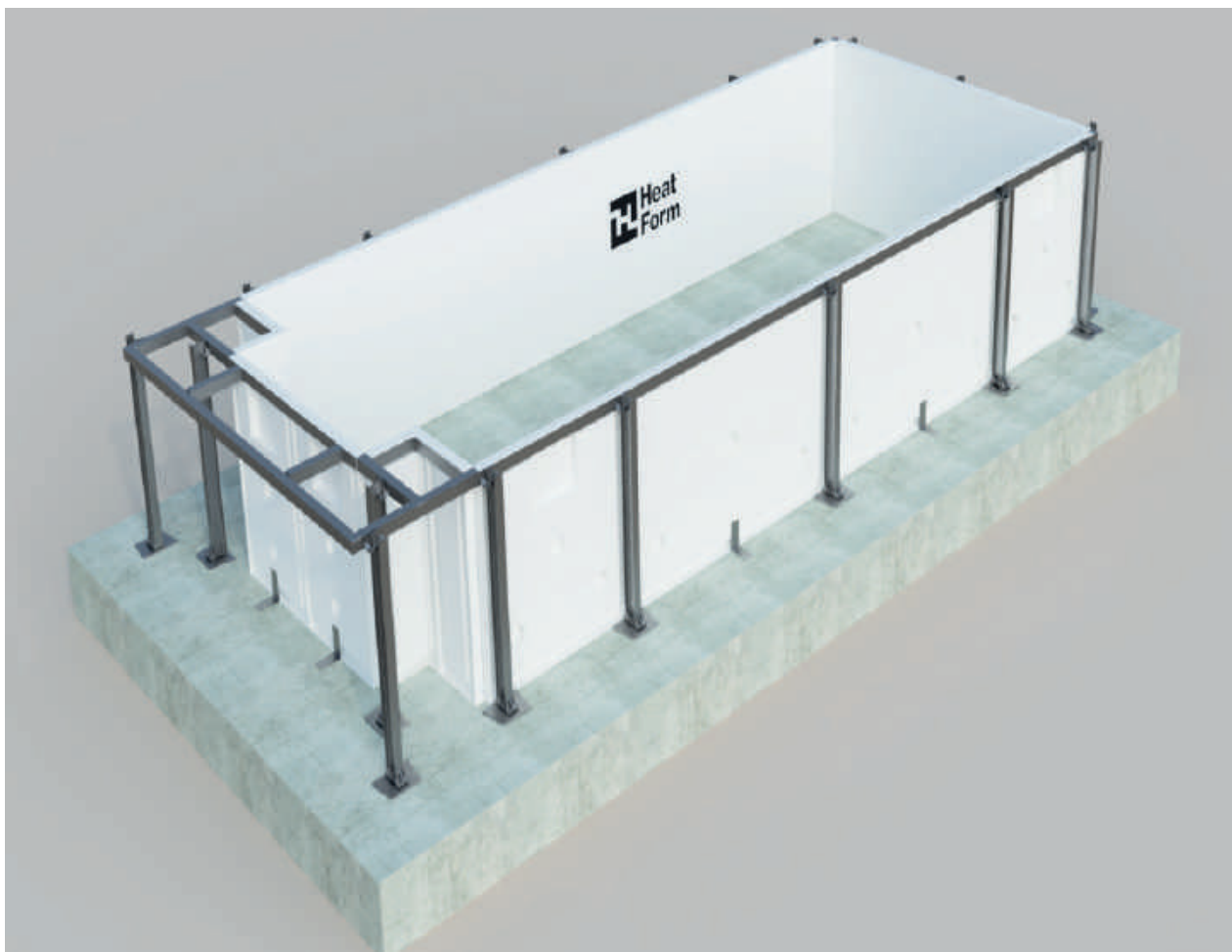


LIGHTHOUSE



Above Ground Installation Manual



**Our Comprehensive guide to installation and maintenance of our
panel pool system.**

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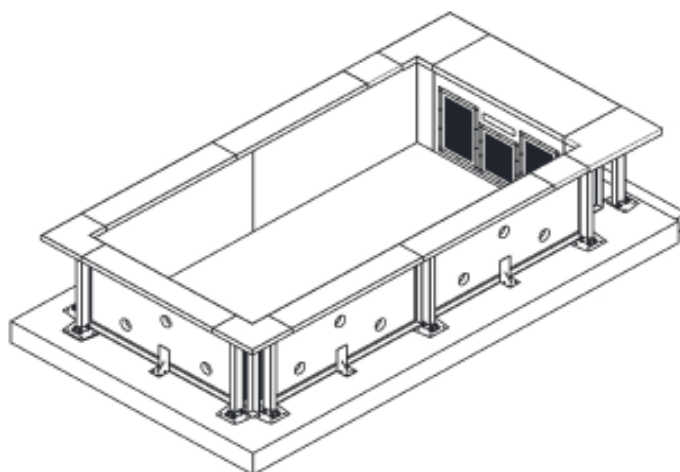
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Please Note :

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



Tools & Parts Lists



Summary of all tools and parts.

Tool / Part List - Above Ground Pools - ALL VARIATIONS

- M10 NUT
- M10 X 40mm BOLT
- SQUARE PLATE WASHER
- M16X300 GALV ALL THREAD 8.8, NUTS & 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
- EASY DRIVE SCREW 4.8mm x 22mm (100)
- PANEL GASKET TAPE (15M ROLL)
- 17MM RATCHET SPANNER
- HOLE SAW
- HOLE SAW ARBOUR
- WHITE SILICONE TUBE
- SILICONE GUN 5.5 x 50
- Self Drill Wing Tips with HF screw caps
- Silicone sealant Mid Grey Manhattan 310ml
- 1mtr Mid Grey Edge Trim

Tool / Part List - Above Ground Pools With Swim Jet

As Above, including the following additional items:

- HEATFORM 1.12 Jet Panel(Colour TBC)
- L Brackets for Jet Panel
- Jet Panel gasket
- Jet Panel Button bolt
- Nyloc Nut for Jet Panel
- Penny washer 15mm for Jet Panel

Introduction

HeatForm Panel Pool System

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

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

Thoughts for your pool:

The pool should ideally be located on level ground and a sensible distance from the house as you will be most likely using the house conveniences - toilet, shower 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 and if possible, keep this technical equipment close approx 4-5m. A small garden shed, or summer house is a good option for these items.

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 electric for the pump and heater system and mains water to fill and top-up the pool, if not using electric consider where the gas or oil supply is coming from.

Also think about drainage and where the filter 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 and bring concrete into 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 off to children and animals. A suitable wall or fence around the pool is a good idea and slows down wind chill, helping reduce its cooling effect and reduces debris from being blown into the pool.

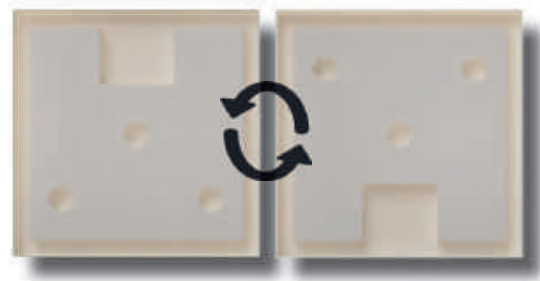
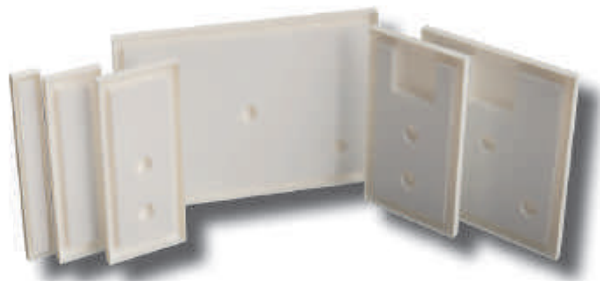
Most councils in the UK do not require you to have planning permission for an outdoor swimming pool on your property. However, if you are in doubt it is always best to ask the question to your local planning office.

Introduction

Continued....

The HeatForm panel will give you a smooth clean wall system, to be mounted onto a concrete foundation and backfilled, allowing a PVC liner to be placed inside to make the pool watertight.

The system has invertible panels that allow you to create openings for lights, skimmers inlets and outlets by cutting the pre-positioned openings to fit a standard ABS panel pool fittings in position. Every attempt has been made to ensure that common components are 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. Ensure 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 or bag liners can be used to suit the requirements of the pool. The installation should be carried out under the guidance of a professional swimming pool builder.

The respective installation, service and operation instructions need to be followed.

The installation instructions are only valid under the following conditions:

- ground water pressure has been managed and removed from the site
- the maximum permissible ground pressure is assumed at 100 KN / m²
- pressure from surrounding structures does not impose on the floor or walls of the pool

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 for the pool hall being used.

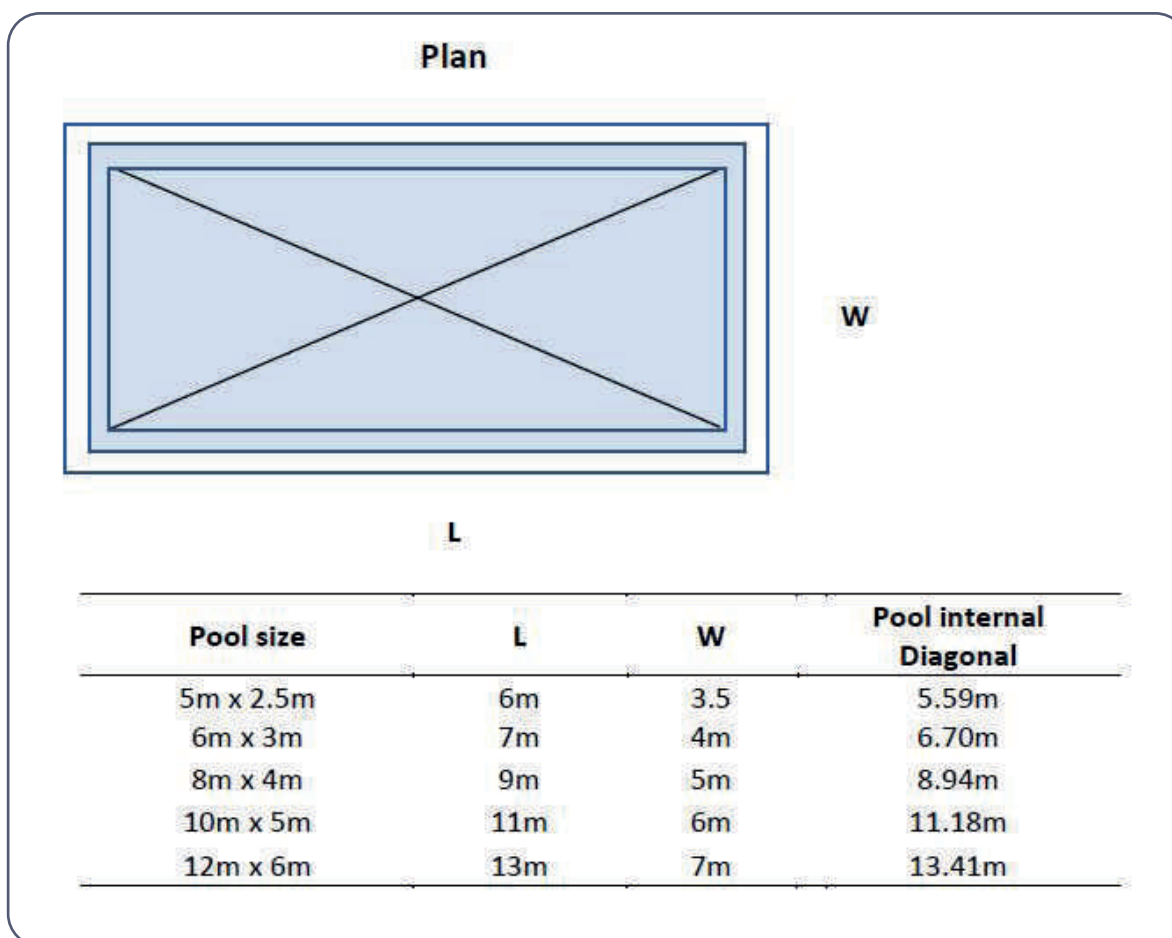
Due to the manufacturing process and the elasticity of the pool panels, a measurement tolerance should be taken into consideration of +/- 3mm per panel.

The Pool Slab

Setting Out The Pool.

Set your datum point. Mark out the ground to show the position of the pool and where it is to be situated. It is advised to 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, then an over dig should be marked 500mm wider to allow a clear dig space around the construction of the panels and steelwork.



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.

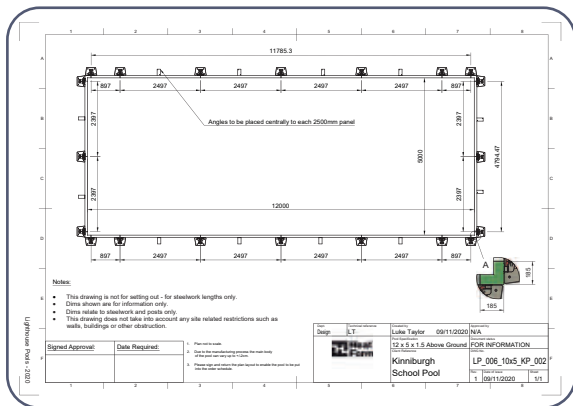
However the foundation that the pool sits on is very much determined by the type of ground that the pool is being put onto. We would suggest that you seek advice from a structural engineer or local pool builder to ensure that the correct design is used to support the pool structure correctly.

Setting Out

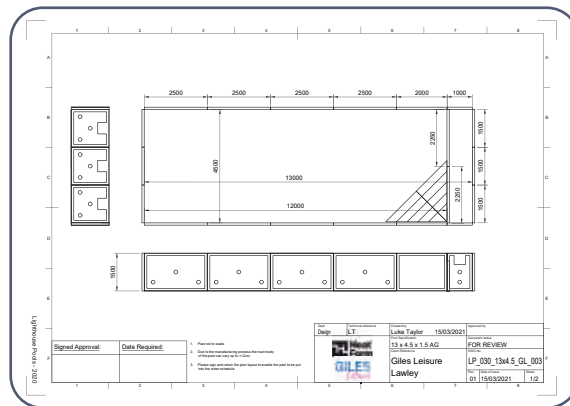
Component and worksite checks.

The HeatForm system comes with a series 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 also show the position of any fittings that have been added to the design. The drawings do not show slab or pool dig design, this should be designed by a specialist or engineer.

Before starting, layout 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 and footplates.

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

With a string line mark out the four corners of pool wall. Then layout the panels along these lines to create the shape of the pool, checking against your panel plan.

Double checking your diagonal dimensions to make sure everything is square, using the table on Page 5 to check measurements.

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



Panel Preparations

Fittings and Fixings.

Depending on how level the type of footing you are 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 panel 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 job is to stand the panels into their chosen location..

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

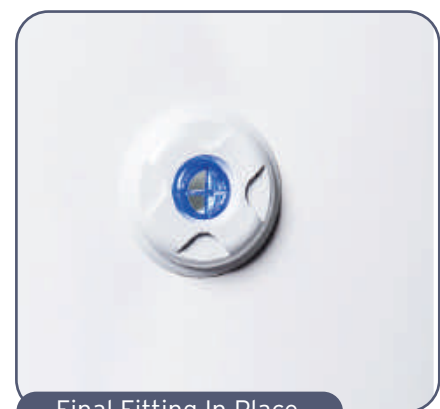
The rectangular position for the skimmer should be marked and four corners drilled from the front before using a jig saw to open the aperture to suit your desired skimmer choice.



Drilling Of Hole



Placing Fitting



Final Fitting In Place

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

Assembly Of Panels

Erection and Connections

At this stage the panels can be lifted into their positions ahead of tightening and boxing out of 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 - the panels can start to be assembled in the arrangement 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 and level and even.

As each panel is connected and placed into position, 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

Erecting the Steel Structure

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 accommodate the beams in the top flange, with the beams being connected with internal sleeves and Holo-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 Drawing).



Internal Sleeves Supplied for connections of beam



Place the Holo-Bolts in location loosely

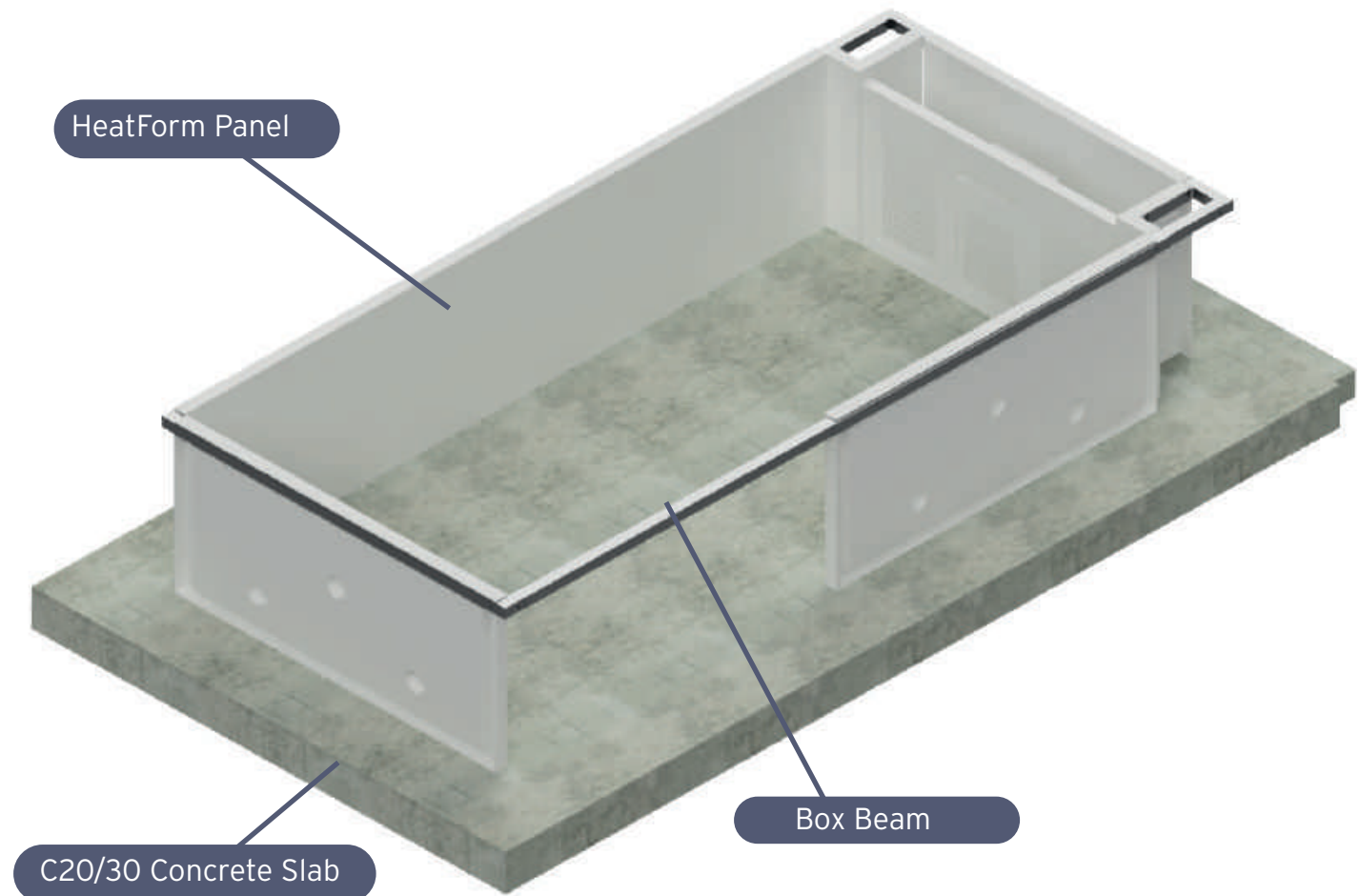
IMPORTANT -

Do not tighten any of the captive nut Lindapters Holo-Bolt fixings at this point!

Steel Box Beams

With the box beams in place the and 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 of the pillars to the frame, to ensure nothing has been missed.



Panel removed for clarity

With all the panels loosely connected and stood into positions with the box beam, the structure will be self supporting and allow you to move onto 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

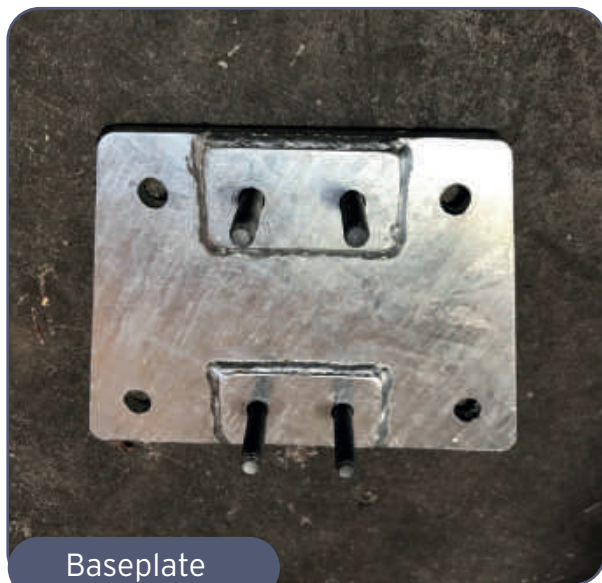
Pillar Uprights

Checks & Assembly

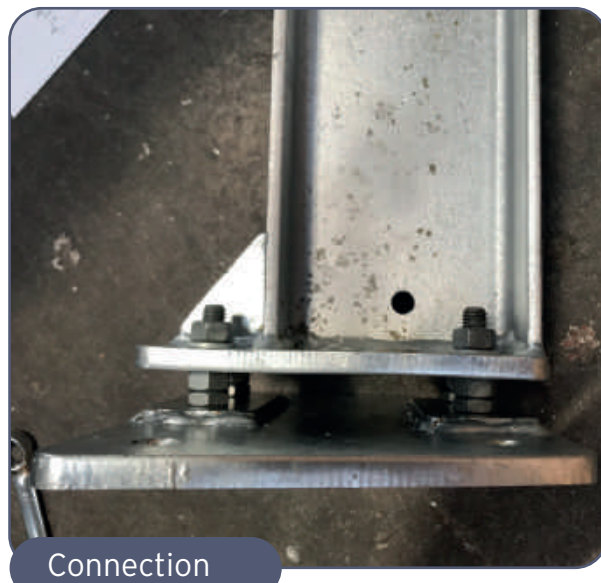
The pillars will arrive pre-assembled but it is recommended to check all parts before commencing with the fixing of the pillars to the box beam.

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 - with two to each corner.

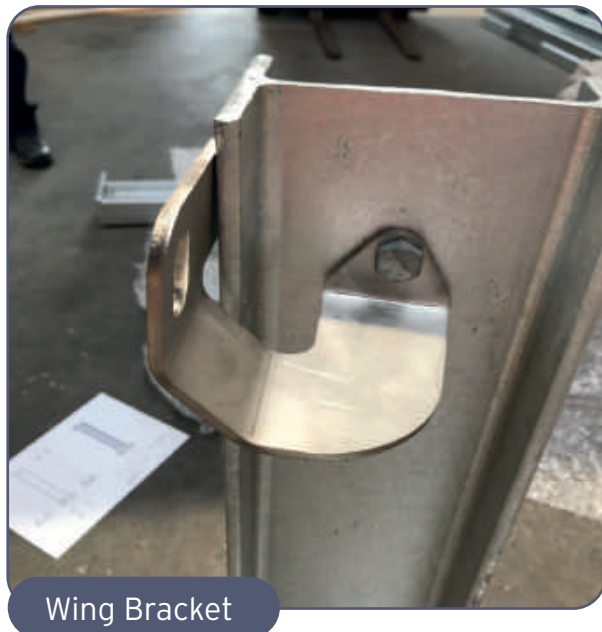
Please refer to your layout drawing for confirmation of pillar locations.



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 in longer runs.

Note: Always refer to the plan before positioning pillars.

Pillar Uprights

Placing around the pool.

Note: Please refer to the layout drawing 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 below) should be loosely fitted through the wing bracket of the pillar and into the corresponding hole on the box beam. (The bolts will be in place from the previous step, they will need to be removed and refitted through the same holes)

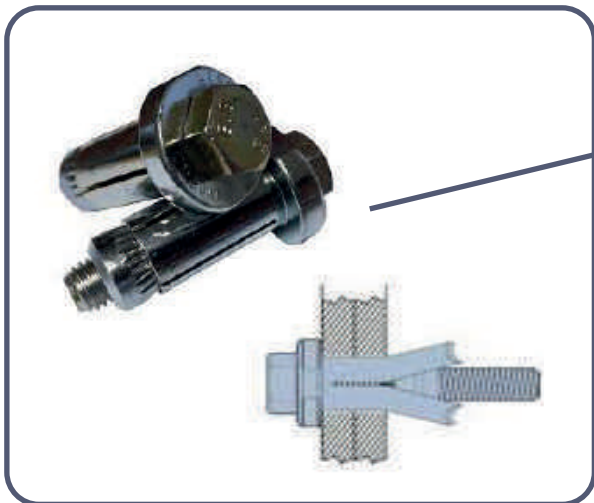
(Do not tighten fully until you are happy with the arrangement)



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 wing nuts as shown above.



The next step is to tighten the pillars against the box beam, to tighten a Holo-bolt you will need an impact driver and spanner of correct size



Hollo Bolts are used to create a strong connection between the pillars and box beam, the design of the bolts mean that once tightened they will be very difficult to remove and should only be fully tightened once they are in their final position.

(Tools required are listed at the start of this manual)

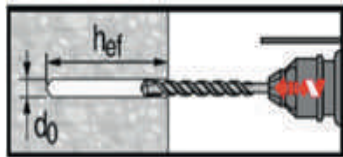
Pillar Uprights

Final Fix.

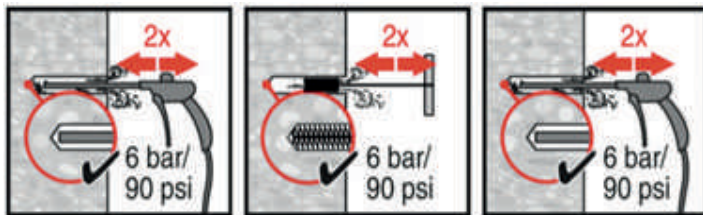
Before fixing the feet to the floor loosen the adjustment nuts so that the feet sit flush to the floor then they can drill and anchor. This will avoid pulling the panels out.

Now proceed to drill and fix all foot plates to the concrete floor using the supplied chemical resin anchors, as per the layout plan (Supplied Drawing).

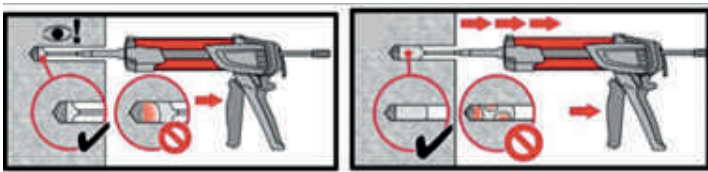
Drill a 14mm diameter hole in the concrete with a minimum depth of 100mm for the anchor to be set into.



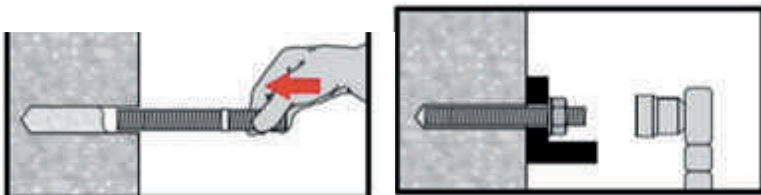
The hole is to be then thoroughly blown out with a blower or compressed air to ensure a clean dry socket for the resin (hoovering the hole does not clear the excess dust).



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 1/4 turn to ensure it is fully secured.



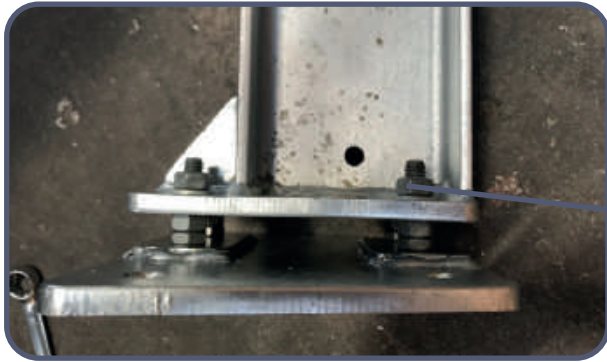
Once dry the nut can be tightened down on to the base plate.

Installation torque: **0.040 kNm**

Pre-loading & Pillar Adjustment

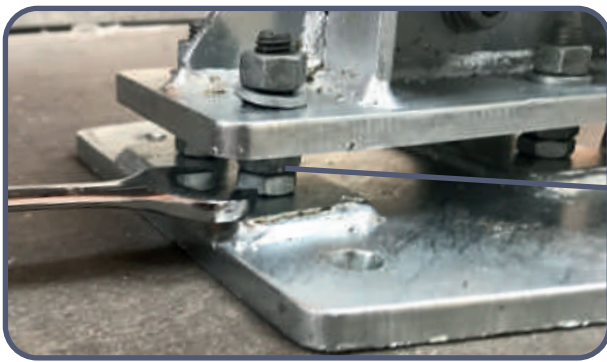
Final adjustments.

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. 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 forward, or clockwise (tighten) to lean the panel back.

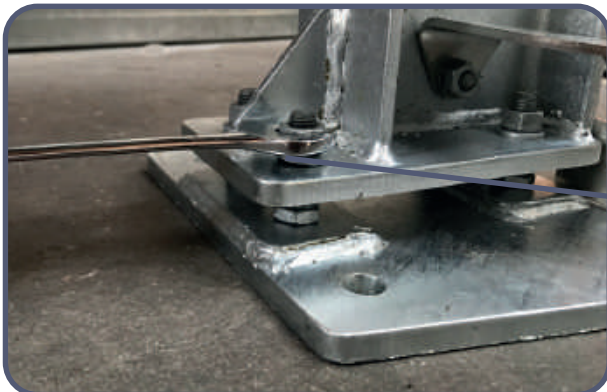


Use a 24mm open ended spanner

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 and 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 & the opposing nut will need to be tightened

I.E the back nuts will need to be loosened to tilt the pillar forward.



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

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

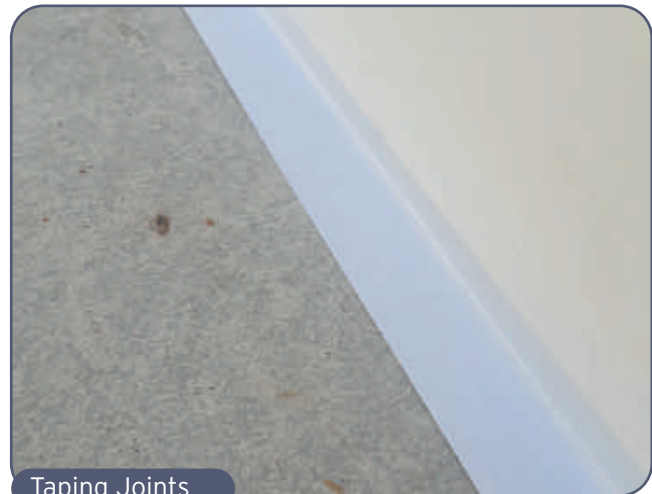
Liner Installation

Preparation & Installation.

If insulating the floor this can now be positioned and the screed added to bring the floor to the correct depth (Nominal 1.4m to give a 1.3m water depth) Now the underfelt and liner should be installed.



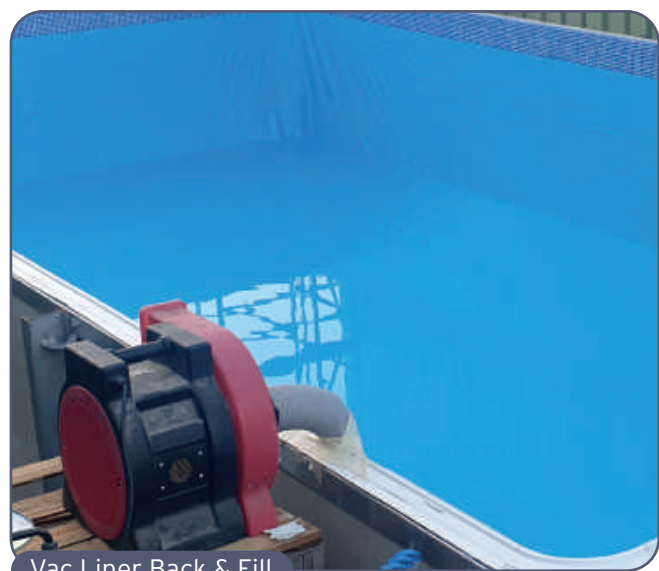
Laying Felt Lining



Taping Joints



Fixing of Liner



Vac Liner Back & 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 the 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 the pool can start to be filled, remember to keep an eye on the angle of the pillars and adjust accordingly.

Note : It is recommended to pre-load the pillars before filling the pool to allow for some flex when the water level rises.

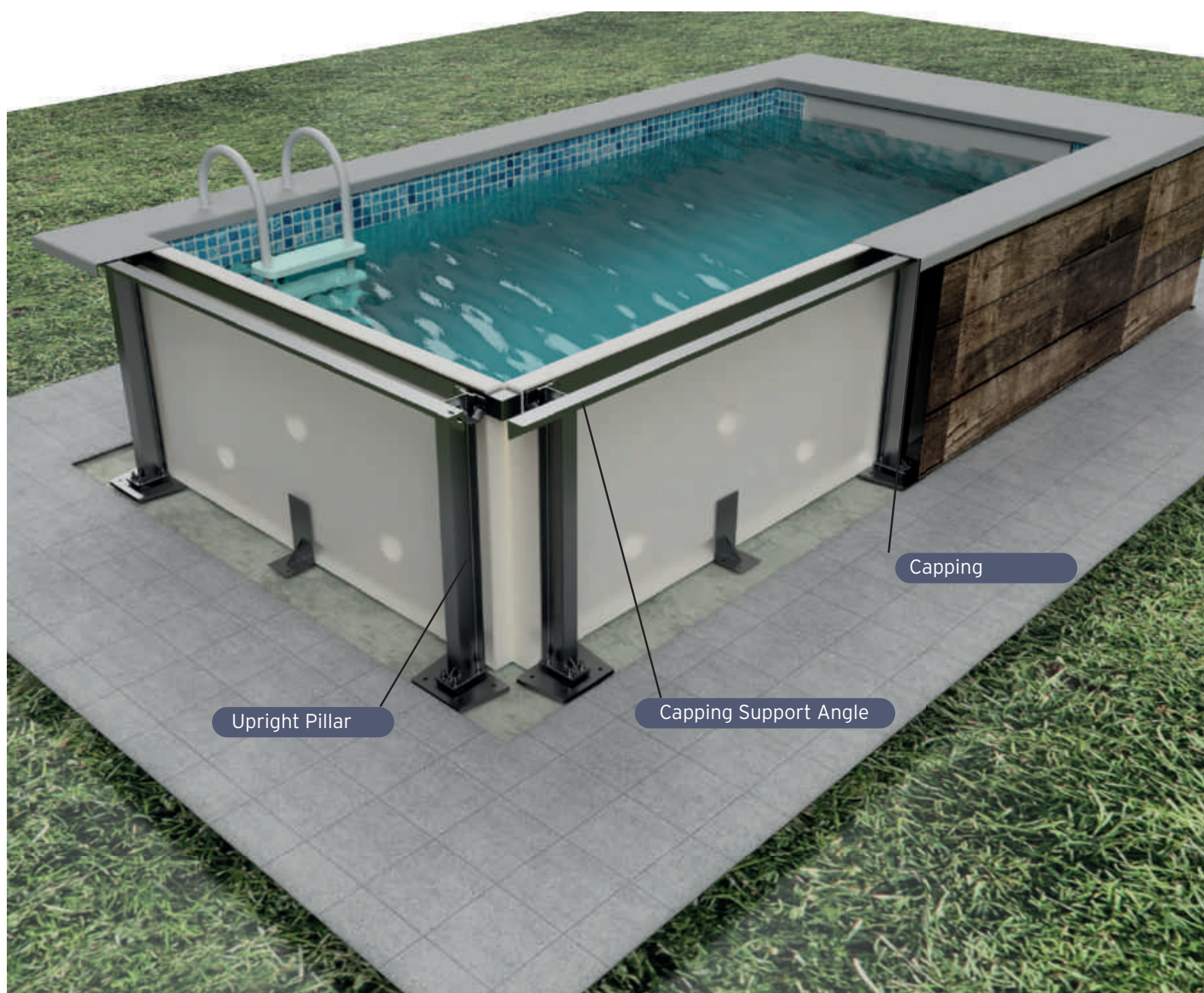
Capping & Angle Support

The HeatForm above ground system has been designed to allow the easy installation of the capping. The upright pillars come pre-drilled with slotted holes and angles have been supplied to be bolted onto the pillars through slotted holes on the angle. The slots allow you to adjust the height to create an angle on the top surface, for water run-off.



To fix the angles to the outside edge of the pillars, nuts, bolts and washers are supplied. The angles will need to be lifted into place and fixed into position and then levelled.

Refer to layout drawing for location of angles. Once these angles are in place, ensure they are secure and you will be ready to fix the capping units through the top face, using the supplied self-drilling fixing screws.



Capping Installation

Installing capping units.

The final step in the build is to finish the pool with the HeatForm Capping units, these have been specially designed to sit around the top edge of the pool creating a clean finished look to the pool build.



Each unit has male and female connections to ensure a clean connection on all joints, this allows the capping to sit flush without any additional work.

The first stage is to choose a corner and work around the pool piece by piece ensuring the units sit flush and secure within the connection shown above. Once the units are in place and sitting flush they can be fixed down to the angled and panel top, there will be preformed, countersunk holes in the unit for this. Once fixed the screw heads should be covered with caps provided & joints should be finished with CT1 Sealant Provided.



Start In Corner



Lay Out Pieces Before Fixing



Screw Through Countersunk Holes



Cap off screws with caps provided



Counter Current & Swim Jet

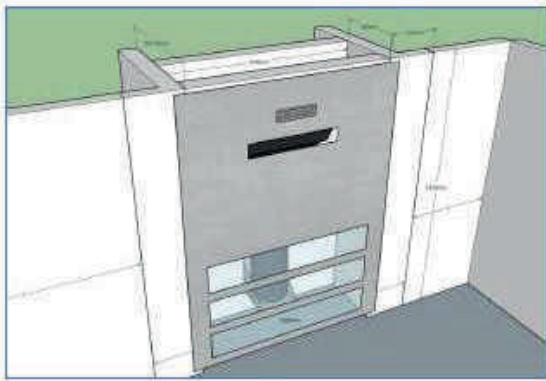
Sports Pool Items.

The HeatForm panel system is entirely flexible to allow many extra features to be added. Here are a few examples of the types of swim jet that can be installed.

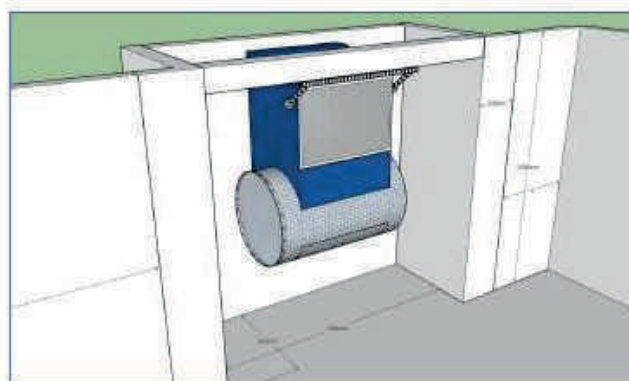
If you have taken the option of the Heatform jet please refer to the jet manual for installation into the recess housing.

By using to external corners and a support rail, a recess can be formed to allow the HeatForm Jet and Fastlane machines to be fitted flush with a pool wall allowing more space and flexibility inside the pool area.

HeatForm Jet Counter Current

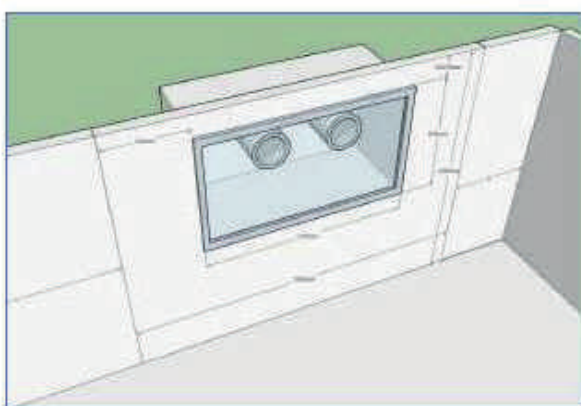


Endless Pools Fastlane machine

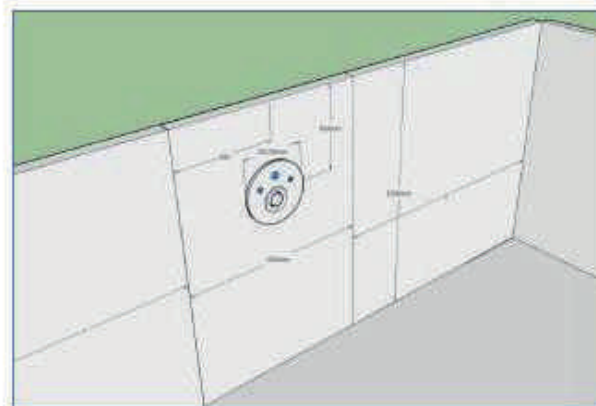


We have a panel to allow the Binder Hydrostar housing to be fitted into the pool wall and sited correctly to ensure maximum flow and efficiency with ease of installation.

Hydrostar turbine



Fluvo and Badu's swim jets



Finally, Fluvo and Badu's counter currents can be positioned onto any of the walls, ensure you order the prefab panel liner pool kit to ensure ease of installation.

Thankyou for choosing HeatForm for your Pool

If you need further assistance, please get in touch with one of our experts today:

01752 253525 • sales@lighthousepools.co.uk

 **Heat
Form**

 **LIGHTHOUSE**



AQUAFLEX
The UK's leading Liner specialists

**ROLLO
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