam. To tighten a Hollo-bolt you will need an impact driver with 13mm socket and a 22mm spanner.



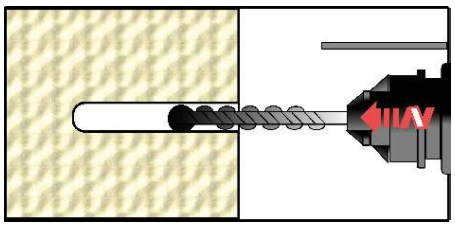
Hollo-bolts are used to create a strong connection between the pillars and the box beam. The design of the bolts means that once tightened, they are very difficult to remove. Only tighten them fully once you are sure they are in the correct position.

Tools required are listed at the start of the manual.

Pillar Uprights

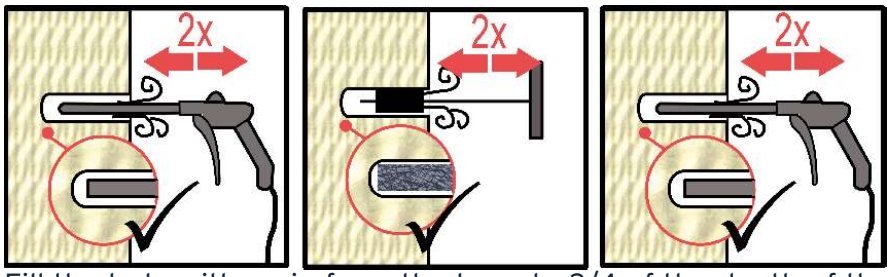
Final Fix
Before fixing the feet to the floor, loosen the adjustment nuts so that the feet sit flush to the floor prior to drilling and anchoring. This avoids pulling the panels out.

Drill and fix all foot plates to the concrete floor using the supplied chemical resin anchors, as per the Layout Plan supplied.

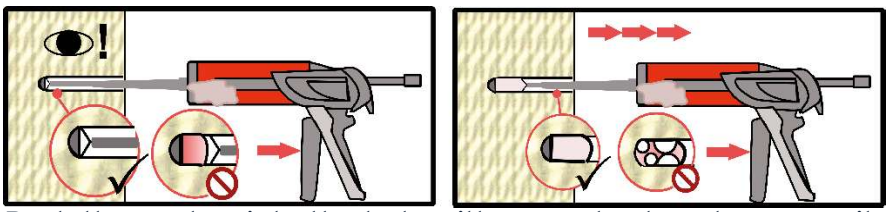


Drill a 14mm diameter hole in the concrete with a minimum depth of 100mm for the anchor to be set into.

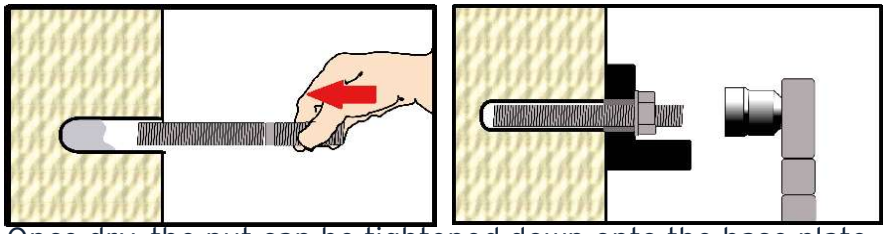
The hole must be thoroughly blown out with a blower or compressed air to ensure a clean, dry socket for the resin. Hoovering the hole will not clear all the excess dust.



Fill the hole with resin from the base to 3/4 of the depth of the drilled hole.



Push the anchor into the hole with a quarter-turn to ensure it is fully secure.



Once dry, the nut can be tightened down onto the base plate using a 24mm spanner.

Installation torque: 0.040 kNm

Pre-loading and Pillar Adjustment

Final adjustments

The design of the HeatForm pillar system allows the angle of the pillar to be adjusted, to ensure the walls are straight and true once the pool is filled and under load from the water.

Use a 24mm open ended spanner to loosen each of the four top nuts to allow the foot to move, then turn the nut under the leg plate anticlockwise (unscrew) to push the panel forwards, or clockwise (tighten) to lean the panel back.

Loosen the top nuts to loosen the pillar. This will allow the footplate to sit flat prior to the final fix. This ensures a solid base for the rest of the pool.

On the underside of the pillar, there are two nuts per bolt, which raise/lower the pillar and allow the pillar to be loaded or angled. This should be used when filling the pool, to counter any movement to the pillars and ensure the pool wall is straight.

To preload or adjust the pillar, firstly the top nut will need to be loosened on the opposite side of the direction you wish to tilt the pillar, and the opposing nut will need to be tightened.

The back nut will need to be loosened to move the pillar forward.

Once the top pair of nuts have been loosened, the nuts beneath can be wound to raise the but and tilt the pillar. This works in the opposite way if the pillar needs to be tilted back.

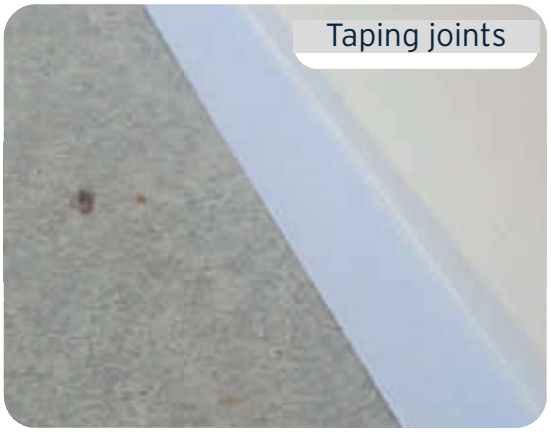
The same process on the front nuts will tilt the pillar in the opposite direction.

Liner Installation

If insulating the floor, this can now be positioned and the screed added to bring the floor to the correct depth (nominally 1.4m to give a 1.3m water depth).

Now the underfelt and liner should be installed.


Laying felt lining


Taping joints


Fixing of liner


Vac liner back and fill

On the top of the panel, fix the liner lock with self tapping screws to secure the liner walls to the panel.

If the option of surround over capping has been taken, this will cover the whole top surface and will be added once the liner is in place.

Once the liner is in position, the drains and inlet flanges are fixed so that the pool can be filled.

Keep an eye on the angle of the pillars and adjust accordingly.

Pre-load the pillars before filling the pool, to allow for some flex when the water level rises.

Counter-current Swim Jets

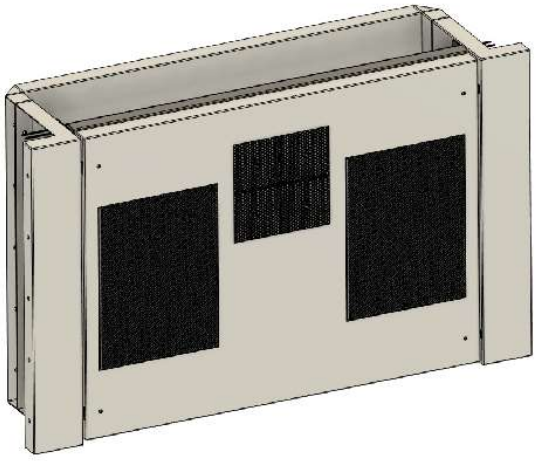
The HeatForm panel system is entirely flexible to allow many extra features to be added.

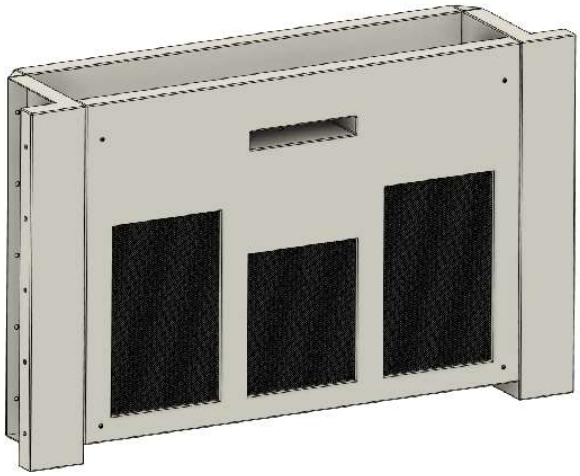
By using two extra external corners and a support rail, a recess can be formed to allow jets to be fitted flush with the pool wall, allowing more space and flexibility within the pool area.

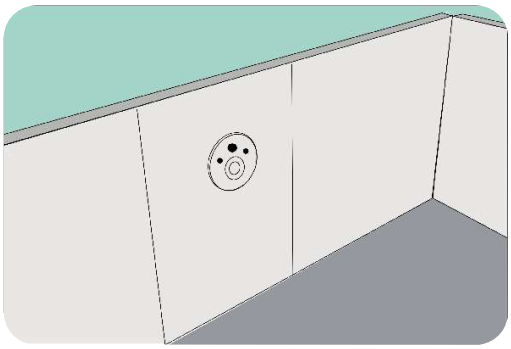
A "vanity wall" is available in a choice of finishes in order to hide the swim jet, should this be required.

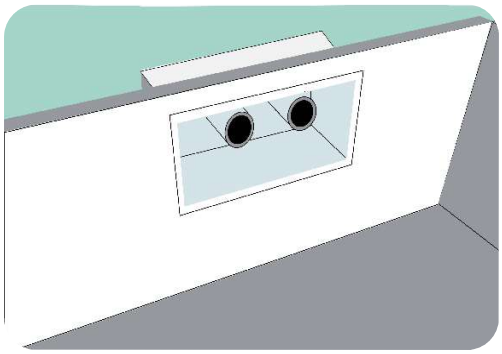
We can also supply a fibreglass housing to allow the Binder Hydrostar jet to be fitted easily and sited correctly. Fluvo and Badu counter-current units can also be positioned onto any wall; please ensure you order the prefabricated panel liner pool kit to ensure ease of installation.

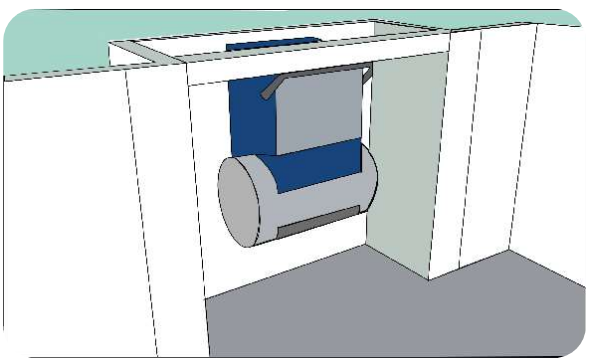
Should you have any other features you wish to include, speak to us when planning your pool.











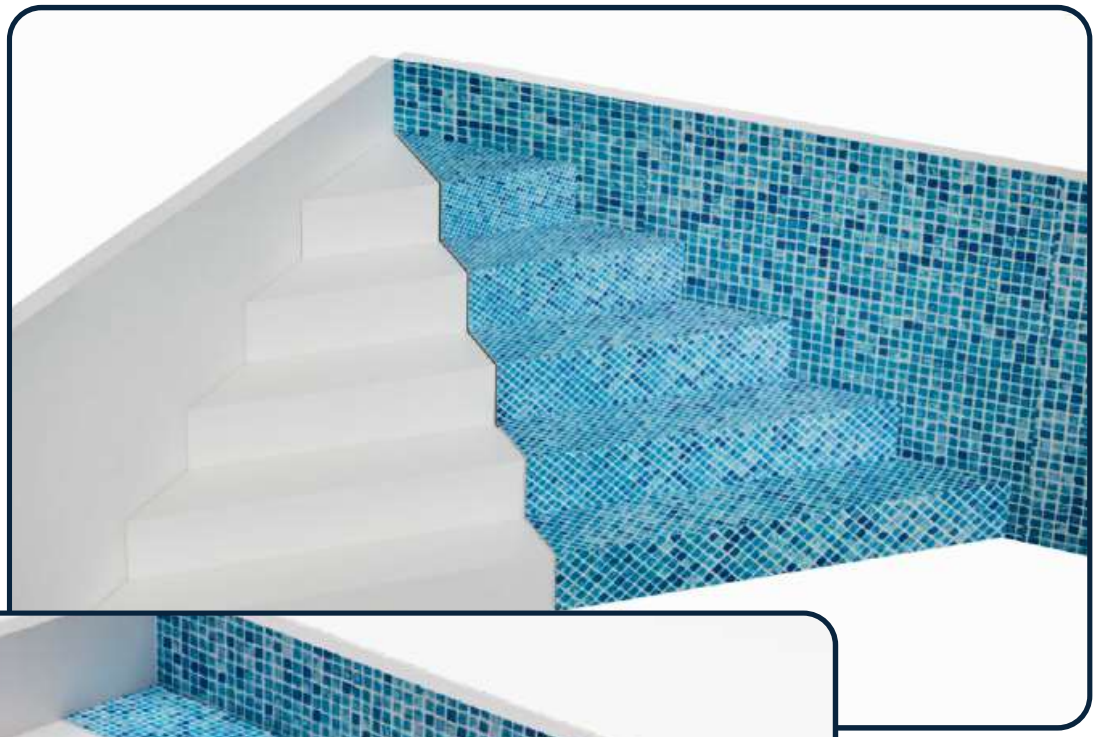
HeatForm Internal Steps for Liner Pools

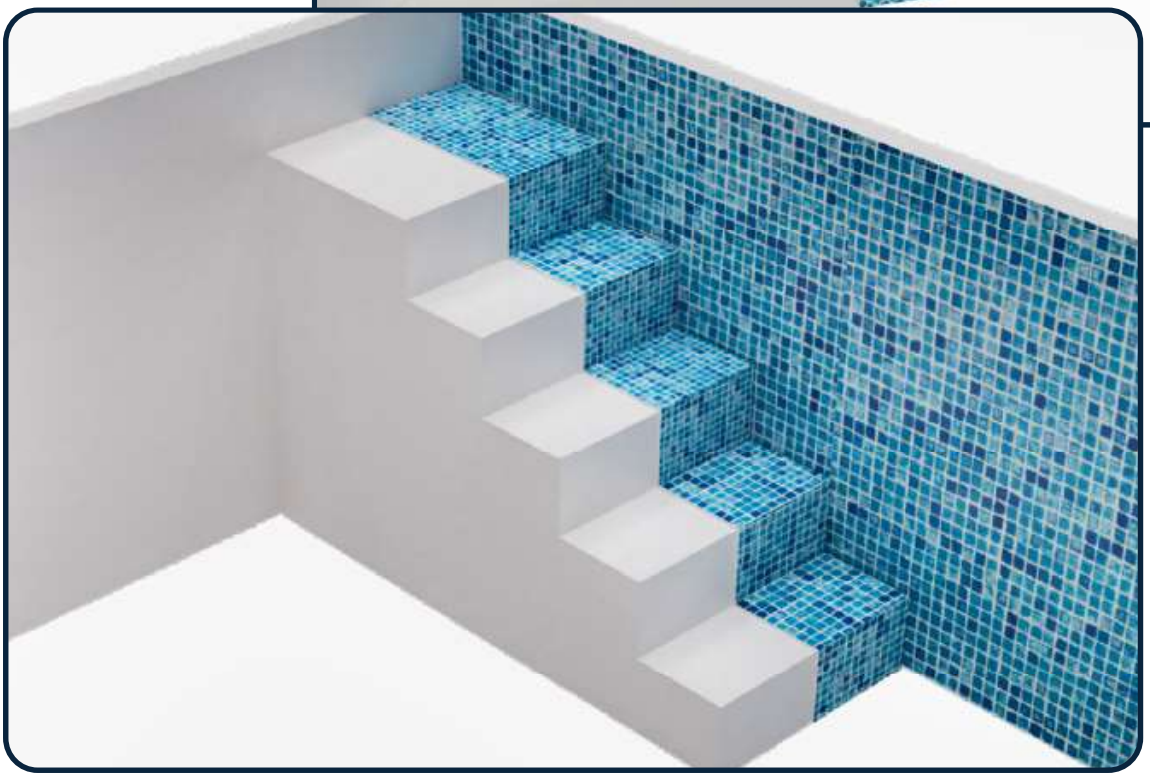
The HeatForm steps are designed to fit toght against two walls of the pool, creating a sleek and modern finish to any liner pool.

The steps are simply installed on the floor of the pool shell prior to installing the pool liner.

Suitable for installation in conjunction with both on-site lining and pre-tailored bag lining systems, the HeatForm steps are an easy and quick solution, reducing installation time and cost.

Two height options are available: 1.2m high to suit 1.5m walls, and 0.9m high to suit 1.2m walls.



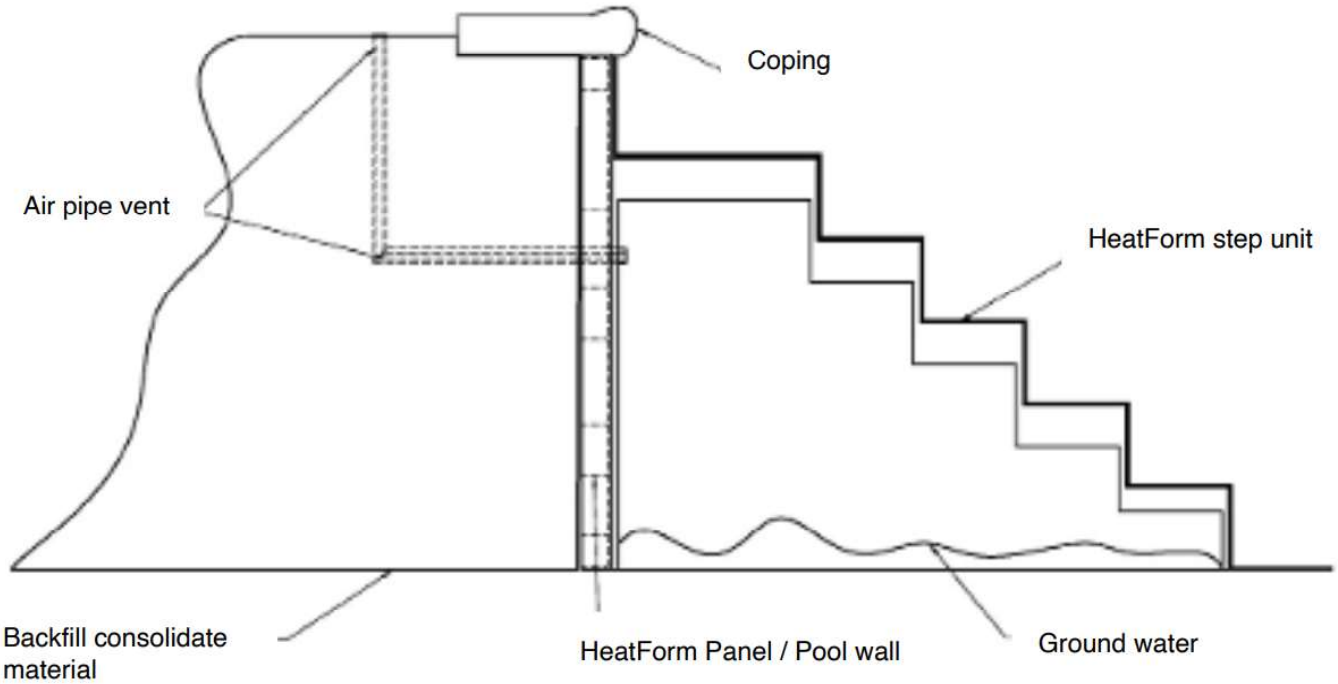


Installing HeatForm Steps - Straight Step Guide

Place the step unit flush with two edges of the pool wall, in the corner where you wish to have access into the pool.

Bead the wall edges of the step with the supplied CT1 silicone to seal the gap between the edge of the step and the wall.

Important:
If there is any chance of ground water ingress into the pool shell, you must install a vent kit through the wall. This allows the release of trapped air, avoiding damage to the pool lining.



Installing HeatForm Steps - Corner Step Guide

Corner steps are installed in the same way; they are just supplied in three pieces for easier transport.

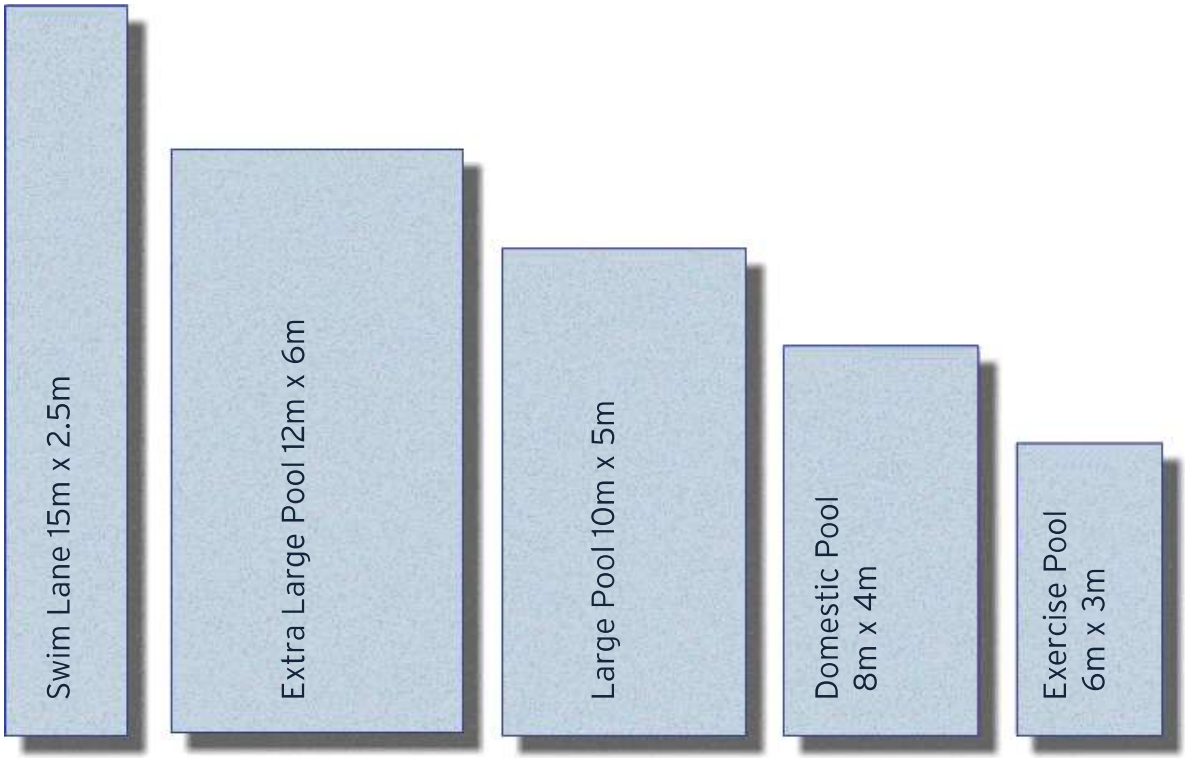
Place the first step unit flush with two edges in the correct corner. Bead the bottom edges with sealant.

Place the left-hand bottom step unit flush with one edge of the panel wall, and one edge of the first step unit. Seal any gaps and seal to the floor.

Repeat with the last unit and seal joints with CT1 as before. Once the steps are in place, you can run a bead of silicon to fully seal and watertight the units. This isn't mandatory but does provide a neat finish.

Example Pool Sizes

Using a combination of the panels, pool sizes can be made to suit almost any requirement: from a small exercise pool, up to and beyond a 15m swimming lane.



Pool Liners from Aquaflex

Aquaflex has revolutionised what can be done with a pre-tailored pool liner. Gone are the days when anything out of the ordinary was deemed impossible.

Aquaflex has pioneered the incorporation of lined steps into pre-tailored liners. The benefits are enormous, for both renovating old pools and incorporating into new pools where a less expensive option than a fibreglass or acrylic step is needed. Matching the colour of the liner to the colour of the step ceases to be a problem.

Almost any size and shape of step can be lined in this way, as long as clear and accurate drawings are supplied. The only stipulation is that there must be an absolute minimum of 6 (0.15m) of water covering the top step in order to prevent movement of the liner. The sketches below give an idea of the selection of step designs that is possible. Step edges should be finished with a very small "pencil" radius to prevent sharp edges and sand bags or other ballast should be used during filling to help keep the liner in position.

Warranty

HeatForm panels are covered by a 10-year warranty against manufacturing defects as per the terms and conditions on the following page.

Following the advised construction methods in this manual will result in a pool that is strong, stable and long-lasting. HeatForm and Lighthouse Pools are unable to guarantee the workmanship of any third party.

In the unlikely event of a problem with your pool, your first point of contact should always be your pool installer/dealer, details below:

Dealer Stamp:

Unit 7, Meadow Close - Langage Industrial Estate - Plymouth - PL7 5EX
01752 253525 - sales@lighthousepools.co.uk - www.lighthousepools.co.uk

Warranty

Heat Form

We Keep Our Promise.

Warranty Certificate

On non-blistering and non-delamination of the pool panels.

In general:

The above-mentioned warranties are applicable only for material defects and manufacturing faults. The warranty period starts on the receipt of delivery.

In case of a claim, it is necessary to present the original purchase invoice which was issued for this specific order.

Guarantee:

We oblige ourselves to carry out the repair of the faulty component free of charge within the warranty period. The faulty part will be repaired and/or replaced to be in a technically perfect condition in accordance with the age of the part.

The customer is responsible for sufficient access to enable the repair of the faulty part, costs incurred due to obstructions and delays are not covered by the warranty. The total costs for the repair must not exceed the purchasing price of that specific part.

Our indemnity expires when it is proved that the swimming pool has not been treated or installed in accordance with our terms and regulations, has been technically altered or repaired by un-authorized personnel. The warranty excludes defects caused by accidents, natural disasters and occurrences which are not caused by Heat Form.

Heat Form | www.heatform.co.uk
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