

Polypool Swimming Pool

Installation Manual



Polypool Insulated Panel Pool System

... boasts the “highest HEAT RETAINING panel swimming pool system in the world as standard with a U – value of 0.18 W/m²K.” The design uses heat retaining thermal panels which keep the heated water within the swimming pool as well as creating a thermal break preventing outside ground temperature extracting heat from the Polypool structure and therefore the pool water.

Rapid construction is the basic principle of the design with major benefits over any other concrete block, concrete shell, or any other panel pool system.

Benefits include instant marking out with our unique floor channel, only a 250mm excavation over-dig, less spoil removal, less back fill, less costs, no footings, no dig outs for large supporting A-frames, lower all- round excavation, and raw material costs.

Other benefits include strong lightweight panels for easy handling, self-squaring top & bottom channel system for simple assembly, pre-plumbed thermal cam-locked panels, pre plumbed pool water & light fittings, easy to follow drawings.

All Polypool Pool systems will arrive to you with your chosen skimmer throats, inlets, vacuum point, water top up, lighting et cetera pre-installed.



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PRELIMINARIES

Before starting work on your Polypool installation, carefully read the following instructions.

POLYPOOL WILL SUPPLY THE FOLLOWING DRAWINGS:

- Excavation drawing
- Bottom channel layout
- Pool wall layout
- Top channel layout

Please note that the excavation drawing will not allow for any concrete pad, base, the paving, or the paving bed or safety cover profiles. Please add the depths of these to figure C on the excavation drawing to calculate the total depth to be excavated.

TOOLS THAT YOU WILL NEED TO INSTALL YOUR POLYPOOL

- String line
- Laser level
- Spirit level
- Tape Measure
- Long Tape
- Shovel
- Pegs
- Paint spray /line marker
- Drill & Philip's screw bits
- SDS Drill
- Spanner & Socket set for 8mm, 10mm 13mm & 17mm
- Handsaw
- Cam Lock Key (Provided by Polypool)
- Protective gloves
- Protective eye goggles

DATUM

It is advisable to set in a datum peg outside the excavation, so that the top of the peg is the top height of the pool wall channel and the point from which all dimensions down are measured. The final finished level of the top wall channel is important, as the pool surround may be laid to a fall away from the pool. Be sure to add any paving and / or safety cover profiles dimensions to your datum.

EXCAVATING THE POOL

Follow the excavation drawing supplied by Polypool. This will show the dimensions of the area needed to be excavated, allowing a 375mm (total 750mm) over-dig around the outside of the intended pool size. 125mm of this allows for the panel width, with the remaining 250mm shall be for the backfill.

Please note that the excavation drawing does not allow for any concrete pad, the paving, or the paving bed. Please add the depths of these to figure C on the excavation drawing to calculate the total depth to be excavated.

MARKING OUT AND EXCAVATING A HOPPER

Please refer to the supplied excavation drawing for hopper position. We recommend a concrete plinth of 375mm running around the parameter of the dig for the channel & insulated panels to be positioned on.



SYSTEM KIT COMPONENTS

Before starting to assemble the bottom wall channels, we recommend you spend some time identifying the names of the kit components used to build your Polypool. (see COMPONENTS DRAWING).

N.B. PROTECTIVE GLOVES MUST BE WORN WHEN HANDLING POOL COMPONENTS

BOTTOM CHANNEL CONSTRUCTION

Position all of the Bottom Channel so that the internal edges of the channel form the inside edge of the pool. You will notice small holes along the length of the channel, and on the ends of each channel. These holes are for either a Bottom Shoe, or if they are in the corner then a Bottom Corner Shoe to be fixed to.

Place each Bottom Shoe underneath the Channel, with the studs coming through the holes. Once the studs are coming through the Channel, place a Bottom Shoe Plate over the studs to bridge the gap between the studs, and tighten a 6mm nut on each stud. Repeat this process with the Bottom Corner Shoes and Bottom Corner Shoe Plate. (please see following photos).



Anywhere two lengths Channels join, you will also need to put a Bottom Shoe, with one stud coming through each length of Channel. Once again place the Bottom Shoe Plate over each stud, however this time don't fully tighten the 6mm nuts, as the bottom channel is designed to adjust to the length of the wall panels. If you find that after installing the wall panels the bottom channel is not long enough, you can adjust the length of the channel by inserting a flat-headed screwdriver into the slot on the face of the channel shoe and levering the channels apart.



Once all the Channel is connected it is then important to make sure it is in the correct place. Using a spirit level and tape measure, you can measure the distance from the inside of the Channel to your datum and adjust accordingly.



Once you are happy with the positioning of the Channel, it is important to check that your diagonals are the same measurement. If they differ then move the Channel accordingly until they are equal.



Next, check the levels of the channels. This is important, as your pool has to be level. Start by checking the channel all around the pool to find the high spot. Once you have found the high spot then set your laser level to that spot and work around the channel, packing up with Fibre Cement soffit board or other materials that won't rot, until the channel is level.



POOL WALL PANEL IDENTIFICATION.

You will receive a Wall Panel Diagram drawing which shows which order the panels are to be installed. All panels that contain pre-plumbed fittings will have a number on the top of the panel, facing inwards so it can be read from the inside of the pool. All cut panels will also be numbered. All plain panels will not have a number.

In numerical order, place the panels into the Channel, with the sticker (and number if there is one) being shown on top. Once two panels are aligned next to each other, slide the male and female together, and use the Cam Lock key in both the top and bottom holes to leverage the Cam Lock, hooking the panels together. Please do not overtighten. You will feel the panels join and click after a half turn, do not turn any further than this.

Continue this process down the first pool wall. If the final panel is not a reduced length panel, then saw the male part (tongue) of the panel insulation off, so that it is flush with the metal face and rear of the panel. This will allow it to slot into the corner post.

Then place the first panel of the next wall into the Channel in the correct position. From here you will be able to lower your corner post into position, sliding down both the last panel of wall 1 and the first panel of wall 2.



Note the two 5mm holes located at the top & bottom of the corner post. Fix the post via these holes with the small self-drilling screw (provided) to the wall panels.

Continue this process until all the panels are locked together, in the correct order, and all 4 Corner Buttresses are in place and screwed to the panel.

TOP CHANNEL SHOES & BUTTRESS

All Top Channel Shoe will be laid out on top of the panels, in line with the Bottom Channel Shoe. If this is not possible due to wall fitting locations, then the Top Channel Shoe and Buttress should be placed as close to being in line with the Bottom Shoe as possible. Once these are all in place, then you can lift the back of the Top Channel Shoe up slightly, and slot a Buttress in, making sure the bottom of the Buttress has slid down between the back of the panel and the Bottom Channel. Once this is in place, lower the back of the Top Channel Shoe down, making sure the two studs go through the top of the Buttress, then use 8mm nuts and fully tighten to connect the Buttress & Top Channel Shoe. The first photo is how it should look, and second photo is an example of how it is connected.



On each corner of the pool, place a Top Channel Support Shoe approximately 250mm from the corner(s) on each side.



Where two lengths of separate Top Channel join along the length of the pool wall, it is important that there is a Top Channel Shoe to bridge the gap between.



TOP CHANNEL

Once all of the Top Channel Shoes and Top Channel Support Shoes are in the correct place, and all of the Buttresses have been secured to the Top Channel Shoes and the bottoms of the Buttresses are locked between the bottom of the panel and the Bottom Channel, you are ready to place the Top Channel across the top of the pool. Following the placement of the Top Channel, sit the Top Corner Shoe to each corner on top of the Panel. You are then ready to use the 90mm Screws to secure the Channel to the Shoes and panels.

Each Top Channel Shoe has two holes ready for the 90mm Screw to go through, then through the Channel, then into the back of the panel. Put two screws through every single Top Channel Shoe. It is recommended that you put weight on top of the Channel to push it down it into place whilst screwing. The Top Channel Support Shoe located on each side of each of the corners also has a hole ready for a 90mm screw.



The Top Corner Shoes have 3 holes on each side (6 total) which require a 90mm screw. It is recommended that whilst you are fastening the Top Corner Shoe, that somebody else stands inside the pool and puts each hand on either end of the Top Corner Shoe, pulling inwards, to ensure that it is fully over the corner. Once the person inside is happy that they have it in place, the person screwing should put in all six of the 90mm screws. Once this is done, then there are 10 holes in the top of the Corner Shoe which require self-drilling screws. Repeat this process on all corners.



SECURING BOTTOM CHANNEL

Once the Top Channel is secured then it is sensible to double check that the pool hasn't moved during the construction process. This can again be done using a spirit level and tape measure from the inside of the panel wall to the datum point, ensuring the distance and location is correct. Then measure across the width of the pool every 1.5m to make sure that the walls are parallel. Once you are happy the walls are in the correct position, then use a SDS Drill to create a hole for concrete bolts to secure the Bottom Channel Shoe to the concrete pad. Then use an Impact Driver to bolt down the pool. There are two holes in every Bottom Channel Shoe for the concrete bolts.

PIT BUTTRESS LOCATION (For Automatic Covers)

Position the buttresses as shown on **BOTTOM CHANNEL AND BUTTRESS LAYOUT DRAWING** applicable to your pool.

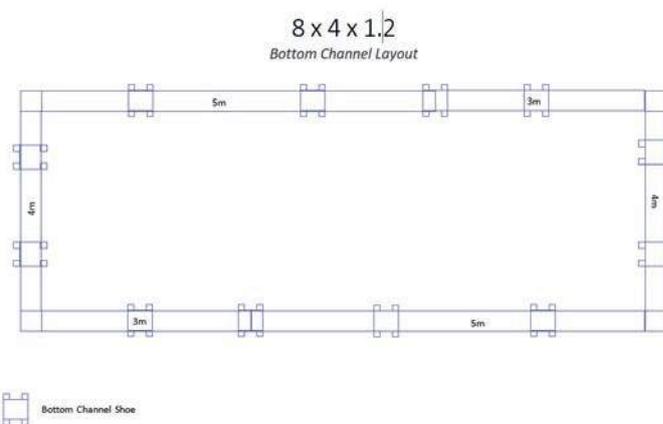
PIT BUTTRESS ASSEMBLY

Under certain circumstances you will have to move a buttress to one side of the pool wall fitting. This is then shown on the **BOTTOM WALL CHANNEL LAYOUT DRAWING**, labelled **OFF SET BUTTRESS**.

Having located the bottom of the buttress over the bottom wall channel, attach the threaded rod to the buttress with the spring nuts provided. Now locate the top channel buttress shoe over the wall panel, locating the two studs on the shoe with the two stud holes on the buttress. Fix the shoe to the buttress with the two 8mm nuts provided. Making sure the buttress is vertical, connect the threaded rod to the steel stake with the two nuts and drive the stake into the ground.

(See wall section drawing with pit buttress) The buttress can be adjusted by tightening or loosening the two threaded nuts at the stake end to a vertical position if needed.

Before starting to assemble the pool walls and top channels, we recommend you spend some time familiarising yourself with **POOL WALL PANEL LAYOUT AND TOP CHANNEL WITH CHANNEL SHOE LAYOUT DRAWINGS** applicable to your pool.



BRACING BARS

Brace bars and brace rods are used as a method of bracing the pool walls before backfilling. The location of the brace bars and rods will be the same as the Top Channel Shoe location.

It is important to brace the walls before backfilling. Dig a 300mm cube hole opposite the top channel brace shoe allowing 900mm from the top channel shoe to the centre of the hole. If longer brace bars are needed due to ground conditions, these are available with notice.

Position the brace rod with the slot at the top and side and drive it into the centre of the hole so that the top of the brace rod is below the top of the wall channel, allowing it to stand up.

Before threading the brace bar through the slot in the brace rod, wind a 10mm nut onto the brace bar about 100mm in from the end nearest to the brace rod.

Now screw the threaded rod into the threaded hole in the Top Channel Shoe. Then wind onto the end of the threaded rod the other 10mm nut. Leave both nuts loose at this stage.



Next, fill these holes with concrete. Carry on fixing and concreting all the other brace bars and brace rods. It is important that you let the concrete set before you can align the pool walls.

Before moving onto the bottom channel ring beam section check that the wall panel(s) are plum and in a straight line by adjusting the two nuts on the bars.

BRACING THE POOL

If the excavation is left open for any length of time, we recommend that once the pool walls have been installed and are plumbed, cross braces are installed at 2.5m centres along the length of the pool. This is to avoid the wall panels moving due to unstable ground conditions brought on by adverse weather conditions. This can be with timbers cut to length



BOTTOM CHANNEL RING BEAM

Pour concrete (six of ballast to one of cement mix) to a depth of 300mm. This should be placed around the pool by hand (do not use mechanical equipment), all around the outside of the bottom channel. (See WALL SECTION DRAWING.) Before the concrete sets don't forget to check that the wall panel(s) where the buttress(es) are fixed are plumb. Also, if there were any gaps under the Channel with packers then ensure the concrete has gone underneath the Channel to plug any gaps and support the pool walls,

BACKFILLING

Standard Backfilling

Backfilling behind the pool walls can now be carried out. 10mm stone or pea shingle must be used to ensure maximum consolidation. This should be placed around the pool by hand. Do not use mechanical equipment. Stop when you have reached the underside of the pool wall fittings so that you can connect your pipework. Once all pipework is connected and pressure tested then continue Backfill with 10mm stone or pea shingle until you are approximately 300mm from top of the pool.

CONCRETING THE OUTER TOP RING BEAM (depth of 300mm)

The most vulnerable part of any pool wall is the top 150mm where thick ice on the pool can exert great pressure and do damage to the pool so a concrete ring beam must be cast around the pool. Scaffold boards or planks held in place with pegs or concrete blocks should be positioned to act as shuttering whilst casting the ring beam. Place a 6-1 mix of ballast and cement into the shuttering. Fill to the top of the pool wall and level off. Consideration should be given at this stage to the installation of deck equipment such as steps, diving boards, slides, and deck boxes for lights. These items can be incorporated in with the casting of the ring beam.

PROTECTING LINERLOCK

Protect the slot on the front edge of the Polypool built-in Liner Lock within the top channel with masking tape or Liner Lock infill. This will help stop any sand and cement getting into it if pool coping stones are laid. (It is important that the Liner Lock slot is clean from any debris ready for when the liner is fitted.)

FLOOR SCREED - PREPARING THE FLOOR OF THE POOL

The finished pool floor level should be screeded using the lip on the inside Bottom Channel as a guide to how far up the wall panel the screed should go.

PREPARING FOR THE LINER

Remove tape or rubber insert from the front of the Liner Lock and vacuum out the slot. Brush and wipe down the wall panels. Insert plastic caps (provided) into the cam-lock holes.



LINER UNDERLAY

We always recommend a felt Underlay to help provide additional protection against abrasion between the liner and the floor screed and can give some degree of additional insulation. The felt is cut to size and glued down. The underlay and glue can be obtained from your swimming pool supplier.

LINER INSTALLATION

A domestic liner fitted to your Polypool is fabricated slightly smaller than the pool. This is so that it can stretch into position during installation to give a perfect fit with no creases and wrinkles. Choose a warm sunny day to fit the liner, as the heat of the sun will make the liner material more pliable. If this is not possible, store the liner in a warm room for a day or two before fitting.

APPENDIX

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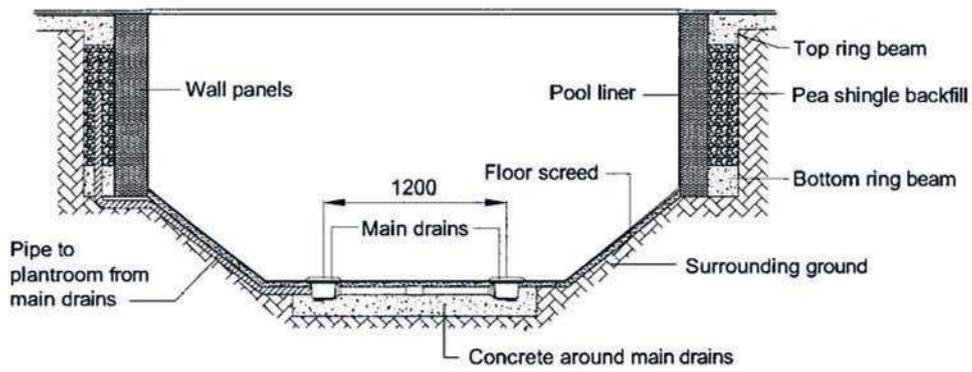
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Estimated Schedule Of Building Materials

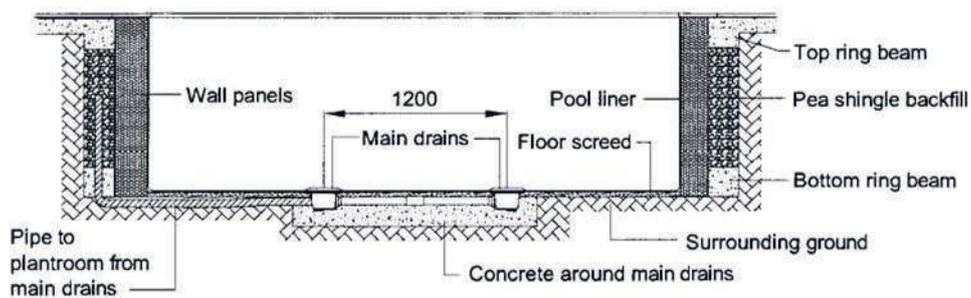
The quantities below are to be used as a guideline and depend on individual site arrangements and soil conditions etc.

Pool Size (m/ft)	Volume (Cu/m)	Profile	Excavated Soil (Cu/m)	Floor screed		Backfill Pea shingle (Cu/m)	Bottom Ring Beam		Top Ring Beam		Roman End Step		Square Step		Corner Step	
				Bags of Cement	Grit Sharp Sand (cubic tonnes)		Bags of Cement	Ballast Cubic Tonne	Bags of Cement	Ballast Cubic Tonne	Bags of Cement	Ballast Cubic Tonne	Bags of Cement	Ballast Cubic Tonne	Bags of Cement	Ballast Cubic Tonne
6.2x3.2 20.3x10.4	24	Constant Depth	31	5	1.3	3.50	5	1.0	5	1.0	10	3.5	9	3	7	2.4
7.2x3.7 23.6x12.1	42	Hopper & Wedge	57	8	2.0	4.00	8	1.0	8	1.0	10	3.5	9	3	7	2.4
8.75x4.2 28.7x13.7	57	Hopper & Wedge	74	11	2.8	5.00	10	1.25	10	1.25	10	3.5	9	3	7	2.4
9.2x4.7 30.1x15.4	64	Hopper & Wedge	83	12	3.0	5.50	12	1.5	12	1.5	10	3.5	9	3	7	2.4
9.7x5.2 31.8x17.0	75	Hopper & Wedge	94	13	3.6	5.75	12	1.5	12	1.5	10	3.5	9	3	7	2.4
11.2x5.7 36.7x18.7	108	Hopper & Wedge	133	16	4.3	6.00	14	1.75	14	1.75	10	3.5	9	3	7	2.4
12.2x6.2 40.2x20.8	129	Hopper & Wedge	156	21	5.6	7.00	16	2.0	16	2.0	10	3.5	9	3	7	2.4

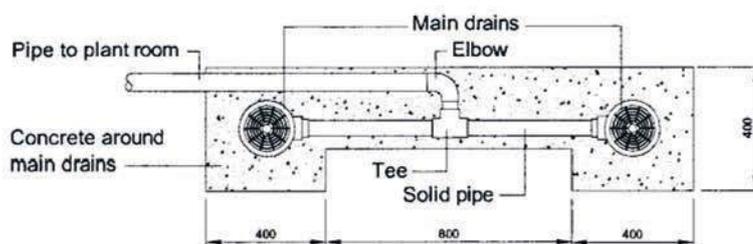
MAIN DRAIN SUCTION FITTING WITH HOPPER OR WEDGE POOL FLOOR



MAIN DRAIN SUCTION FITTING CONSTANT DEPTH POOL



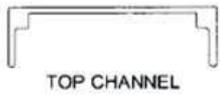
MAIN DRAIN AND PIPEWORK LAYOUT



MAIN DRAIN ASSEMBLY 1.5" PIPE

MAIN DRAIN ASSEMBLY 2" PIPE

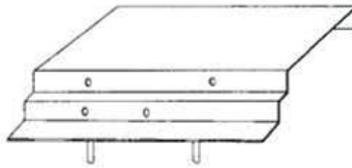
STANDARD WALL POOL COMPONENTS



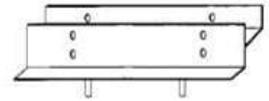
TOP CHANNEL



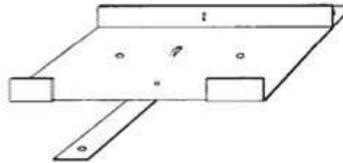
BOTTOM CHANNEL



TOP CHANNEL/BUTTRESS SHOE



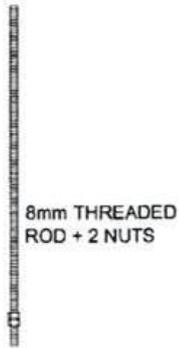
STEP CHANNEL/ BUTTRESS SHOE



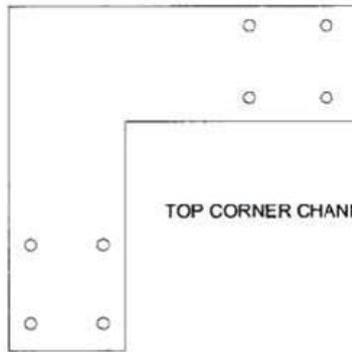
BOTTOM CHANNEL SHOE



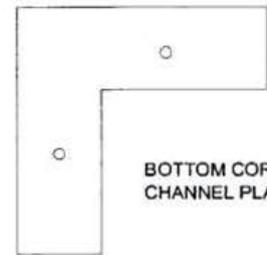
BOTTOM CHANNEL SHOE PLATE



8mm THREADED ROD + 2 NUTS



TOP CORNER CHANNEL 90°



BOTTOM CORNER CHANNEL PLATE



PIT BUTTRESS

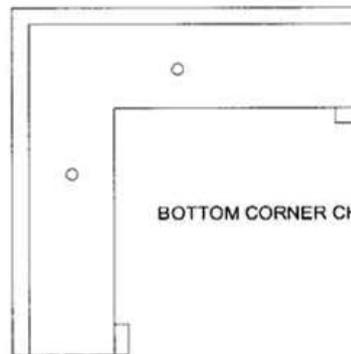


SIDE VIEW



PLAN

90° CORNER POST



BOTTOM CORNER CHANNEL 90°

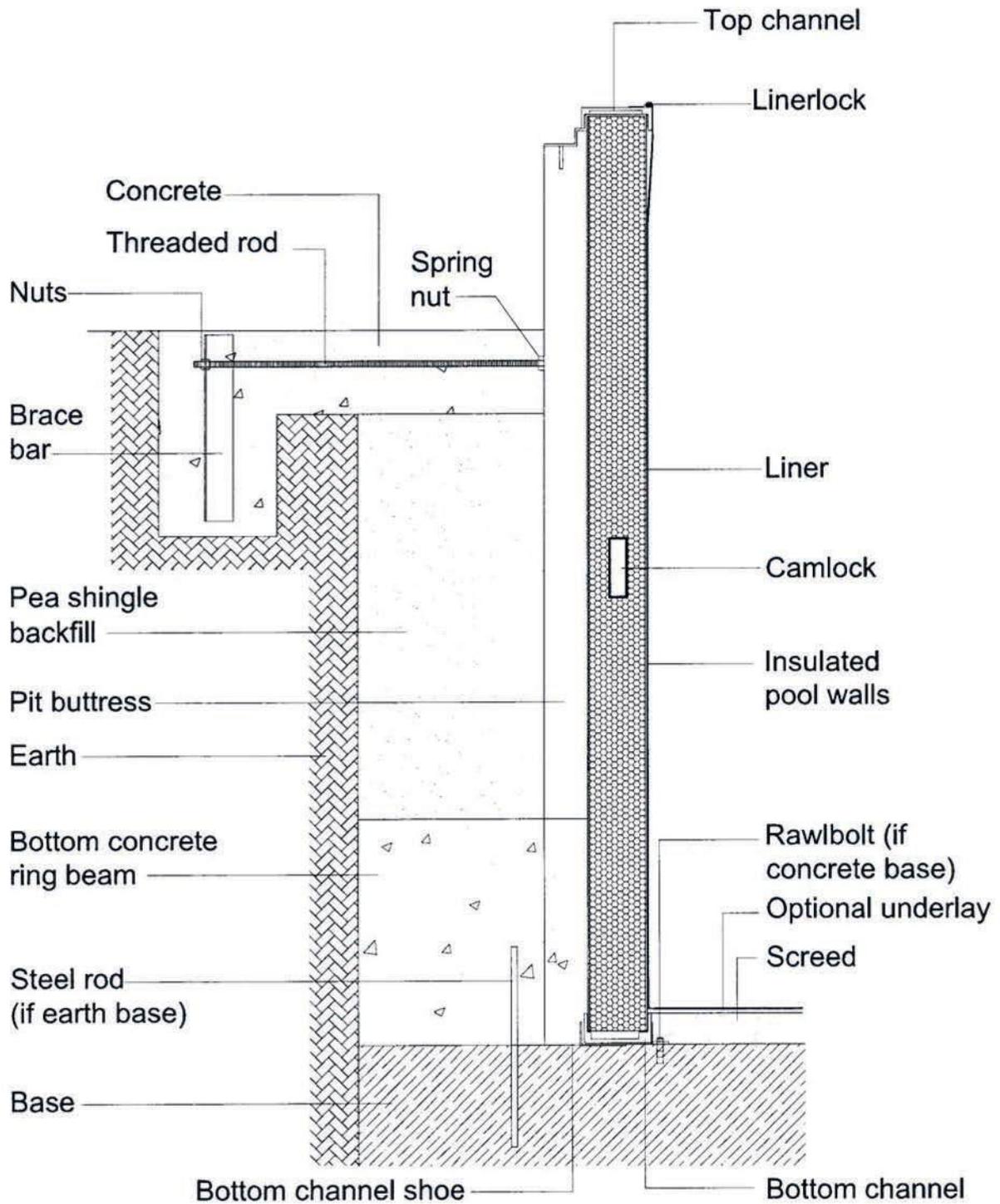


STEEL ROD

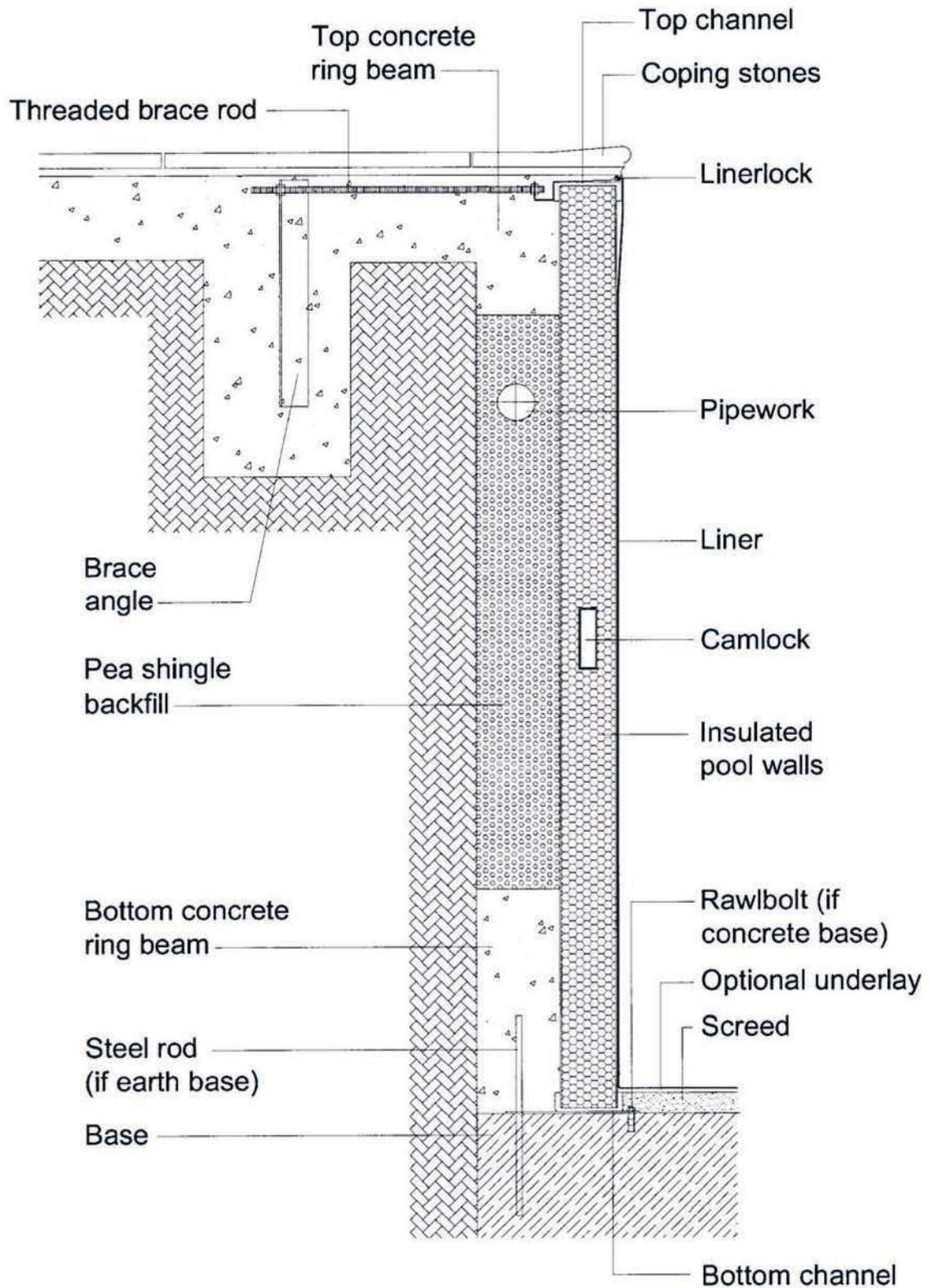


BRACE BAR

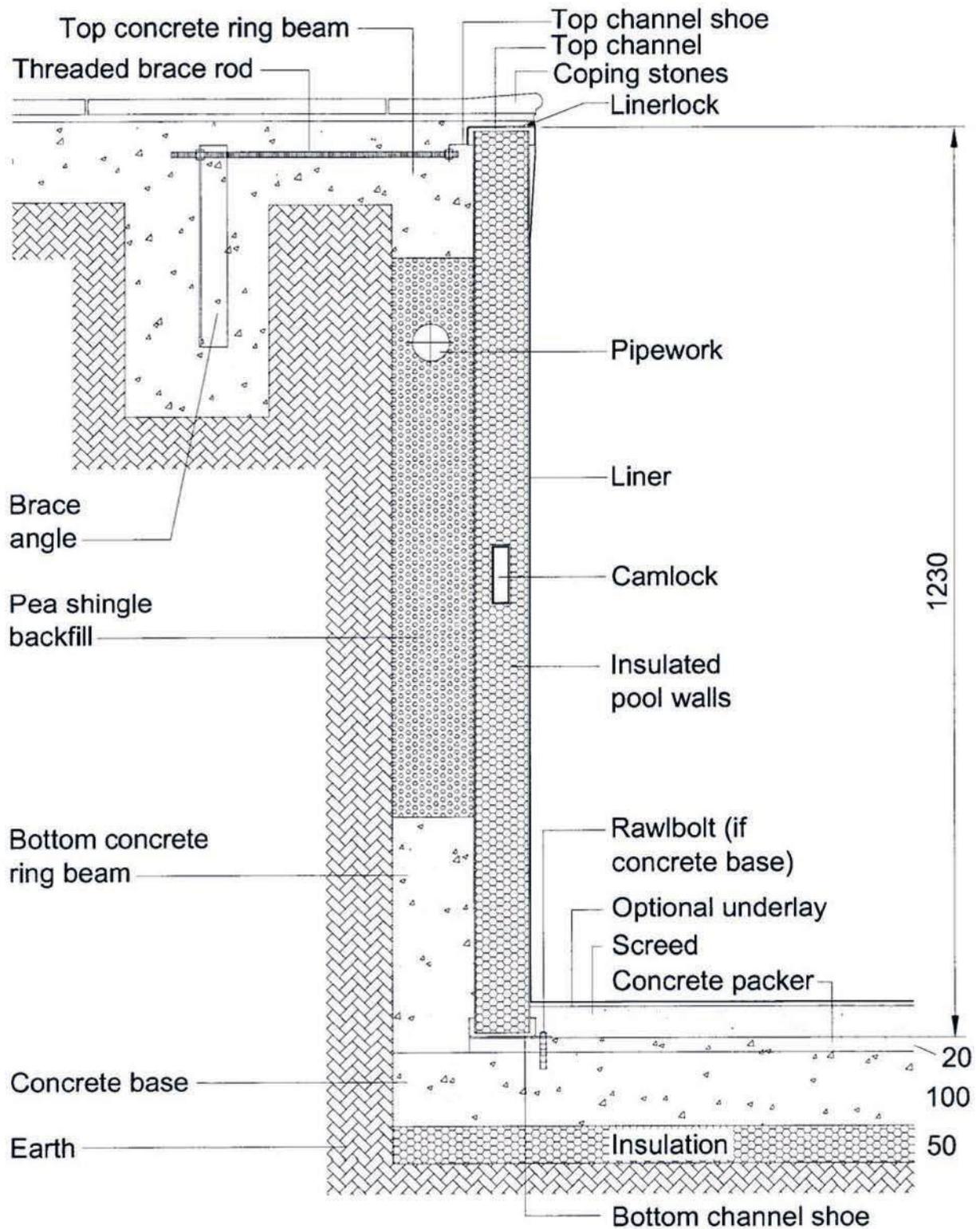
WALL SECTION WITH PIT BUTTRESS FOR SAFETY COVER



STANDARD WALL SECTION WITH BRACE BAR

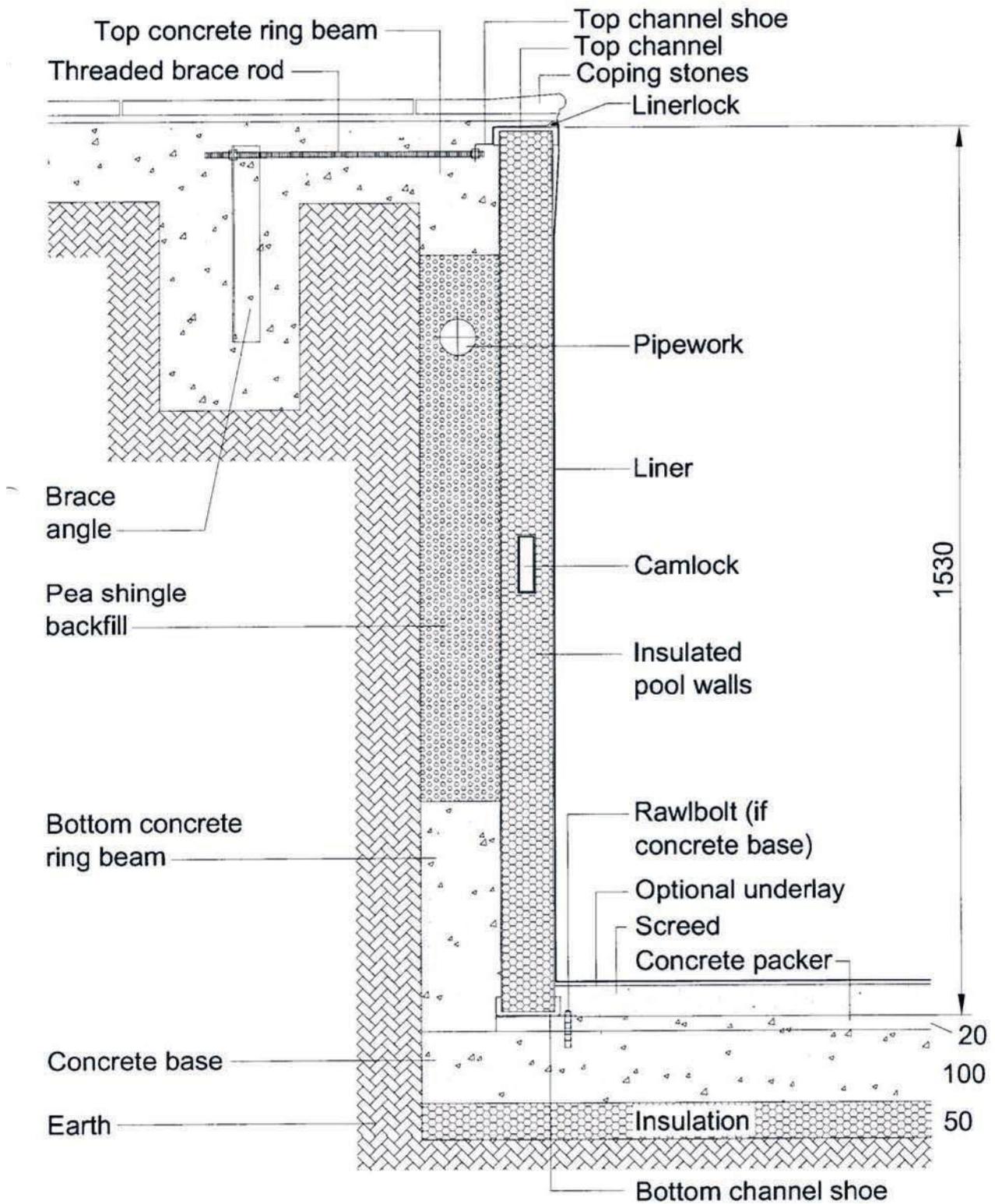


STANDARD WALL SECTION WITH BRACE BAR FOR OVERDIG



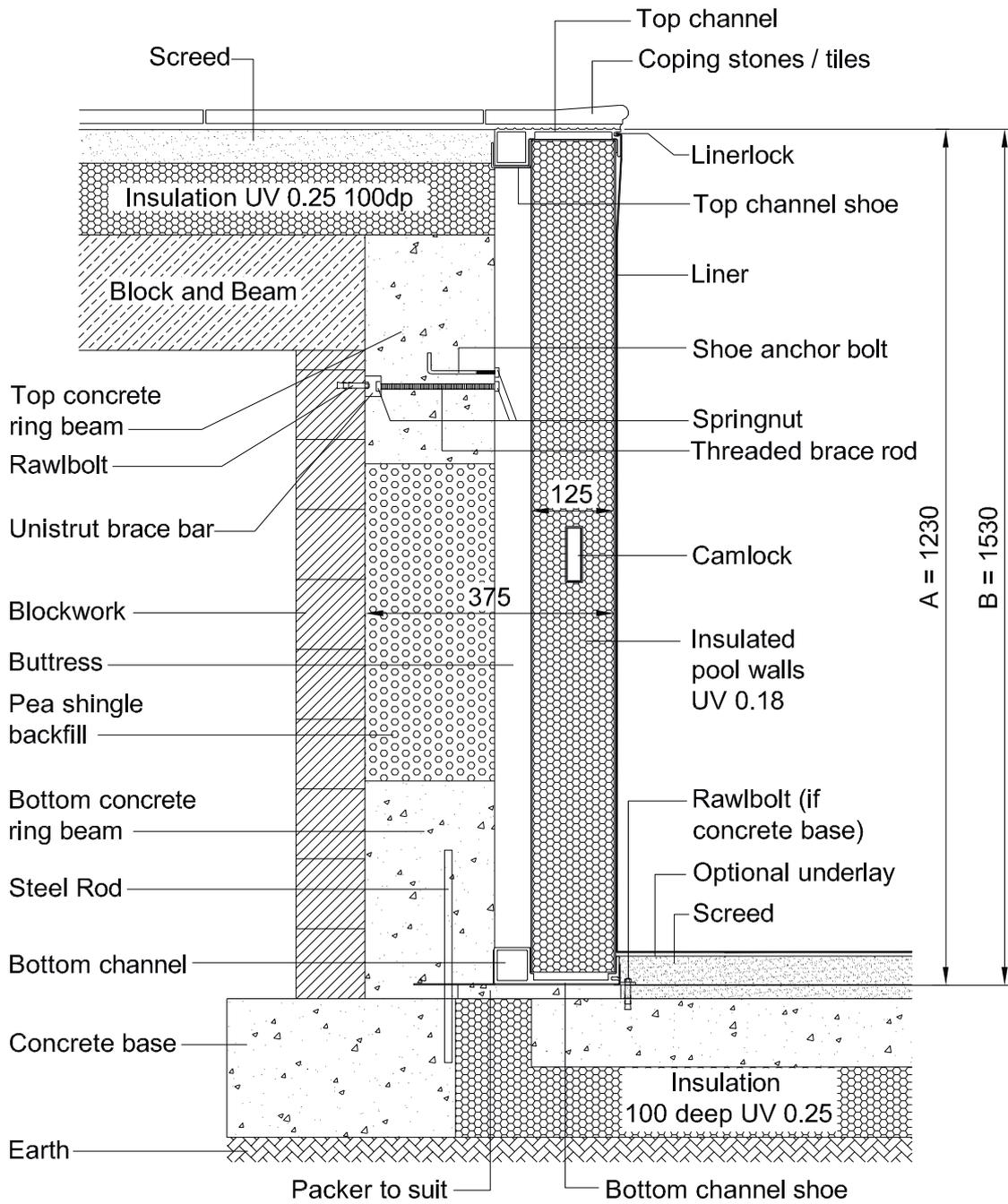
CONSTANT DEPTH ONLY 1.2 METRE DEPTH STANDARD WALL SECTION

BRACE BAR AND INSULATED FLOOR



CONSTANT DEPTH ONLY 1.5 METRE STANDARD WALL

SECTION WITH BRACE BAR AND INSULATED FLOOR



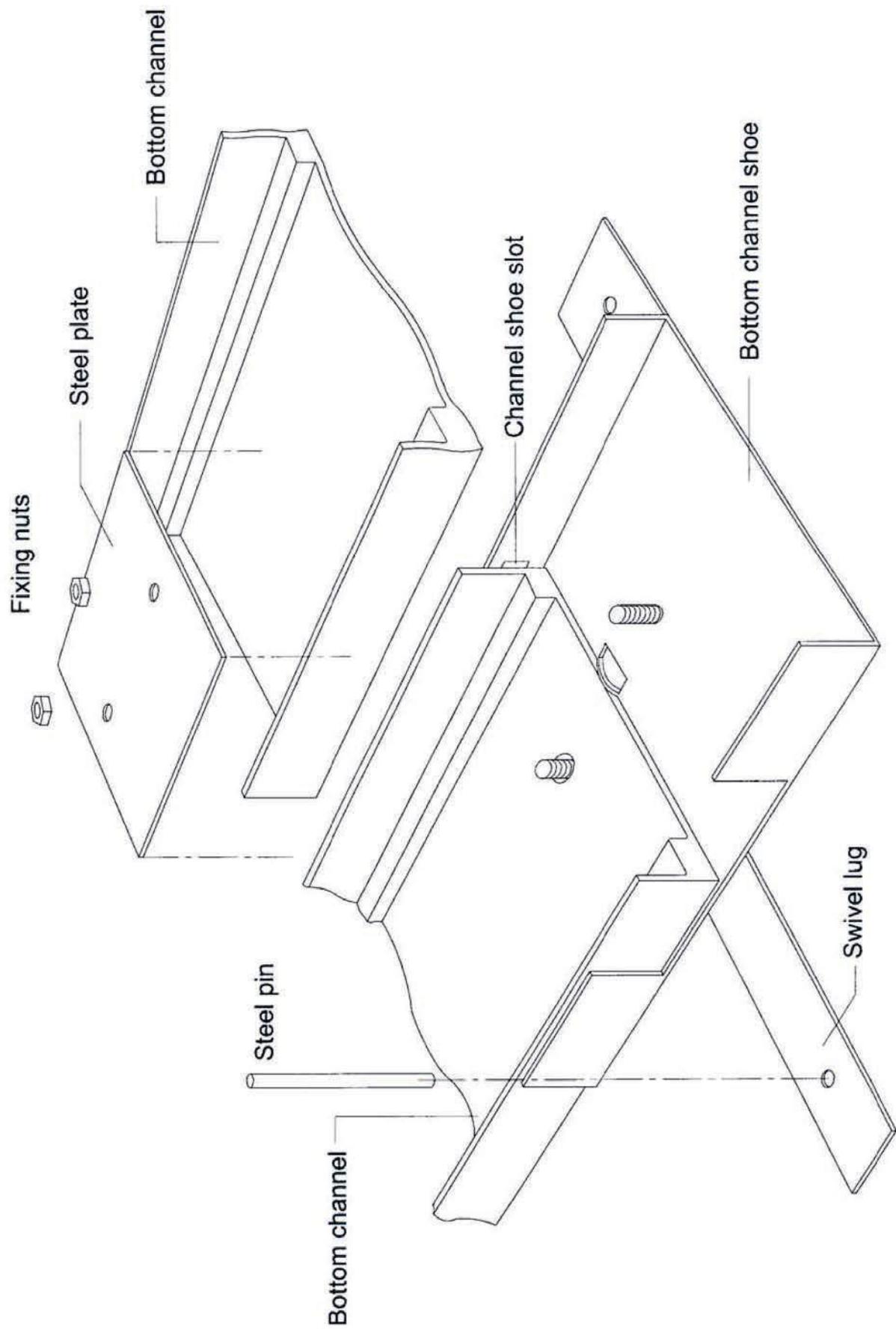
**CONSTANT DEPTH ONLY 125 WALL SECTION
FOR BLOCK AND BEAM SURROUND SLAB
INDOOR LINER POOLS**

POLYPOOL™

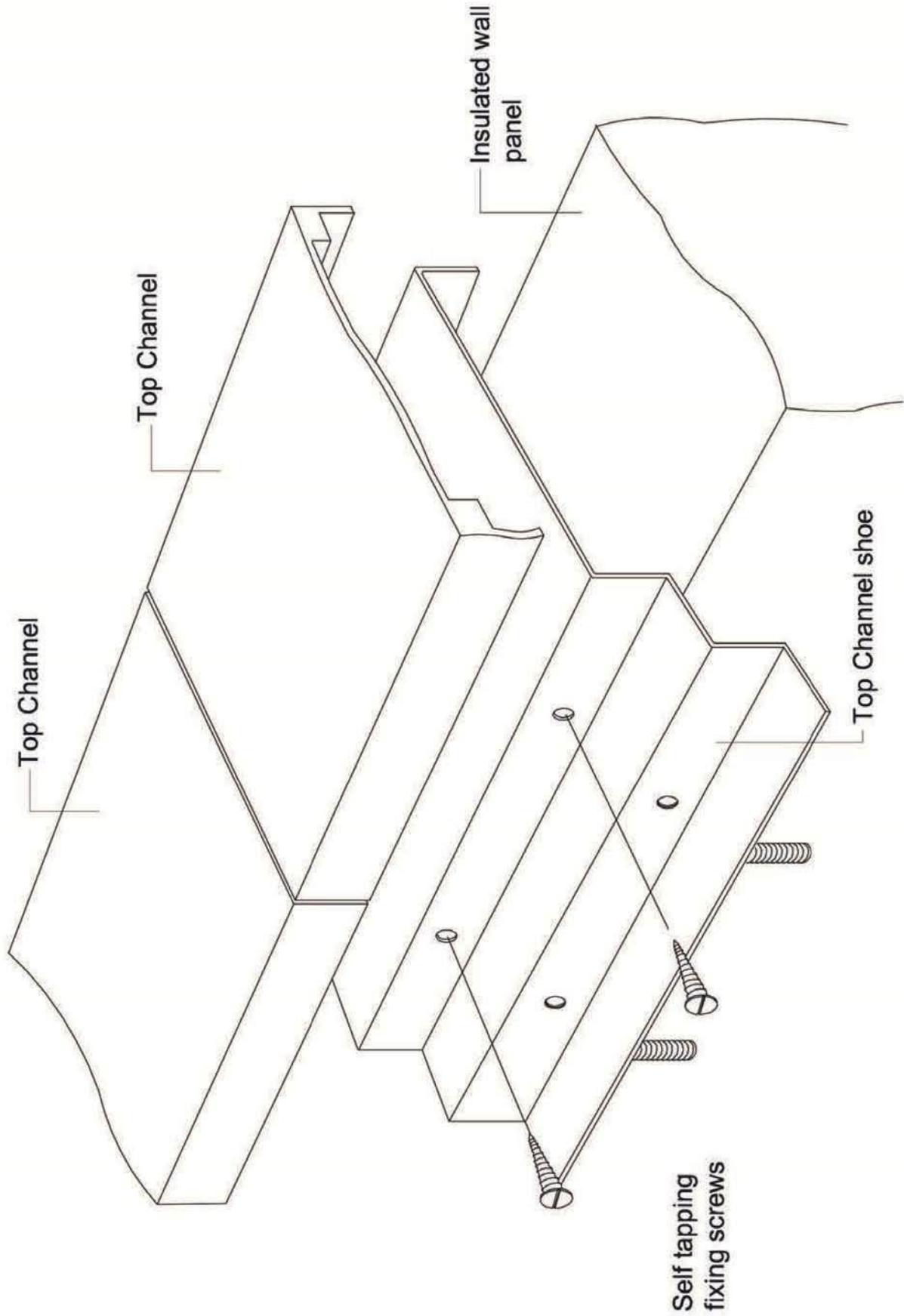
RETAINING HEAT

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BOTTOM CHANNEL SHOE JOINING DETAIL FOR STANDARD WALLS



PIT BUTTRESS SHOE JOINING DETAIL FOR STANDARD WALLS



TOP CHANNEL BRACE SHOE JOINING DETAIL FOR STANDARD WALLS

