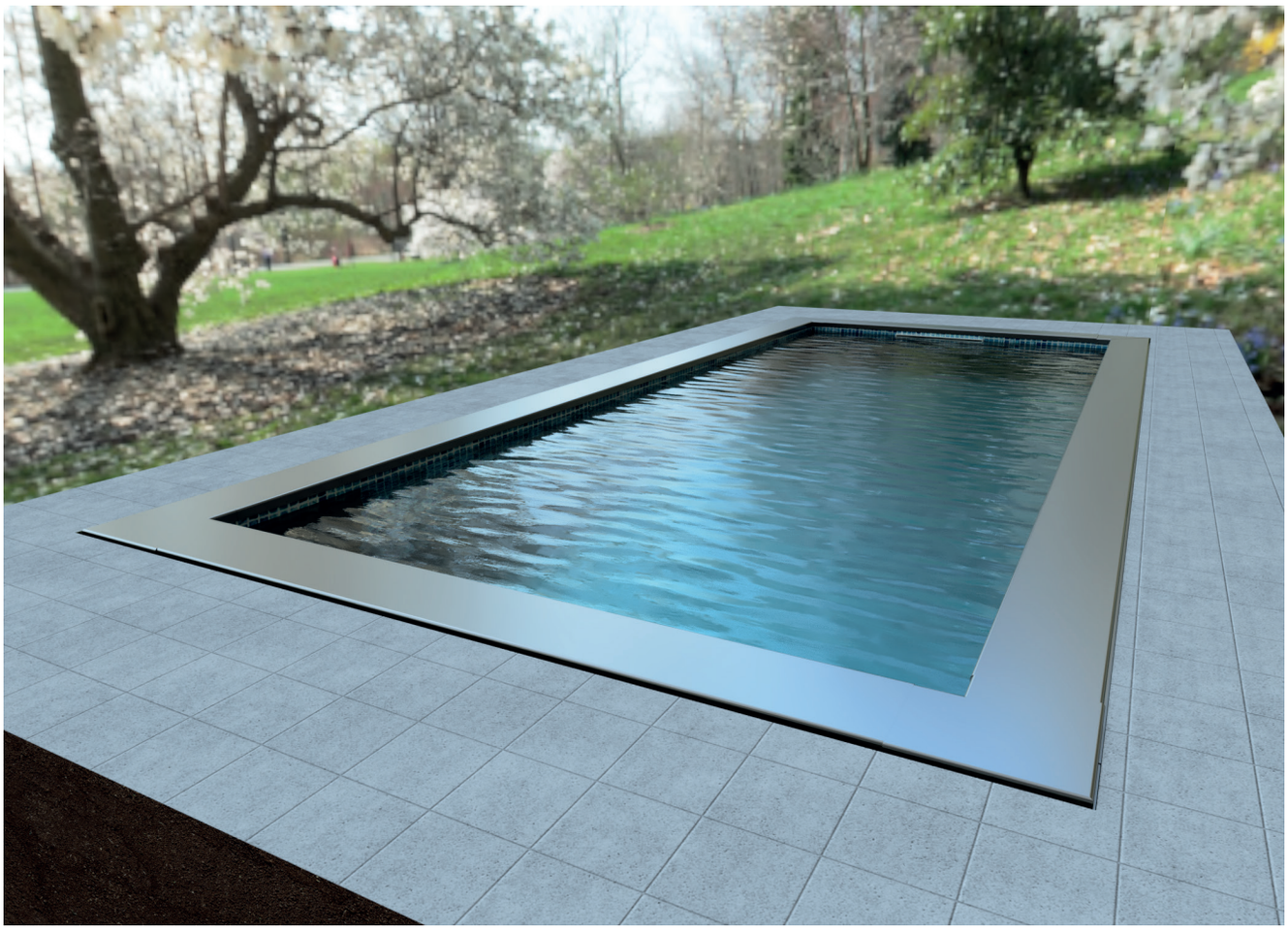
LIGHTHOUSE

Heat Form®

In-Ground Installation Manual



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

Unit 7 Willow Close · Langage Ind Est. · Plymouth · PL7 5EX
01752 253525 · sales@lighthousepools.co.uk · www.lighthousepools.co.uk

Contents

What's Inside?

2 ..... Introduction.

4 ..... The Pool Dig

6 ..... Setting Out

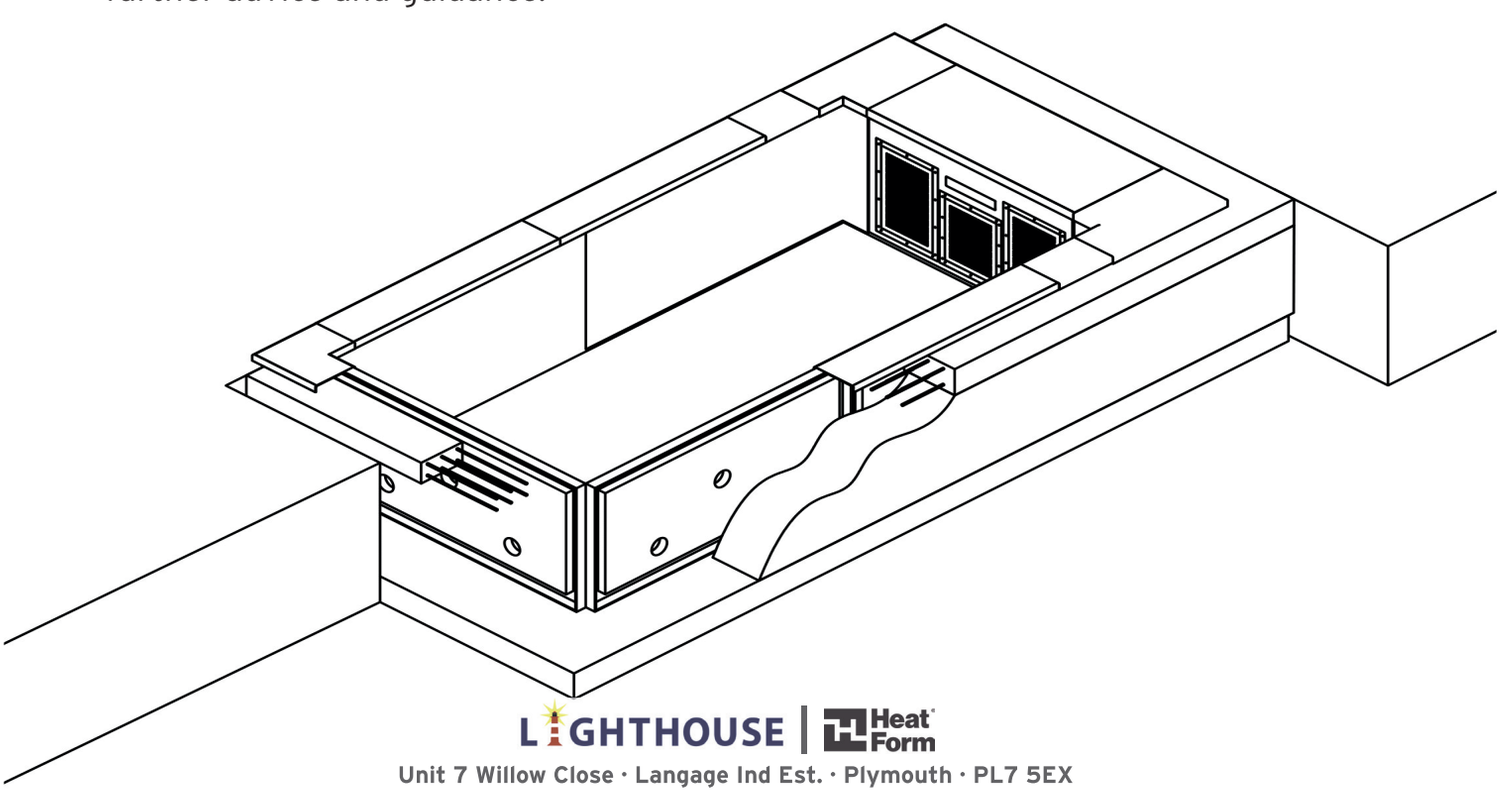
7 ..... Assembly of Panels

9 ..... Backfilling.

11 ..... Ring Beam Installation.

12 ..... Completing The Pool.

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.



LIGHTHOUSE | Heat Form

Unit 7 Willow Close · Langage Ind Est. · Plymouth · PL7 5EX

01752 253525 · sales@lighthousepools.co.uk · www.lighthousepools.co.uk

Introduction

HeatForm Panel Pool System

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 a swimming pool into the ground whilst ensuring that the quality and design are of the highest standards.

Location Of Pool & Construction Considerations.

The pool should ideally be located on level ground and a sensible distance from the house as you will most likely be 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.

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 electric for the pump and heater system and mains water to fill and top-up the pool, also if not using electric where the gas or oil supply is coming from. Also think about drainage an where the back wash 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 in to the area for use in the foundation and backfill.

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 and slows the wind to help reduce its cooling effect and reduces debris getting into the pool.

Planning & Councils

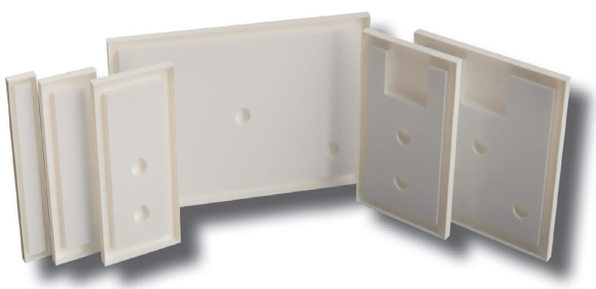
Most councils in the UK do not require you to have planning permission for a swimming pool on your property. However, if you are in doubt it is always best to ask the question to your local planning office.

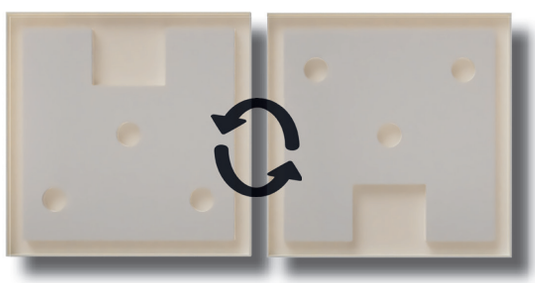
Introduction

Continued....

Heatform panels will give you a smooth clean wall system, to be mounted onto a concrete foundation using or specially desigend pillar system, allowing a PVC liner to be placed inside to make the pool water tight.

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 in position (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 guide lines).





NOTE : It is advisable to seek help and clarification about the build from a professional swimming pool builder. The respective installation, service and operation instructions need to be followed.

Backfilling around the panel system should be done to the recommended values and an if done correctly the structural report attached should form the basis for installation.

(Please see our the backfilling section of this manual Pg 9).

These calculations and the installation instructions are only valid under the following conditions:

- Installation in unbroken, fresh soil 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 structure.

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 and the backfill being used to support the pool walls.

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

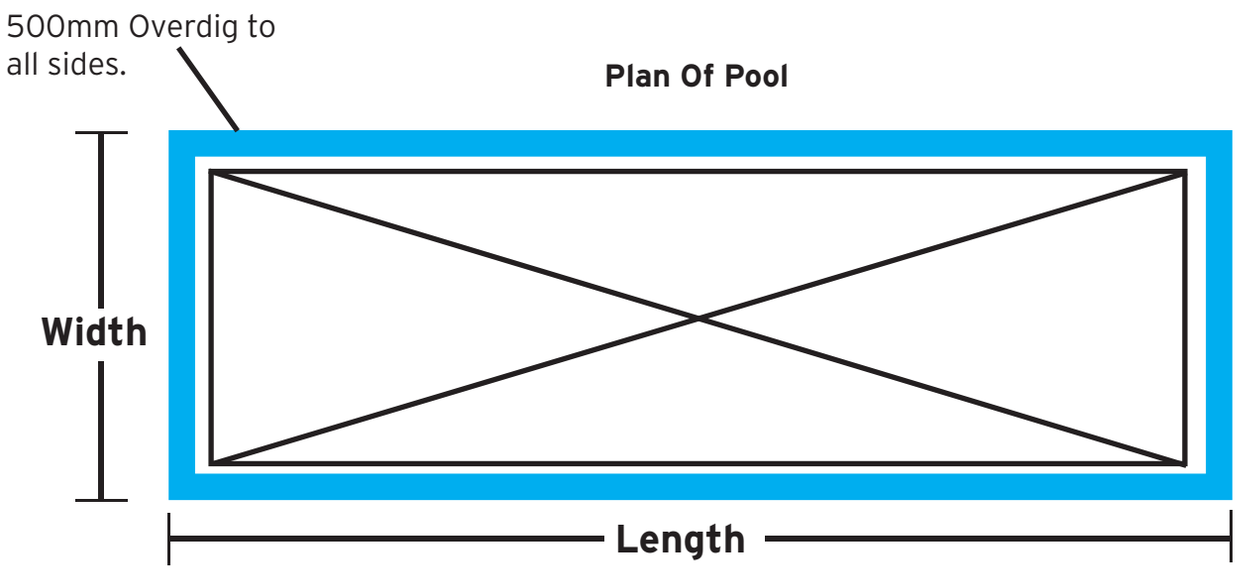
The Pool Dig

Preparing the ground.

Proper preparation of the ground prior to installation will enable a smooth and hassle free erection of the panels, steps in this section should be followed carefully to ensure you are properly prepared for the panels to be installed.

Firstly, 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 advise 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 clearclean dig space around the construction of the panels.



Pool Size	Dig Length	Dig Width	Internal Diagonal
6 x 3m	7m	4m	6.70m
8 x 4m	9m	5m	8.94m
10x 5m	11m	6m	11.18m
12x 6m	13m	7m	13.41m

The dig will need to be the depth of the panel – 1.5m or 1.2m, then the outer perimeter should include the depth of the foundation : 100- 150mm, plus an additional 150mm for a drainage layer to be placed next to the foundation. Don't forget to add the thickness of the coping stone to the top of the panel

It is always advisable to have a drainage layer around the pool to minimise the risk of water pressure damaging the pool. The drainage layer should be approx. 150mm deep with a soakaway pipe laid out to a sump, where water can be pumped away from the pool into a ditch or soakaway drain.

The Pool Dig

Additional Information : Skimmers, RingBeam

Where a skimmer is to be positioned extra clearance should be allowed..
(A total of 500mm x 500mm) to allow the skimmer box to be built in and plumbed.

For a constant depth pool a 100 - 150mm concrete slab or strip foundation is usually more than sufficient to act as a base across the width and length of the pool.

For deep-end pools a concrete ring beam can be used to locate and level the panel walls.

This allows the earth from the central base area to be removed and a hopper or slope gradient can then be formed as required in the base of your pool.

NOTE :
The foundation that the pool panels sit on is very much determined by the type of ground that the pool is being put into.

Setting Out

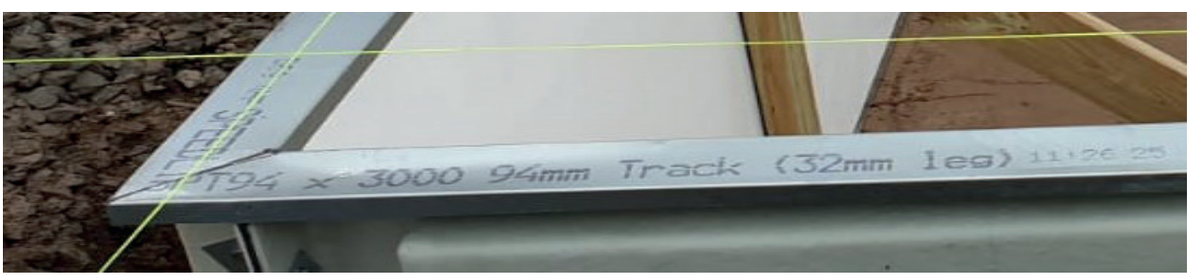
Preparing the ground.

The HeatForm® system comes with a galvanised track which reduces the amount of work needed to be done behind the panel walls.

The tracking allows you to keep the overdig down to a minimum width. 300mm is plenty of room for the pipework to be neatly placed behind the panels, extra room should be left in the corners and around the skimmers to allow better access - Approx 300mm widening to 500mm at the top.

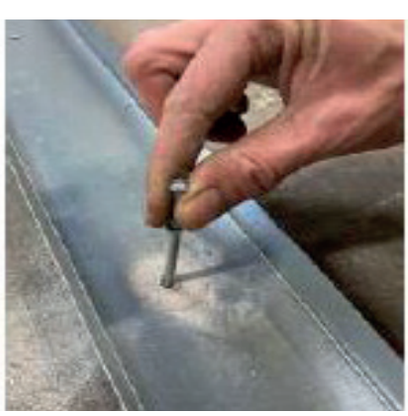
It is wise to open the dig further to gain acess safeley to the back of the panels - for example 300mm widening to 500mm at the top.

This tracking comes in standard lengths and corner sections, the length may need to be cut on-site using a saw or angle grinder.



With a string line mark out the four corners of pool wall. Then layout the tracking along these lines to create the shape of the pool. Double checking your diagonal dimensions to make sure everything is square, using the table on Page 5 to check diagonal measurements.

Place the corners in the correct positions and then lay the straight track out in between. Once cut and positioned around the perimeter, the tracking is easily drilled and fixed to the concrete with the supplied plastic plugs and 50mm screw pins.



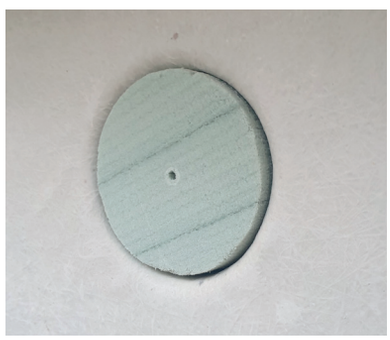
We suggest that 3 of these are used per 3m length.

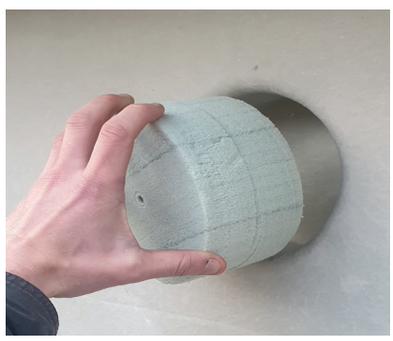
Assembly Of Panels

Fittings and Fixings.

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 the pool dig.

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 jig saw to open the aperture to suit your desired skimmer choice.

Drilling Of Hole

Placing Fitting

Final Fitting In Place

Assembly Of Panels

Fixing Panels.

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 tighten the bolts and sqaure washers to each panel. Now place each panel into the galvanised channel system. This fixing stops the foot of the panel moving whilst concreting the lower ring beam.

Start at one corner and fix all the nuts and bolts (finger tight) with washers 5 sets to each panel joint. 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

Next the brace bars should be connected to the panels via the top bolt fixing to each panel joint. Anchor the stake end into firm ground behind the dig. This should be secured and will stay in place, so may need to be cut into the surround ground. This brace should be concreted over and permanently left in the ground.

Using these adjustable brace bars at each panel joint, the panels should be adjusted for vertical. This is easily done by adjusting the fixings on the threaded rod until the panel moves into the correct position. A string line along the front top edge will help guide you to level and square.

Brace Bars in Location

Backfilling

Wall Support.

Once everything is straight and true, backfill in 2 lifts to a depth of approx. 300mm with C20/GEN3 concrete. This creates a structural support to the base of the panels.

Now the plumbing can be connected to the filtration fittings and pressurised with air to check for leaks. It is good to do this now as the pipework is easily accessed. It is good practice to surround pipework in sand to protect it and if long runs are used back to the plant room insulation around the pipes will assist with heating efficiency.

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)

There are now two options to the final part of backfilling the pool, It can be done using the pool water to support the wall structure as you go, or the use of scaffold boards and Acro props is a good way of supporting the walls so that the backfill can be added and the surround finished before the liner is placed and water added to the pool.

The backfill should match the water level with an overlap of no more than 200mm water to backfill to ensure equal pressure inside and out ensuring the panel stays straight and true. Astring line along the length parallel to the panel will give an easy marker guide.

If using Acro props to support the walls during backfilling then, these should be positioned on the length supporting the base of the panel at each joint and in the centre of the 2.5m panels. Across the width support across the each of the panel joints
This low level support will ensure the panels stay in position while the concrete base foundation is poured. Once this base foundation is dry, the ground anchors should be adjusted to ensure the walls are vertical.

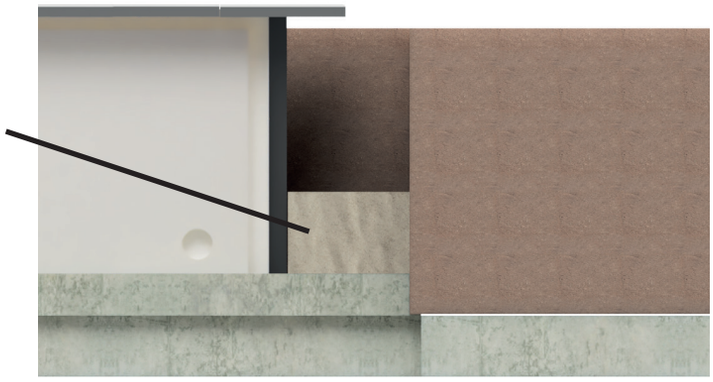
At half depth the supports should be adjusted and re-aligned 300mm from the top of the pool.

Acro Props or similar support system:

Backfilling

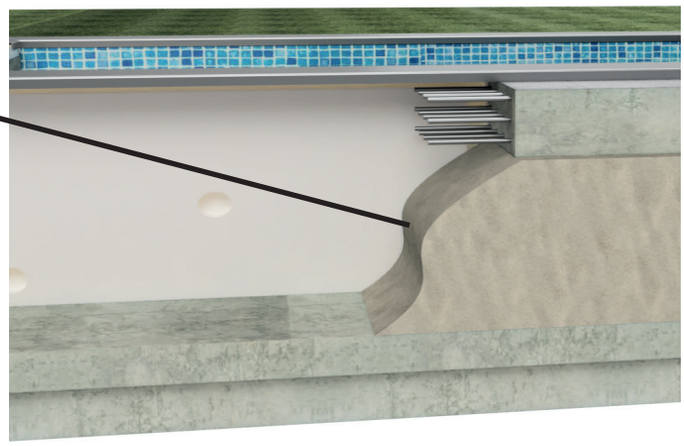
Now the main backfill behind the panel can be added, this should be a weak DRY lean mix concrete to the ratio of approx. 16:1.

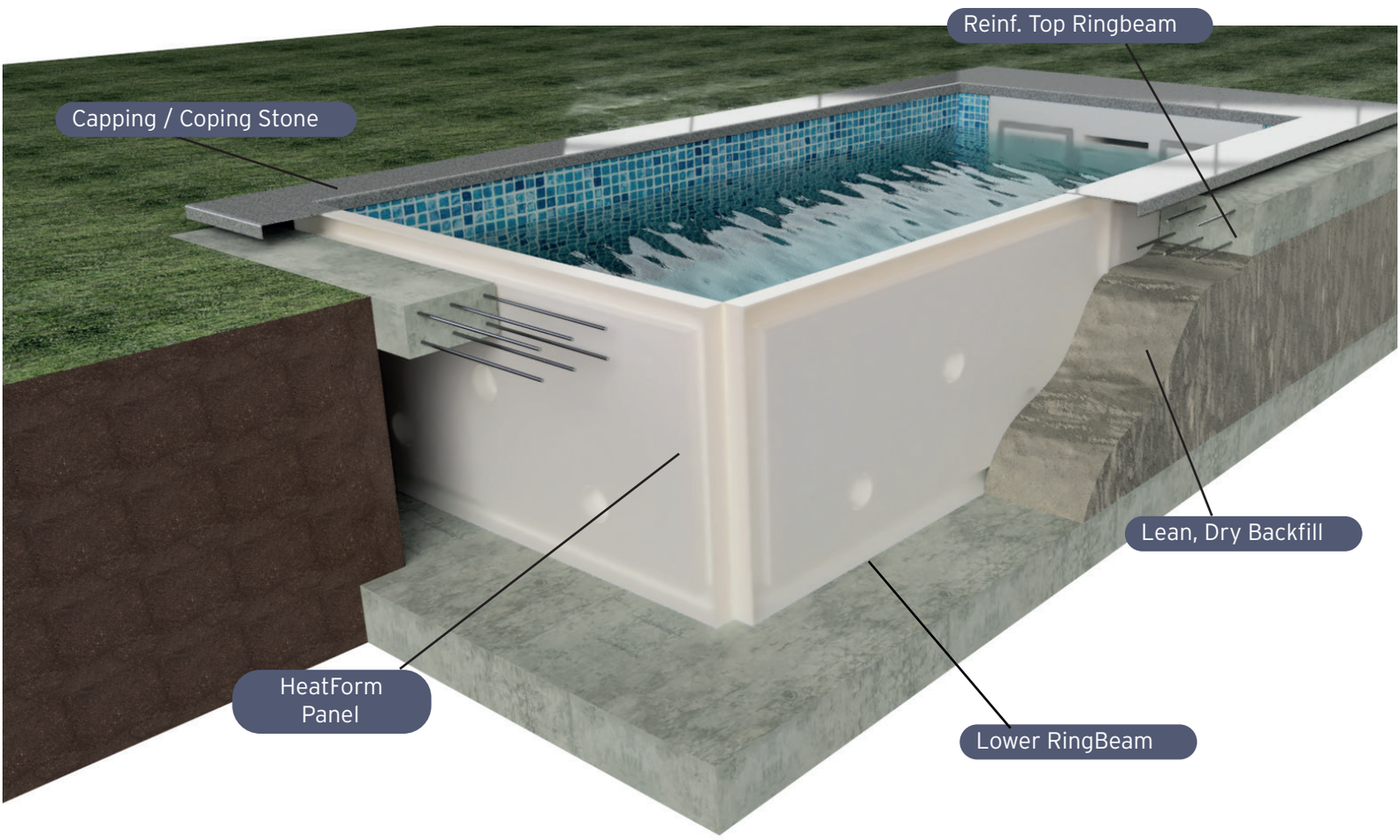
Ensure the panel stays straight and true.
A string line along the length parallel to the panel will give an easy marker guide.



Once the water is 150mm from the top of the panel the final stage is to add the concrete ring beam around the top.

This should be done in accordance with the Structural calculation shown on the next page.





RingBeam

Calculations and Considerations.

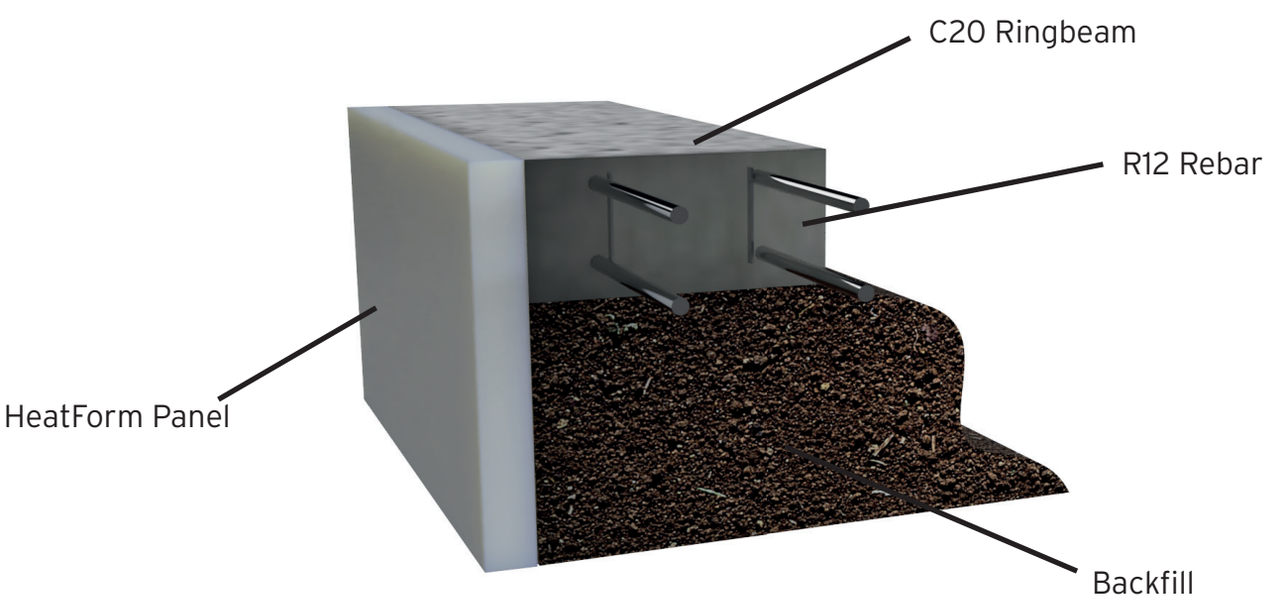
The structural calculations require that a concrete ring beam is placed around the top of the pool. The easiest way for this to be shuttered is by using scaffold planks to make a rectangle externally around the whole pool – including the skimmers.

If the pool wall stands proud of the surround surface then this ring beam must still be positioned to ensure the top section of the panels are secure. This ensures that the pool panels will not be moved by any external forces whilst the pools is full or when empty during liner maintenance.

Sizing of the Ring Beam

The size of the pool will determine the size and rebar content of the ring beam, see table below for guidance.

Pool Length	Width	Nø12mm
5m	250	2
6m	250	3
7m	350	3
8m	350	3
9m	350	4
10m	350	4
11m	350	5



Liner Installation

Completing your pool build.

Once everything is straight and true, including a final diagonal check, floor insulation, liner lock, sealant around panel and liner joints, and the liner can now be added.

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.

Taping Joints

Laying Felt Lining

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. The coping stones should be placed on top of the liner lock and panel then -fixed with a mortar bed to the ring beam once poured and set.

Once the liner is in position, the drains and inlets are flange fixed so the pool can start to be filled to assist with supporting the backfill.

The pool is now complete! Time for patios, garden furniture and final touches to finish the pool.

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

ZODIAC

ROLLO SOLAR®
DESIGN · POOL · COVER