ECOTHERM™
Swimming Pools

Jump in! The Water's Warm

Installation Manual

Residential Onground or Semi-Inground Rectangle Swimming Pool

IMPORTANT SAFETY INFORMATION

Enclosed in the liner box is the safety envelope. The safety stickers must be installed as per instructions. Failure to properly install warning labels will void warranty. Alert all visitors and family of the risks associated with jumping and/or diving and point out all warning labels supplied. Failure to mount these safety labels may subject you to substantial liability in case of injury.

Your pool is designed for years of pleasurable, safe family fun. However, when used incorrectly, a swimming pool can be dangerous. **To insure your pool is used safely you must observe the following safety precautions:**

1. Do not dive, do not jump, no rough play, no running or pushing.
2. Do not walk on the top rail without deck and fence. It can be slippery and is not a walkway.
3. Be sure to install all safety labels provided with your pool according to the safety instructions.
4. Keep a 50' safety rope with a flotation buoy with an outside diameter of 15" accessible in a prominent area by your pool.
5. Post near all entrances to the pool area a list of telephone numbers for the following:
    a. Local police
    b. Local fire department
    c. Local rescue unit
    d. Local ambulance service
    e. Local hospital
    f. 911 emergency number, if available
6. Provide fencing or an enclosure which is independent of the house as a closure around the entire pool area. The fencing must be made of durable material, a minimum of 4' high from ground level and with closures with self-latching locks to make the pool inaccessible to toddlers and uninvited guests. Make sure the gate is always closed. Be sure to follow local building code requirements for load capacity and fencing if using an aftermarket or homebuilt deck.
7. Check with your local town or municipality in regard to obtaining a building permit and/or an electrical permit. The installer shall follow the regulations for set backs, barriers, devices and other conditions.
8. All electrical outlet connections should be a minimum of 5' from the outside perimeter of the wall of the pool. From 5'-10' there should be either a fixed connection (outlet box) or twist lock connection with a GFCI. Connect power cords to a 3-wire grounding-type outlet only.
9. Severe electrical shock could result if you install your pump or filter on a deck. They could fall into the water causing severe shock or electrocution. Do not install on a deck or other surface at, above or slightly below the top ledge of the pool, within 5 feet of pool water edge.
10. Do not sit, stand or climb on the pump and filter or any part of the pool structure. Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as a means of access to the pool by young children.
11. Never drink alcoholic beverages or use any intoxicants which could hinder your judgment and reflexes.
12. Never use the pool alone. All children must be supervised continuously.
13. Do not use pool if bottom is not clearly visible. At night, sufficient lighting must be available. It is the pool owners' sole responsibility to provide adequate lighting for the pool bottom, safety signs and walkways, which exceeds minimum standards of the IES of North America.
14. Be sure that all toys, chairs and tables or similar objects that a young child could climb on be at least 4' from the pool.
15. Do not use pool during electrical or rain storms.
16. See available Association of Spa and Pool Professionals (APSP) publications for more tips on pool safety.

INTRODUCTION

The Installation of the Ecotherm™ Rectangle/Emerald pool is not hard, nor complicated. Although, installation conditions might differ from this guide, it is important to consult with the manufacturer before making any changes that might disturb the integrity of the pool. Failure to follow these instructions will void all warranties. Read and follow all manufacturers' instructions including accessories such as pumps, filters, and skimmers prior to starting.

Ecotherm Pools™ uses the latest, patented technology and is covered by U.S. Patent No. 9,890,547, 'Pool Skimmer Mounting Arrangements'; U.S. Patent No. 830,012, 'Pool Skimmer Mounting Wall Insert'; U.S. Patent No. 10,006,215, 'Swimming Pool Coping Arrangements'.

Before you start, check your packing list to confirm that you have the correct number of parts and components. The manufacturer reserves the right to revise, change or modify construction of its pools. See packing list for components included for your pool. If there are any missing or damaged components, please contact your retailer for replacement.

While all Ecotherm Pools™ are designed to meet or exceed industry recommended safety standards (ANSI/APSP-4 and 5 American National Standards for Residential Inground Swimming Pools), special attention must be paid to all installation procedures that the installer performs and controls. Spend time to ensure that the entire pool framework is **perfectly level and square.** Unlevel pools place extreme pressures on the pool walls. An earth mound or pool cove must also be installed. This keeps the pool liner from creeping out from under the pool wall. Be sure to follow these instructions. Improperly installed pools can rupture, allowing thousands of gallons of water to rush out, causing extensive property damage and injury to anyone in its path. As with any major home project, a homeowner is responsible for following all local laws, ordinances and codes. Electrical grounding of swimming pool is required. National and local codes must be followed. A checklist is provided below as a guide for these considerations.

✓	HOMEOWNER CHECKLIST
	Obtain building permit if required.
	Local building and zoning requirements
	Electrical and Grounding requirements
	Have Ground Tested for Stray Electricity
	Proper Backfill and Drainage
	Fencing requirements
	Backwash (waste water) requirements
	Check availability of utilities.
	Call before you dig (www.digsafe.com)

With proper installation, care and maintenance, this Ecotherm™ Rectangle/Emerald Residential Swimming Pool from Ecotherm Pools™ will provide a lifetime of fun and relaxation for the homeowner.

Ecotherm Pools™ offers a non-prorated, lifetime guarantee on the entire pool against manufacturing defects. Walls, structural supports and channels are guaranteed against defects due to faulty workmanship or defects due to manufacturing for as long as you own your home. Compare our warranty with any other pool. Engineering, innovation and efficiency make the difference.

IMPORTANT: BEFORE YOU BEGIN

The selection and preparation of the pool site is your responsibility. The manufacturer can only suggest the proper techniques, indicate the important considerations and emphasize the precautions and cannot be held responsible for damages to your pool that may result from failure to carefully follow all pool specifications.

All Ecotherm Pools™ components are engineered to provide a precise fit. It is very important to handle all components with care. Prior to assembly, all pool components should be free of sand, mud, dirt and debris of any kind.

We recommend a small broom or shop-vac to maintain a clean track system throughout the installation process. We recommend a damp cloth be available in the event that any dirt or debris finds its way to the panel surface.

TOOLS AND MATERIALS NEEDED

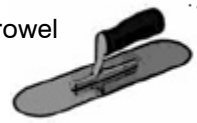

Tape measure, 100ft.

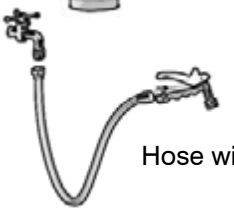
Orange Marking Spray Paint

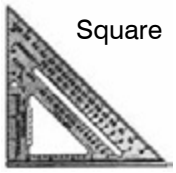

Metal File


Utility Knife


Transit/Laser Level


Pool trowel


Hose with spray nozzle


Square


String


Duct Tape


Level


Cloth rag

Cooking Spray


Rubber Mallet


Long handled pointed shovel


Short handle square shovel


Step Drill Bit


Socket Set


Hacksaw


Pick or Mattock

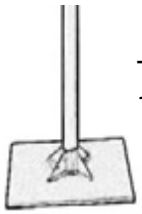

9/16” Open End Wrench


Power Drill


5/16” Hex nut driver bit


Screwdrivers, Flathead and Phillips

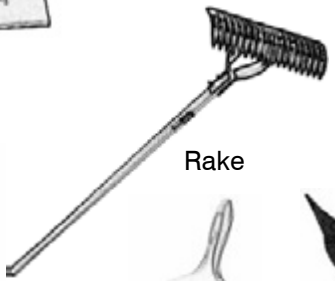

7/16” and 1/8” Drill bits


Tamper, 10 or 12 in. Square


14” Channel Locks


Extension Cord


Shop Vac


Rake


PVC Pipe Cutter


Foam Sealant (Great Stuff)

Masonry Sand


Hand Broom


Tin Snips


Soft bristle broom


8” Concrete Block


Wheelbarrow


Rebar

POOL COMPONENTS CHECKLIST

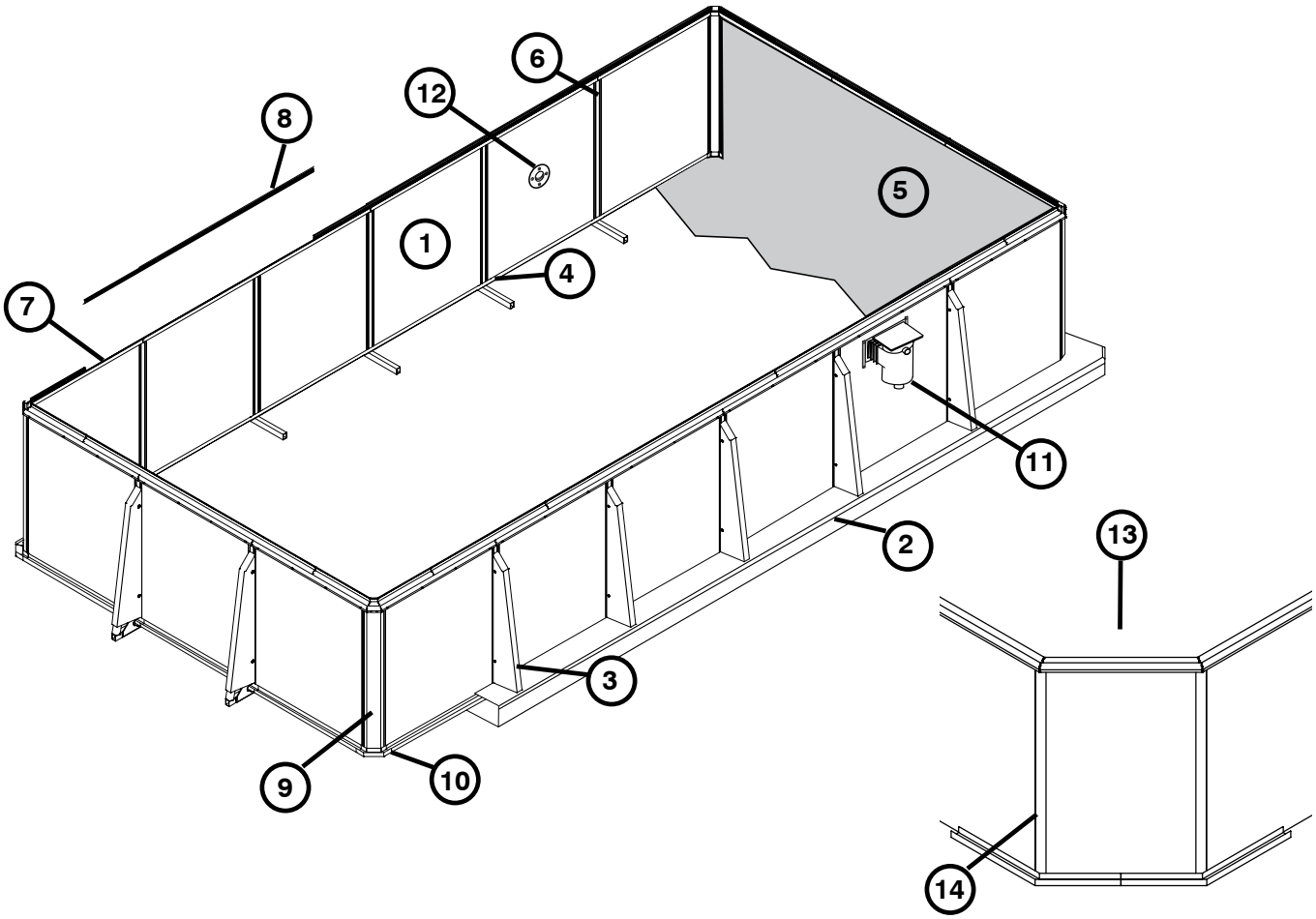
	METRIC RECTANGLE				
PART DESCRIPTION	8 x 12	12 x 16	12 x 24	16 x 28	16 x 32
WALL PANELS: STRAIGHT (3' 9-7/8")	10	14	18	22	24
METRIC A-FRAMES	6	10	14	18	20
CHANNEL	4 Corners	4 Corners	4 Corners	4 Corners	4 Corners
	2 (4'0")	2 (4'0")	2 (4'0")	2 (4'0")	
	4 (6'0")	4 (6'0")	4 (6'0")	4 (6'0")	4 (6'0")
		2 (8'0")	4 (8'0")	6 (8'0")	8 (8'0")
METRIC EMERALD HARDWARE BUNDLES					
HB-PMRC-A	1	1			
HB-PMRC-Z			1	1	1
HB-PMOV-C06	1		1		
HB-PMOV-C08			1	1	
HB-PMOV-C10		1		1	2
A-FRAME COVER	6	10	14	18	20
UNIVERSAL COPING SYSTEM - Aluminum Base Kit	1	1	1	1	1
UNIVERSAL COPING SYSTEM - Top Coping Kit	1	1	1	1	1
SKIMMER AND ADAPTER KIT	1	1	1	1	1
RETURN FITTING WITH INLET PLATE	1	1	2	2	2
LINER	1	1	1	1	1
REQUIRED COMPONENTS NOT INCLUDED IN POOL KIT:					
8" x 8" x 16" CONCRETE BLOCK	20	24	32	40	44
CLEAN SAND FOR UNDER LINER	1 yds	1.5 yds	2.25 yds	3 yds	3.5 yds
CONCRETE COLLAR MIX (FOR 25" BACKFILL OR LESS)	5.0 yds	6.0 yds	8.0 yds	9.0 yds	10.0 yds
CONCRETE COLLAR MIX (FOR 26" BACKFILL OR MORE)	3.5 yds	4.25 yds	5.5 yds	6.25 yds	7.0 yds
CONCRETE COLLAR MIX (FOR FULLY INGROUND)	4.25 yds	5.0 yds	6.75 yds	7.0 yds	7.75 yds

	METRIC EMERALD		
PART DESCRIPTION	12 x 20	16 x 27	20 x 31
WALL PANELS: STRAIGHT (3' 9-7/8")	12	18	22
WALL PANELS: STRAIGHT (2'6")	4	4	4
METRIC A-FRAMES	8	14	18
CHANNEL	4 "A" Corners	4 "A" Corners	4 "A" Corners
	4 "B" Corners	4 "B" Corners	4 "B" Corners
	4 (4'0")	2 (4'0")	2 (4'0")
	2 (8'0")	6 (8'0")	8 (8'0")
METRIC EMERALD HARDWARE BUNDLES			
HB-PMEM	1	1	1
HB-PMOV-C06		1	
HB-PMOV-C08	1	1	1
HB-PMOV-C10			1
A-FRAME COVER	8	14	18
UNIVERSAL COPING SYSTEM - Aluminum Base Kit	1	1	1
UNIVERSAL COPING SYSTEM - Top Coping Kit	1	1	1
SKIMMER AND ADAPTER KIT	1	1	1
RETURN FITTING WITH INLET PLATE	1	2	2
LINER	1	1	1
REQUIRED COMPONENTS NOT INCLUDED IN POOL KIT:			
8" x 8" x 16" CONCRETE BLOCK	24	36	44
CLEAN SAND FOR UNDER LINER	2 yds	3 yds	4 yds
CONCRETE COLLAR MIX (FOR 25" BACKFILL OR LESS)	7.0 yds	9.0 yds	12.0 yds
CONCRETE COLLAR MIX (FOR 26" BACKFILL OR MORE)	5.0 yds	6.25 yds	8.5 yds
CONCRETE COLLAR MIX (FOR FULLY INGROUND)	6.0 yds	7.5 yds	10.0 yds

Note: If any portion of your Radiant Metric Series Pool is more than 26” inground please refer to the inground installation instructions starting on page 23.

IMPORTANT: Do not allow splines or compressions seams to come in contact with sand or other debris as this will cause difficulty with installation. We recommend a small dust broom or damp cloth be available in the event that any dirt or debris finds its way to these parts.

ECOTHERM™ RECTANGLE & EMERALD POOL COMPONENTS



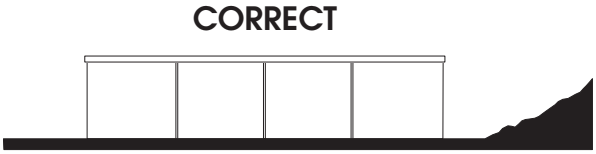
Drawings are for illustrative purposes and are not to scale.

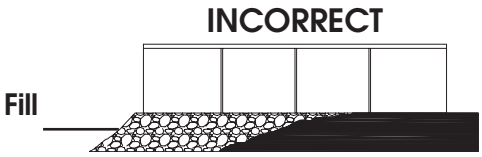
#	COMPONENT
1	Straight Wall Panel - Forms pool
2	Concrete - A-Frame footer
3	Shroud Covers, A-Frames & Extended Splines - imbedded in concrete for stability
4	Bottom Channel - Acts as a base for panel & A-Frames
5	Liner - Fits inside of pool to form a watertight skin
6	Straight Panel Spline Connector - Join straight panels together
7	*Double Track Aluminum Coping Base - Secure liner
8	*Universal Coping - for finishing with Pavers, Concrete or Decks
9	Corner Panel Spline Connector - Joins straight panels together at corner
10	Corner Channel
11	Skimmer Assembly
12	Return Fitting
13	Ecotherm™ Emerald Corner Assembly
14	135 Panel Spline Connector

SELECTING POOL LOCATION

The selection and preparation of the pool site is your responsibility. The distributor can only suggest the proper techniques, indicate the important considerations and emphasize the precautions and cannot be held responsible for damages to your pool that may result from failure to carefully follow all pool specifications.

1. The surface on which your pool will stand must be absolutely level and solid. This condition should extend 2 feet beyond the actual pool area. The best surface is bare solid earth free from stones, roots and other sharp objects.





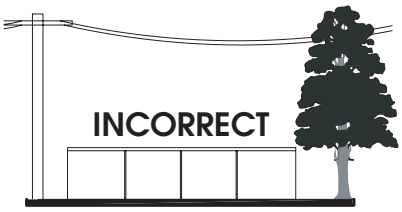
2. Allow plenty of play area around the pool. Fit the location into your landscaping plans.

3. The pool site must be accessible to electrical and water supply and should allow for disposal of great quantities of water when the pool is drained. All electric outlets within 10' must be GFI protected.

5. Do not set up your pool in hilly areas or areas with poor drainage. For Semi-Inground and Inground Installations: The site of installation must accomodate an efficient drainage system to minimize the impact of heavy rain and high ground water conditions.

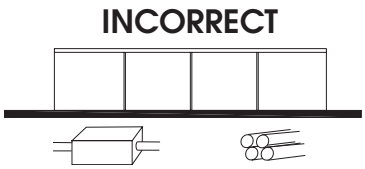
4. When installing your pool on a solid level surface, it is imperative that you protect your pool and liner from chemicals and other foreign matter contained in the surface. Do not install your pool on peat moss, tar paper, roots, sticks, gravel or chemically treated or contaminated soil not approved for pool use. Any or all of these surfaces can ruin your pool and liner and will void your warranty. To prevent stones or other foreign material from damaging the liner it is recommended to build a 2" to 3" base of clean washed masonry sand or other suitable base material inside the entire pool.

5. If ants or termites are prevalent in your area, have soil treated with insecticides and allow sufficient time for them to dissipate before continuing with pool installation.



6. Do not set up your pool under trees or under overhead wires.

7. Do not set up your pool near any existing structure such as your house, garage, etc., as this condition may compel diving or jumping into your pool which could result in permanent injury or death. You must check with your local municipality for all appropriate ordinances and regulations.

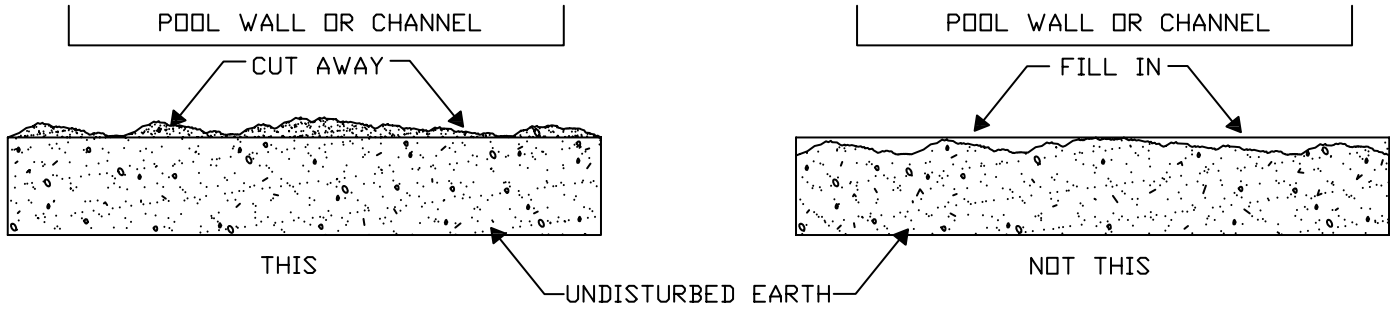


8. Do not set up your pool on or near any septic system or underground utilities.

LEVELING AND LAYOUT

GROUND PREPARATION

Establish ground level (benchmark) of the pool. A sturdier pool will result when the pool rests on undisturbed earth. It is better to have to remove an inch or two by hand than to have to build up after the excavator had gone too deep. Any voids beneath the wall panels caused by large rock removal, etc., must be filled and properly compacted.



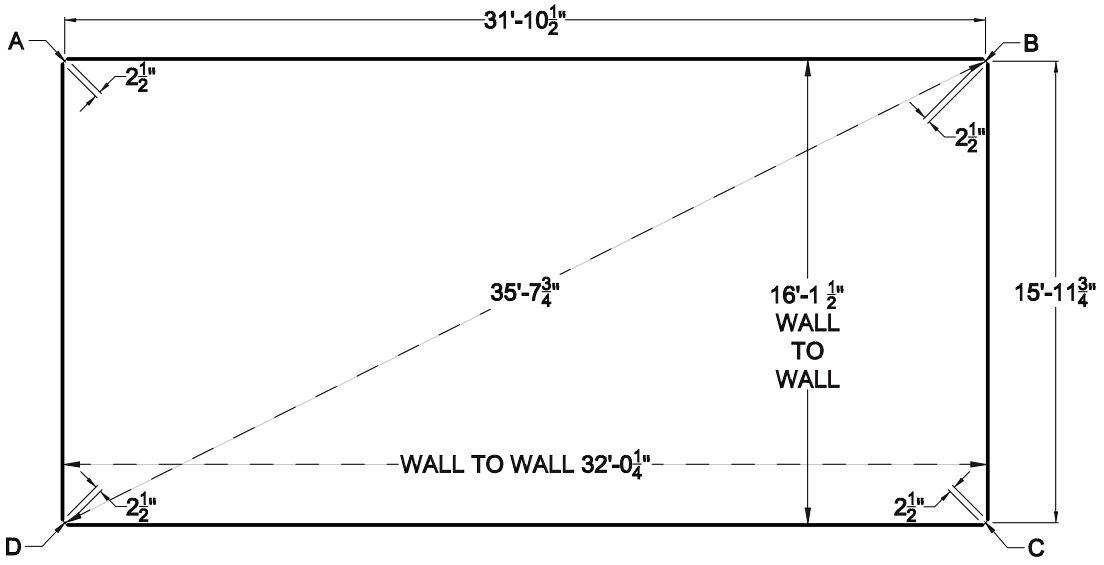
Leveling Example: 16' x 32' Metric Rectangle

The excavation area will be larger than the pool area to accommodate leveling blocks, A-Frames and supports.

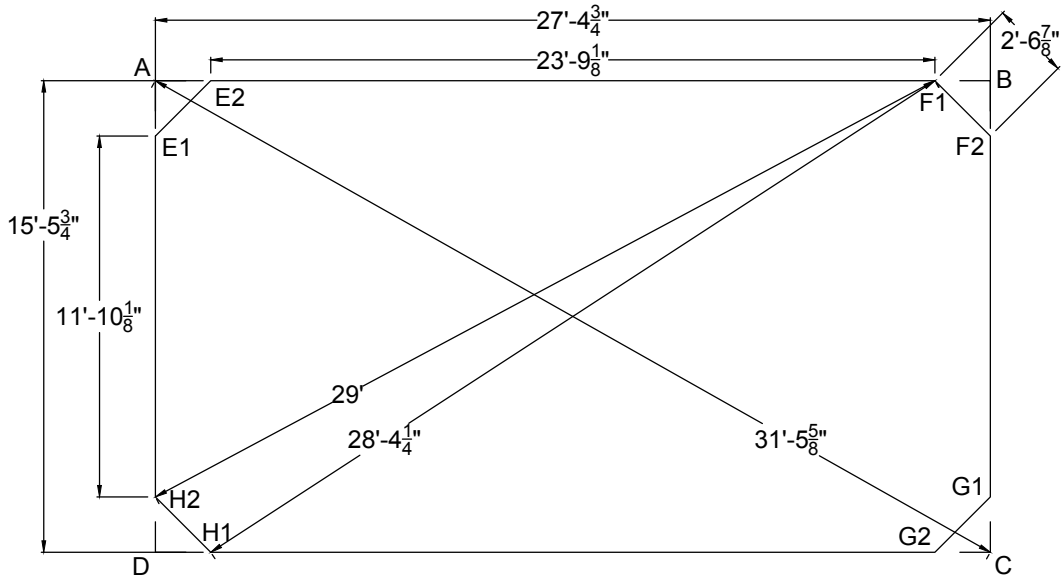
Choose the location of your pool using Line A-B as the long side of the pool.

1. Locate and mark points A, B, C, and D. (for the Ecotherm™ Rectangle these are located at the inside center point of each corner extrusion.)

2. Square the area: The Diagonals A-C and B-D should be equal. This will give you the area to be leveled for your pool.



Leveling Example: 16' x 27' Metric Emerald



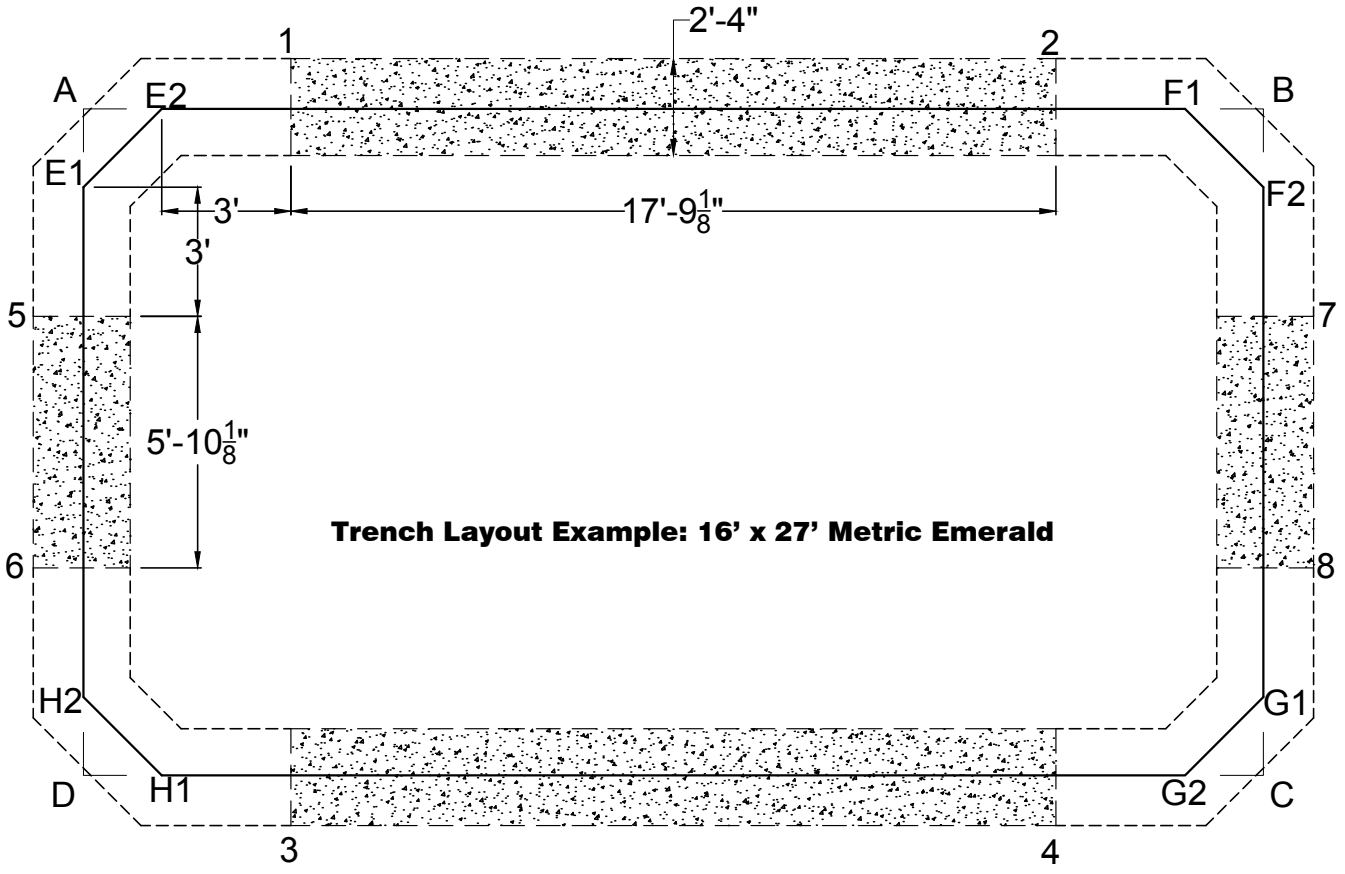
TRENCH LAYOUT

		Trench Length (pts.1-2 & 3-4)	Trench Length (pts.5-6 & 7-8)	Trench Width	Straight Trench Depth	Corner Trench Depth
Metric Rectangle	8' x 12'	6'-0"	2' 0-3/8"	28"	14"	7"
	12' x 16'	9' 11-3/4"	6'-0"	28"	14"	7"
	12' x 24'	17' 11-1/8"	6'-0"	28"	14"	7"
	16' x 28'	21' 10-3/4"	9' 11-3/4"	28"	14"	7"
	16' x 32'	25' 10-1/2"	9' 11-3/4"	28"	14"	7"
Metric Emerald	12' x 20'	9' 9-3/4"	1' 10-3/8	28"	14"	7"
	16' x 27'	17' 9-1/8"	5' 10-1/8"	28"	14"	7"
	20' x 31'	21' 8-7/8"	9' 9-3/4"	28"	14"	7"

A full perimeter trench must be dug. Dig trenches 14” deep at straight sections and 7” deep at corner sections. Level the bottom of the straight trenches so that the top of the 14” concrete block is level with benchmark.

Outline the Area for Digging the Straight Trenches & Corner Trenches:

1. Starting at the inside perimeter of the pool wall measure 14” to the outside of the pool wall.
2. Starting at the inside perimeter of the pool wall measure 14” to the inside of the pool wall.
3. Create your trench outline around the entire perimeter of the pool with a width set by steps 1&2 (28 inches)
4. Measure in 3’ from each corner (E1,E2,F1,F2,G1,G2,H1 & H2 for the Metric Emerald and A,B,C, & D for the metric Rectangle). This will mark points 1-8 for you to define the straight trench and corner trench areas.



Trench Layout Example: 16’ x 27’ Metric Emerald

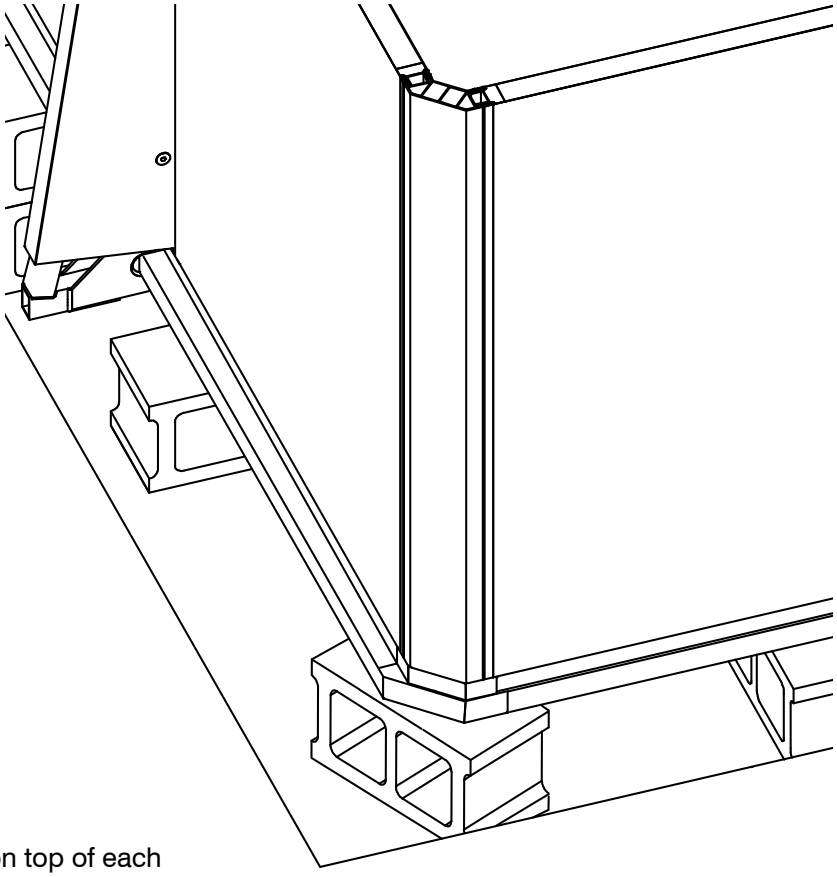
CONCRETE BLOCK LAYOUTS

Metric Rectangle:

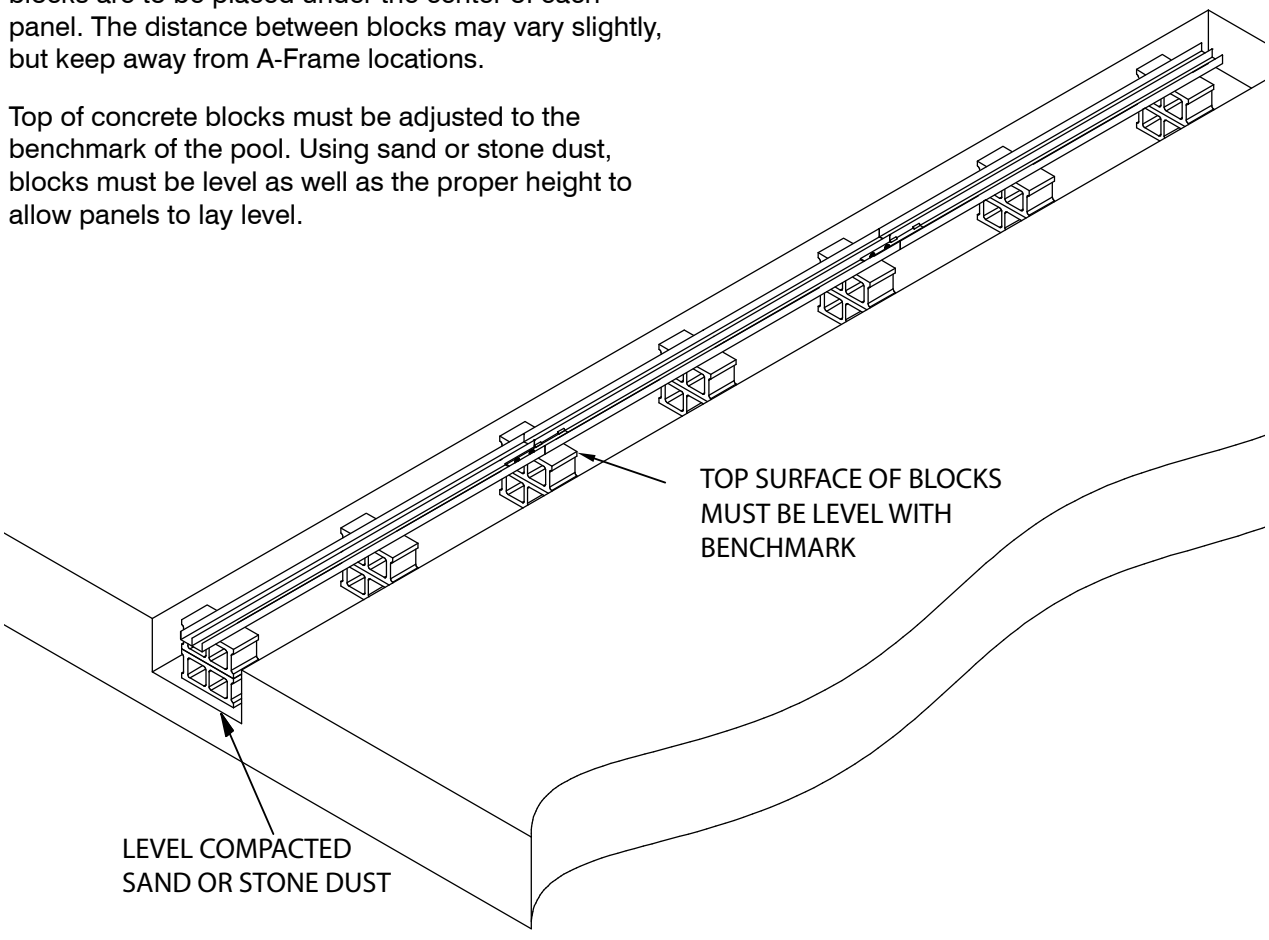
At the four corners of the pool, (locations A, B, C, and D) and center of the panels directly adjacent to the corners, set a single concrete block to your leveling benchmark. These will support the four corners of the pool kit.

Metric Emerald:

At the Eight Corners of the pool (locations E1, E2, F1, F2, G1, G2, H1 & H2) and center of the panels directly adjacent to the corners(not including the emerald corner panels), set a single concrete block to your leveling benchmark. These will support the 8 corners of the pool kit.



1. Two concrete blocks will be stacked on top of each other to provide support under each panel. These blocks are to be placed under the center of each panel. The distance between blocks may vary slightly, but keep away from A-Frame locations.
2. Top of concrete blocks must be adjusted to the benchmark of the pool. Using sand or stone dust, blocks must be level as well as the proper height to allow panels to lay level.



CHANNEL ASSEMBLY AND LAYOUT

The bottom channel creates the framework for the remainder of the pool kit assembly. The channel will be assembled using two different connections; a loose extension with two drilled holes both ends **(fig. A)** and a loose extension with a sliding adjustment slot on one end **(fig. B)**.

Begin by identifying the corner channel pieces. For a Metric Emerald, combine side “A” and side “B” (as shown in **(fig. C)** using the standard extension, nuts, washers and 3/4” bolts. This will form a complete Metric Emerald corner channel. Repeat this for all four corners.

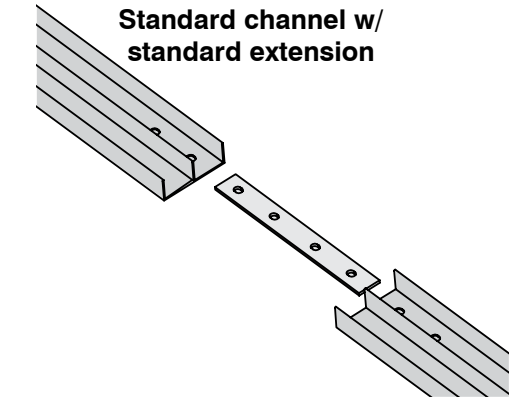
Using the CAD drawings supplied with the pool, identify the gap length needed following each corner (see **fig. C** for example). Mount the adjustable extension to a straight channel piece via the 2 drilled holes. Next, attach this assembled straight channel to the corner channel using the sliding adjustment slot and 1 3/4” bolt, leaving a measured gap as specified in the provided CAD drawings. Leave hand tight until walls are fully installed, to allow for adjustment if needed. Repeat for all four corners.

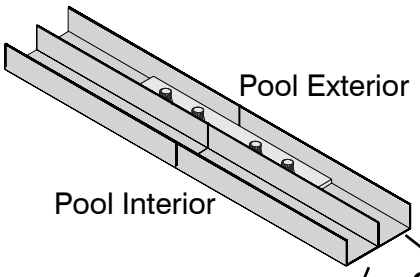
Note: When assembling the pool wall, the last panel attached should fall over 1 of these 4 adjustable corner connections.

Proceed with channel assembly via the standard extensions and included nuts, washers and bolts until channel is fully assembled.

A.

Standard channel w/ standard extension





Outside Channel (Connectors)

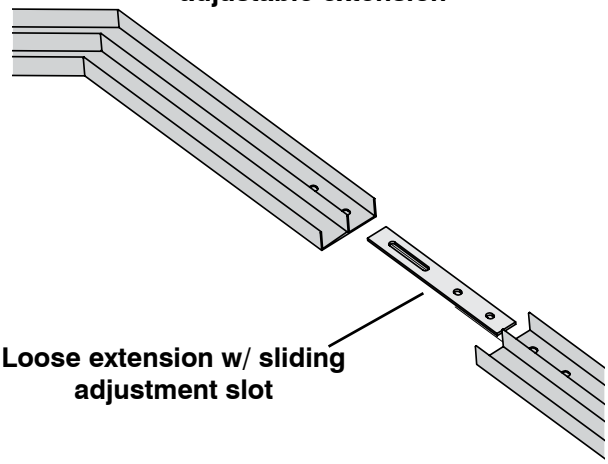
Inside Channel (Wall panel)

Wall panels are set in the INSIDE channel.

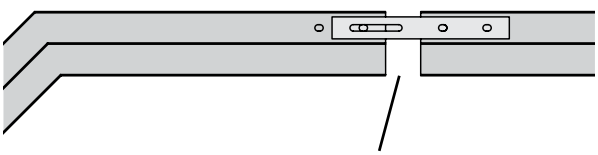
Connectors are set in the OUTSIDE channel.

B.

Corner Channel w/ adjustable extension



Loose extension w/ sliding adjustment slot

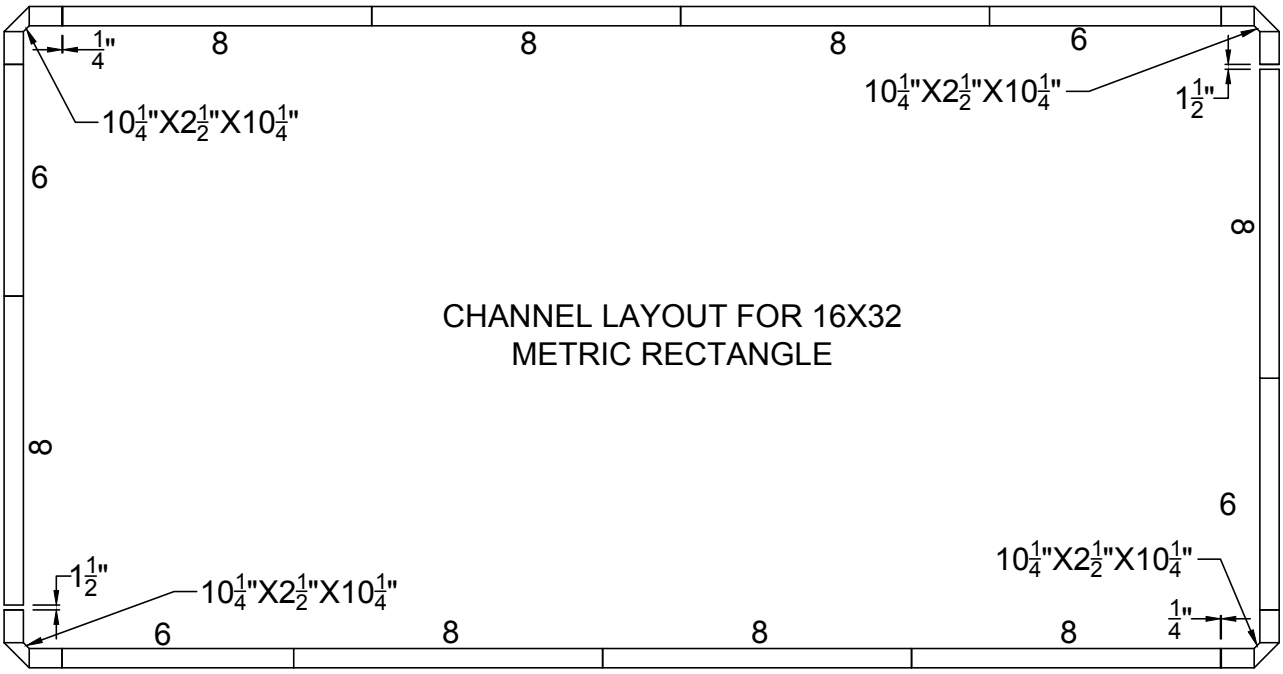


Measured gap (as specified in CAD drawings)

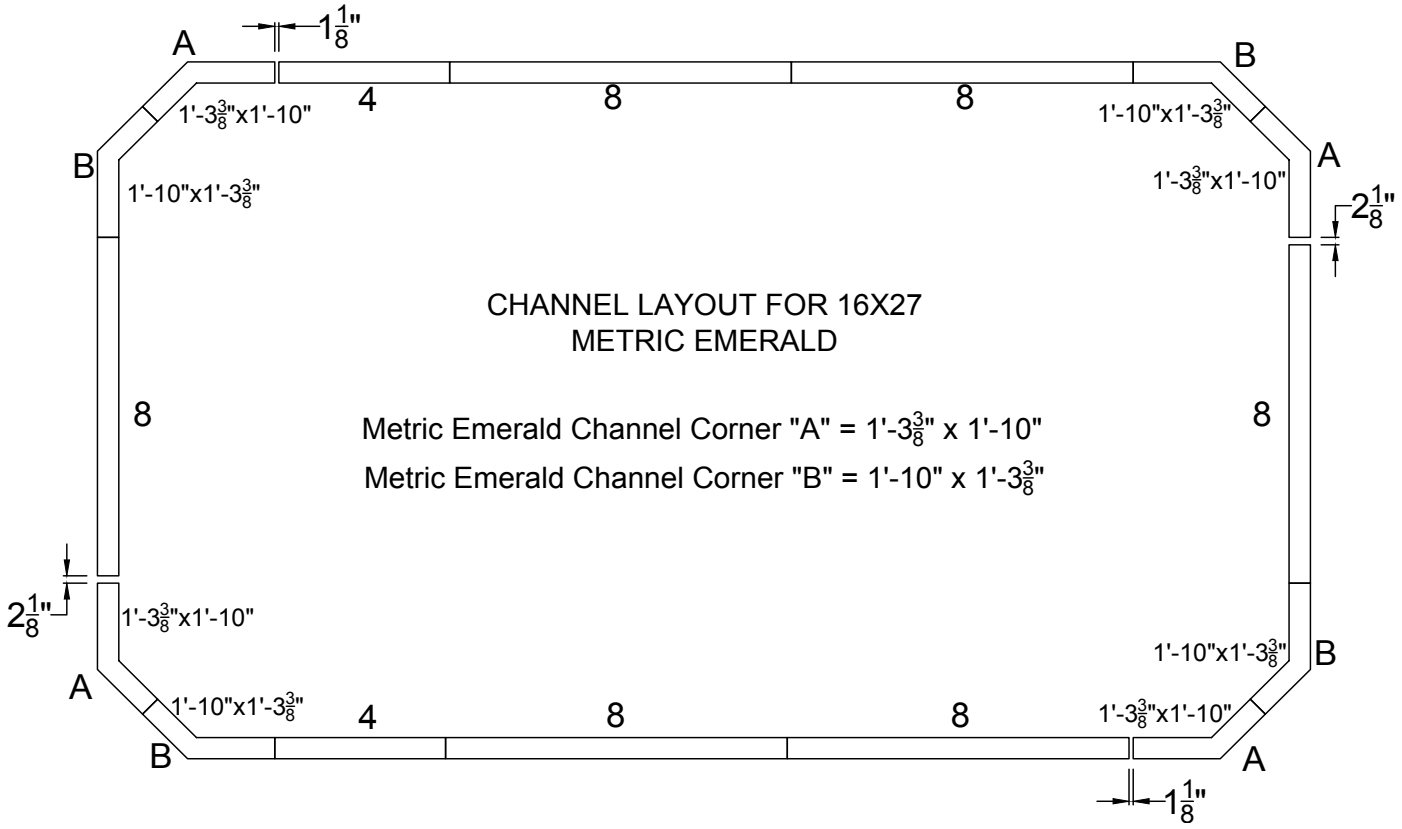
DO NOT OVERTIGHTEN! Check bottom track for cleanliness. Track should be free of all dirt and debris.

CHANNEL ASSEMBLY AND LAYOUT CONT.

C.
Bottom Channel Layout Examples



CHANNEL LAYOUT FOR 16X32
METRIC RECTANGLE



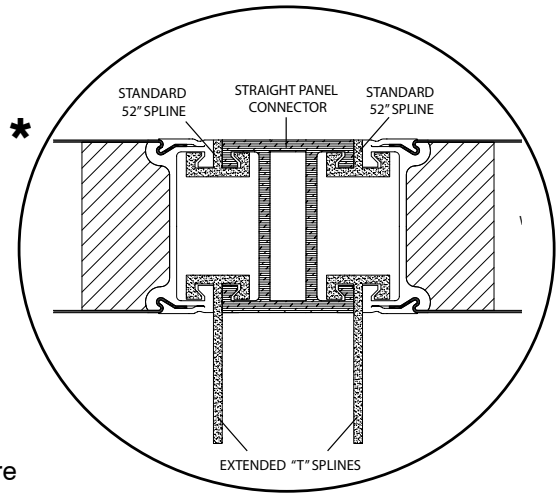
CHANNEL LAYOUT FOR 16X27
METRIC EMERALD

Metric Emerald Channel Corner "A" = 1'-3 3/8" x 1'-10"

Metric Emerald Channel Corner "B" = 1'-10" x 1'-3 3/8"

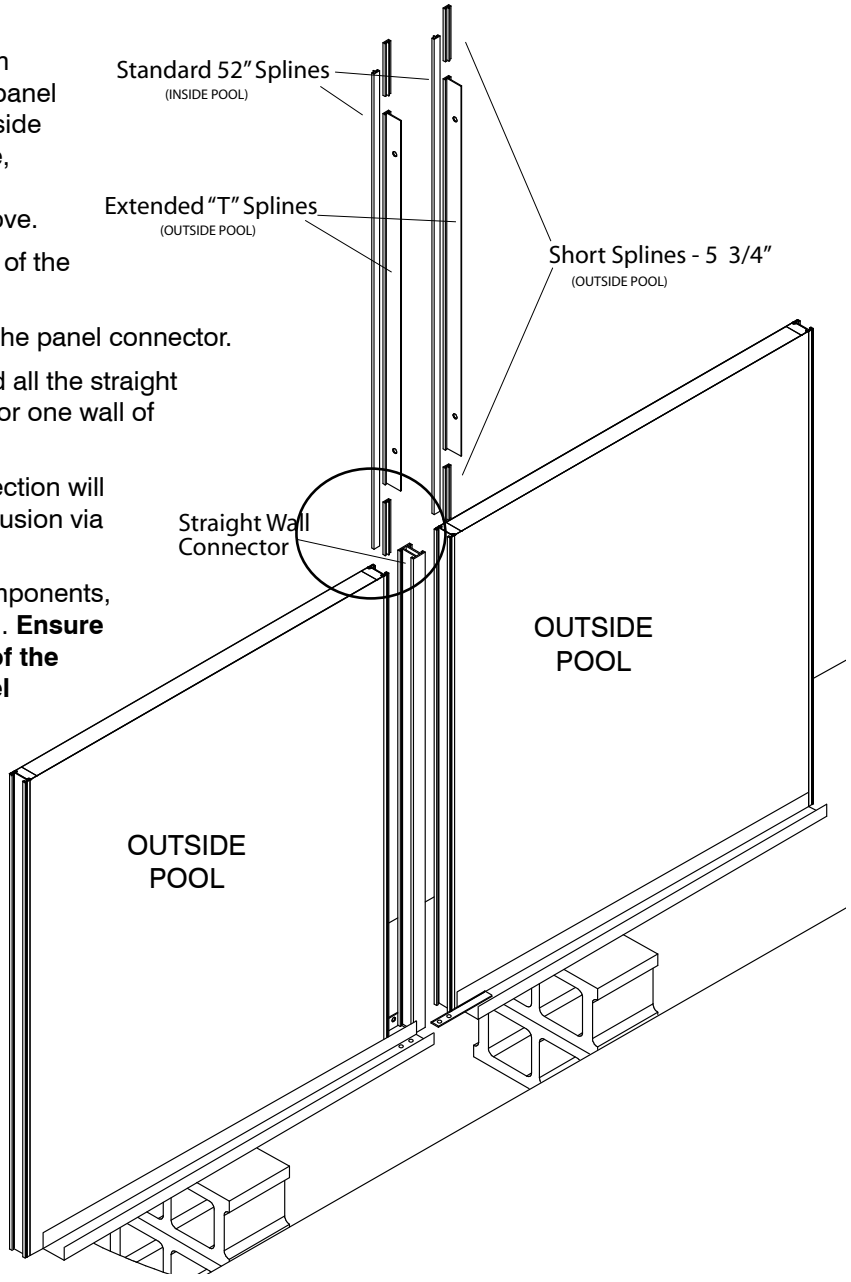
STRAIGHT WALL PANEL & CONNECTOR ASSEMBLY

Note: Use of cooking spray is recommended on the first few inches of the splines to ease assembly. DO NOT use petroleum based lubricants (WD-40). Ease of spline installation depends on level and parallel wall joints.



1. Place the Corner Panel Connector you are working with (Metric Rectangle corner or Emerald corner) into the bottom channel corner so that it stands vertically.
2. Stand a straight panel next to the connector in the bottom channel corner. Install two 52" splines to join the panel and corner connector.
3. Repeat step 2 on the other side of the corner connector. This will allow for a sturdy footprint for installed panels while you are working. For the Emerald, connect one full corner assembly before proceeding to the rest of the perimeter. i.e. 2 emerald corners connecting 3 panels.
4. Place straight panel connector into the bottom channel next to the straight panel. Secure to panel with a 52" spline on the water side. In the outside perimeter groove, secure a 5 3/4" short spline, 40 1/2" extended (T) spline, and topped with another 5 3/4" short spline in the outside groove.
5. Place another straight panel on the other end of the straight panel connector just installed.
6. Repeat step 4, securing the straight panel to the panel connector.
7. Repeat this process until you have assembled all the straight panels and compression seam components for one wall of the pool.
8. The last straight panel on a completed wall section will connect to the corner compression seam extrusion via a series of standard 52" splines, as in step 3.
9. Duplicate this process with the remaining components, stopping before you install the final wall panel. **Ensure that the final wall panel installed falls at 1 of the 4 pre-measured gaps in the bottom channel assembly**. This will allow you to make adjustments as needed. At this point you will need to bring your base material (sand, vermiculite, etc.) in through this opening to prepare the bottom of the pool.

Check level of panels and square of pool before continuing

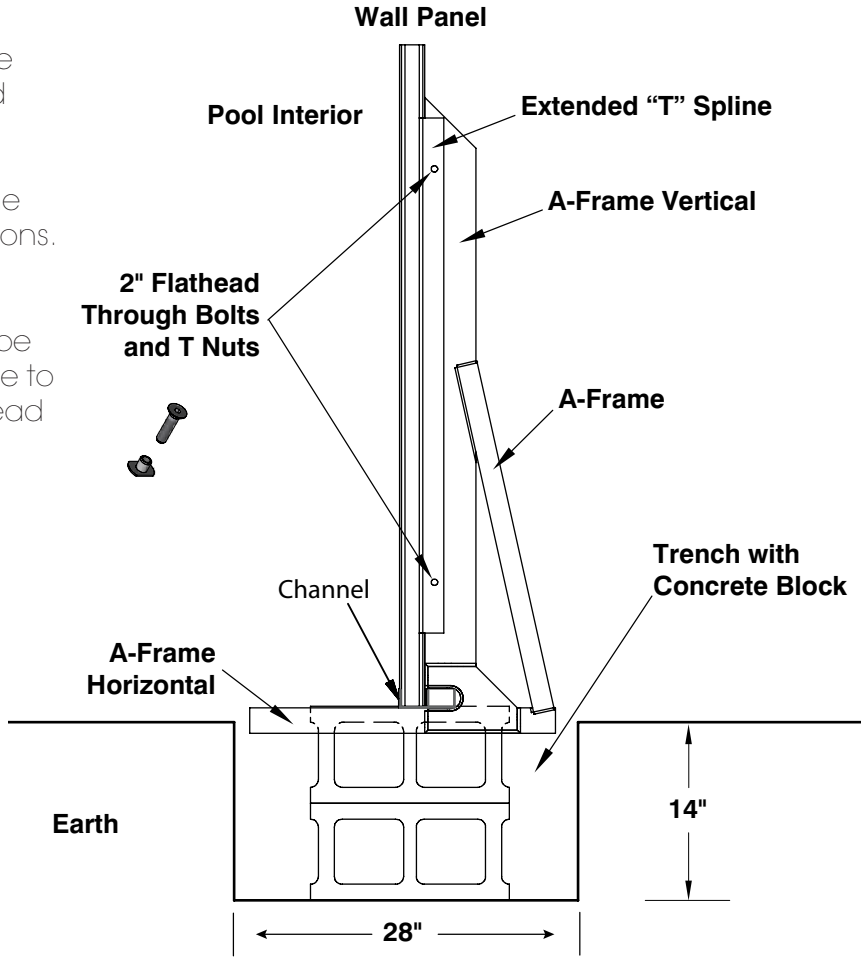


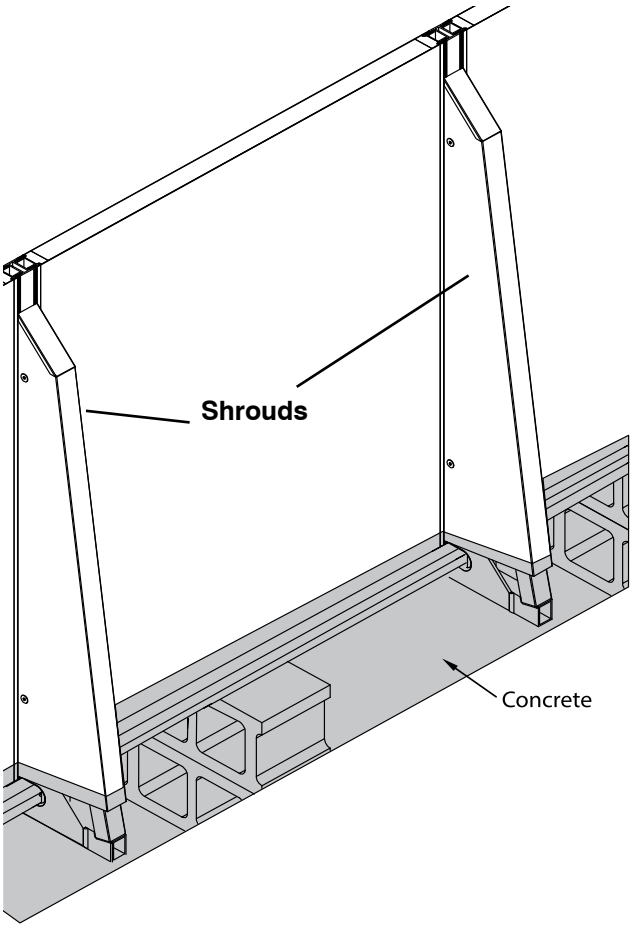
A-FRAME AND SHROUD INSTALLATION

There is one less A-Frame per side than straight panels. The horizontal base of the A-Frame will be under the wall panel and the bottom channel.

The A-frame vertical will interlock inside the extended (T) splines at the wall connections. The A-frame horizontal will slip under the bottom channel and protrude inside the perimeter of the pool. If the A-frames will be completely below ground, secure A-frame to extended (T) splines with two (2) 2" flathead through bolts and T nuts.
DO NOT OVER TIGHTEN.

If any portion of the A-frames are above ground, install shrouds prior to bolting everything together. See below.





A-Frame shrouds may be installed at this time by slipping the shrouds over the entire A-Frame assembly until holes in Shroud, T-splines, and A-Frames align. Secure using the included capscrew and T-nut.

When pouring concrete trenches, concrete should cover all exposed A-frames and very bottom of shrouds. It is important to use a gentle, even pour in order to ensure shroud covers are not damaged and pool perimeter does not shift.

If choosing to install shrouds after concrete has been poured, the bottom of the shroud may need to be cut away above the concrete. Do so by scoring with a knife until the aluminum cuts away, or using tin snips to cut to the desired height.

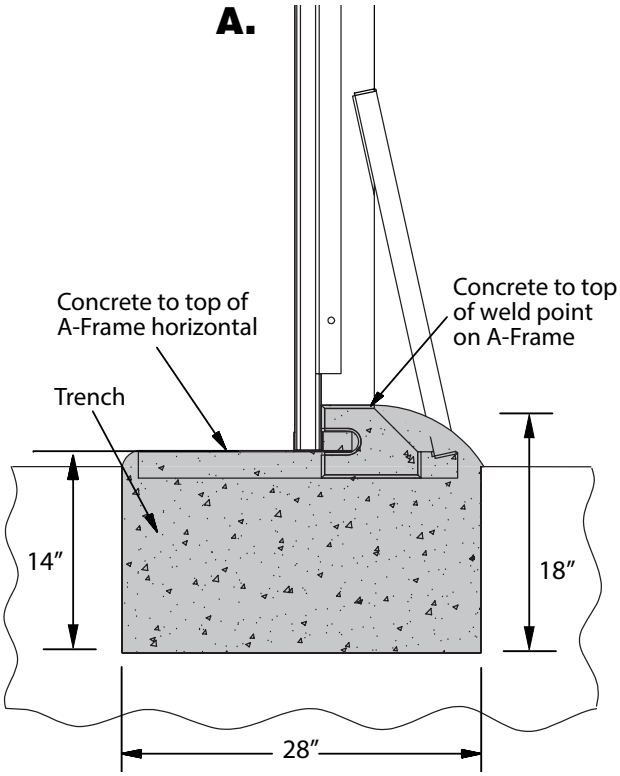
CONCRETE REQUIREMENTS

Follow Table Below For Concrete Requirements. Use Standard Swimming Pool Collar Mix Concrete.
CHECK LEVEL PLUMB AND SQUARE OF POOL ONE FINAL TIME BEFORE POURING CONCRETE

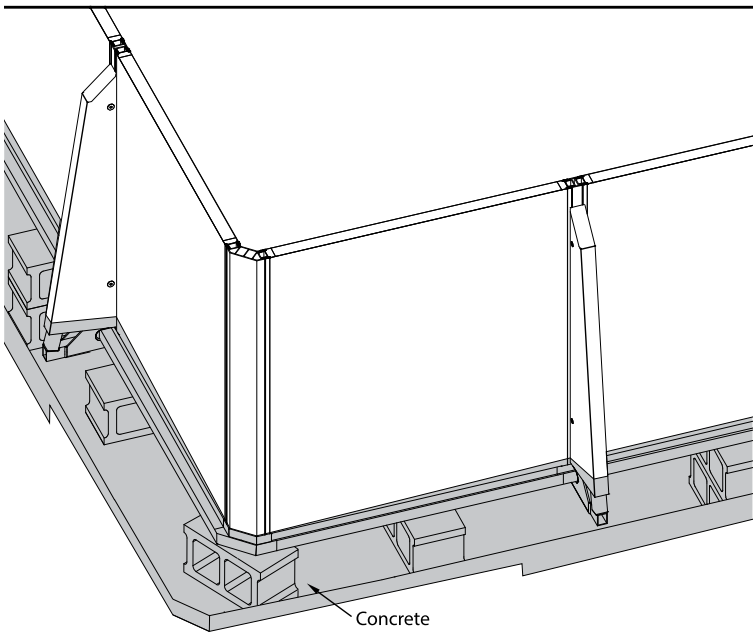
Shape	Ecotherm™ Rectangle					Ecotherm™ Emerald		
Size	8 x 12	12 x 16	12 x 24	16 x 28	16 x 32	12 x 20	16 x 27	20 x 31
25" Backfill or less	5.0 yds	6.0 yds	8.0 yds	9.0 yds	10.0 yds	7.0 yds	9.0 yds	12.0 yds

Fill trench to top of the A-Frame horizontal inside of the pool and to top of weld point on A-Frame on the outside of the pool **(fig. A)**. Allow 24 hours to set before filling pool completely. When pouring concrete trenches, let some concrete flow around corners to tie trenches together **(fig. B)**.

A.



B.



Drawings are for illustrative purposes and are not to scale.

PREPARING THE POOL FLOOR

Pool Shape	Pool Size	Amount of Sand
Ecotherm™ Rectangle	8′ x 12′	12 x 16
	12′ x 16′	1.5 yds
	12′ x 24′	2.25 yds
	16′ x 28′	3 yds
	16′ x 32′	3.5 yds
Ecotherm™ Emerald	12′ x 20′	2 yds
	16′ x 27′	3 yds
	20′ x 31′	4 yds

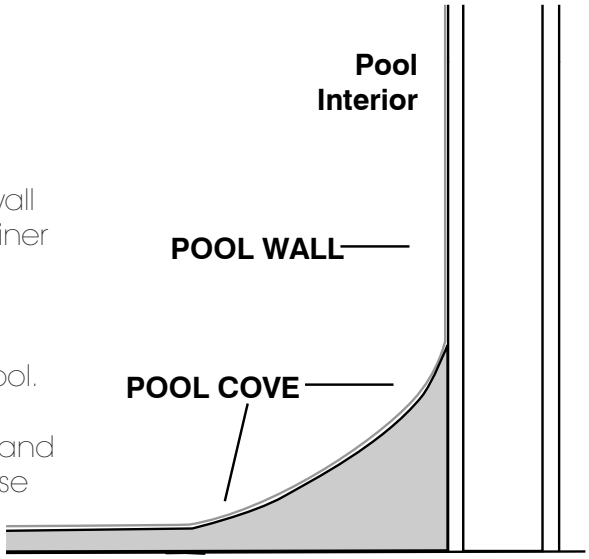
The pool interior must be prepared to provide a smooth surface and protection for the vinyl liner. Check inside of pool area for debris, stones, and any sharp objects and remove them. Using the prescribed amount of masonry sand per pool (as shown in the chart at left) will provide a 2″ layer across the pool floor and a 3″ to 4″ cove up the wall of the pool.

Fill in and tamp soil to top of concrete around the horizontal base support. Place the sand inside the pool area before the last panel is installed.

PREPARING POOL COVE

Using masonry sand, build a pool cove 3″ to 4″ high inside the wall along the entire circumference of the pool. This will prevent the liner from creeping under the wall.
This step is not optional and must be done.

Spread the remaining sand equally across the bottom of the pool. This will give you a 2″ sand base. After the cove and base are in place, rake and tamp the entire pool area. Make sure that no sand is allowed to remain on the wall above the cove. This could cause pinholes in your liner.



Once bottom and pool cove are set, install final panel.

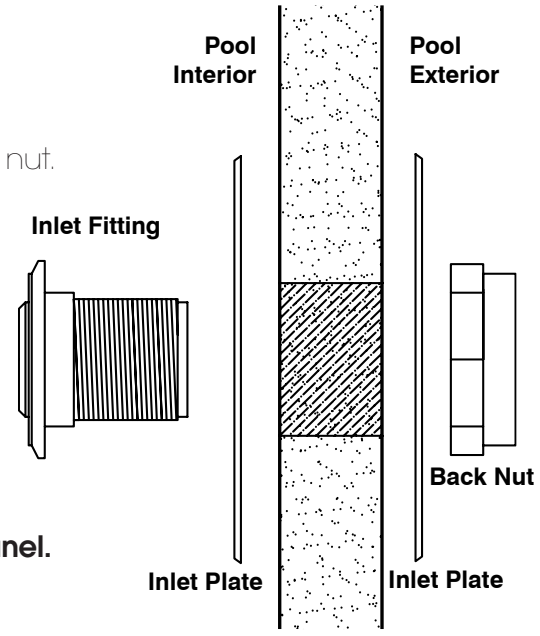
RETURN FITTING ASSEMBLY

The return fitting kit includes 4 parts: inlet fitting, 2 inlet plates & a back nut.

Install the inlet fitting into the pre-cut hole, slide the inlet plate over the exposed threads on the pool interior and exterior, then thread the back nut onto the fitting. DO NOT OVERTIGHTEN.

For additional return fittings, drill 3″ (with 3″ hole saw) hole 12″ down from top of panel. Edges will be sharp but not in contact with liner or hands once wall fitting has been installed. Install return wall fitting per directions, firmly. **DO NOT OVER TIGHTEN.**

Note: For the Ecotherm™ LED light, drill hole 14” down from top of panel. Installation is identical to return fitting.



The return faceplates are attached after the liner is installed.

SKIMMER ASSEMBLY

Install the rubber sandwich gasket on the gray mounting plate, making sure the gasket straddles both sides of the mounting plate. **(fig. I)**

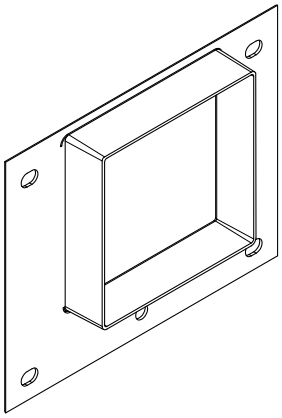
Place the gray mounting plate with gaskets on the pool interior side of the panel cut-out. Insert the white plate with throat on the exterior of the panel, through the pool wall. Secure the assembly with 2¼" countersink bolts and T-nuts loosely through four pre drilled corner holes in the gray mounting plate, the wall panel and the white mounting plate. **(fig. J)**

Use the fifth bolt and T-nut at the bottom center hole in the mounting assembly and tighten firmly. Do not over tighten. **(fig. K)**

Slip skimmer body through the white plate to the gasket on the gray plate. **(fig. L)** Secure tightly with two pan head screws (different style screws in the skimmer hardware bag) from the water side through the gaskets and gray plate into the skimmer body center hole on each side. **(fig. M)**

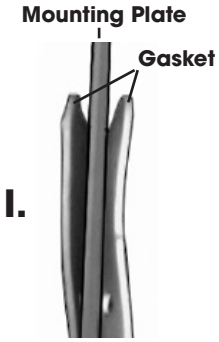
Tighten the four corner bolts, firm, do not over tighten. The skimmer faceplate is attached after the liner is installed.

For Skimmer Assembly instructions for Inground installation, see page 26.



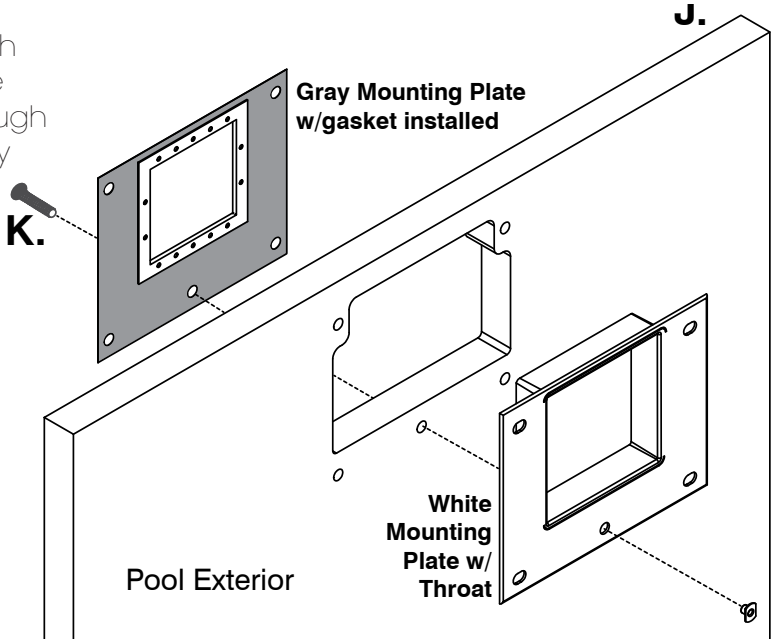
Outside White Mounting Plate w/ Throat

Note: this eliminates the need for the U-shaped Foam Insert previously provided



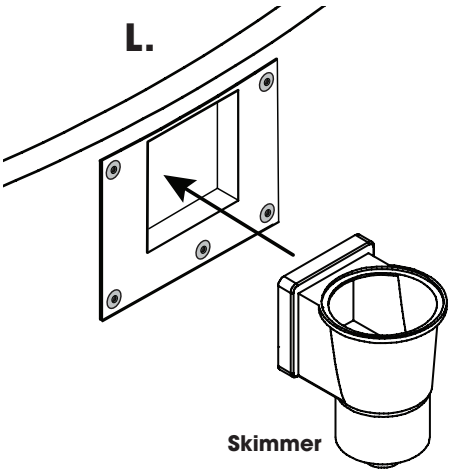
I.

J.

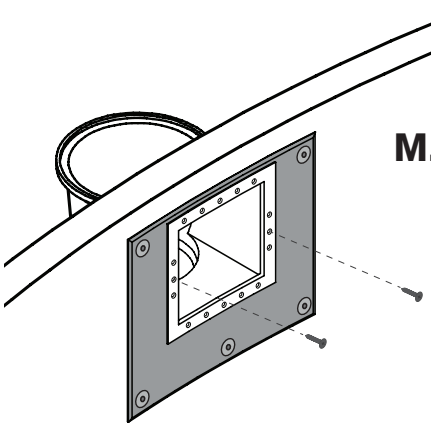


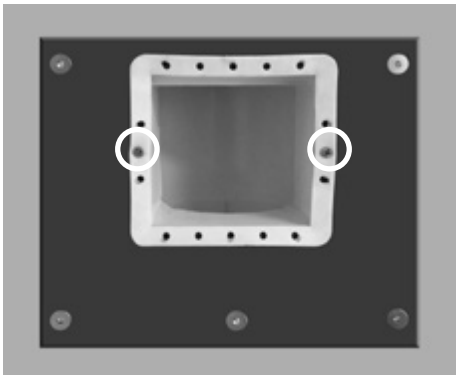
K.

L.



M.



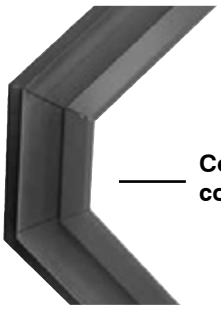


Patent Nos: 9,890,547/D837,471/D830,012/10,138,645. Other Patents Pending.

INSTALLING UNIVERSAL COPING SYSTEM

Patent Nos: 10,006,215, 10,161,152. Other Patents Pending.

The Universal Coping System kit is comprised of two components: an aluminum double track base and a top coping kit for the intended finishing option.

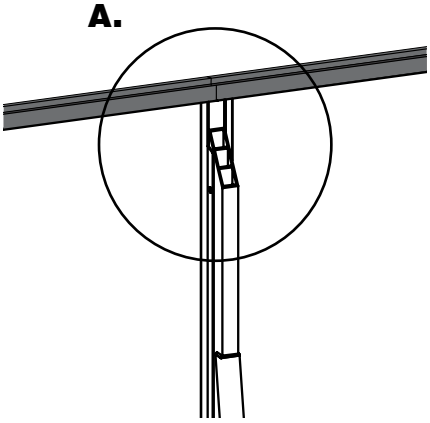


Coping Base corner piece

Aluminum Base:

The aluminum base includes straight lengths and corner pieces. Beginning at a corner, lay the base corner piece over the corner connector and continue over straight panels. When laying straight lengths, **be sure that base joints are centered over an A-Frame l ocation (fig. A)**. Once all base pieces are in place and joint breaks are properly positioned, secure by driving a self-tapping TEK screw though the base and into the panel on the outside of the pool wall perimeter at 12" intervals.

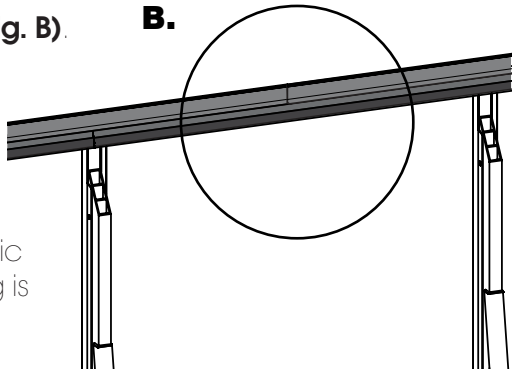
A.



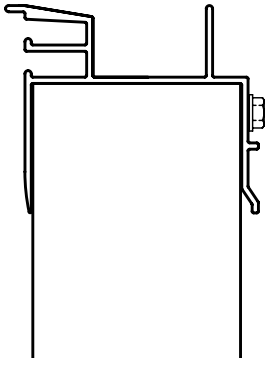
Top Coping:

- **For pools finished with Pavers:** only the Universal Base is used. No top coping is needed. **(fig. C)** Once the aluminum base is installed, proceed to the next step.
- **Universal Deck/Concrete Coping:** Starting at a corner location, place corner coping piece into the aluminum base and continue over straight lengths. All coping joints should offset from the base joints **(fig. B)**. Once all coping pieces are in place and joint breaks are properly positioned, secure by driving a self tapping TEK screw through the flange of the coping and into the aluminum base. **(fig. D)**
- **Plastic Aboveground Coping:** Starting at a corner location, hook the bottom of the plastic coping onto the bottom of the aluminum base. Apply pressure toward the pool until the top edge of the plastic coping snaps into place. Do this until all the aluminum base coping is covered. **(fig. E) Optional: You may use provided coping screws to attach the plastic cap to the aluminum base on the outside of the pool. You must pre-drill holes on the plastic cap to do this.**

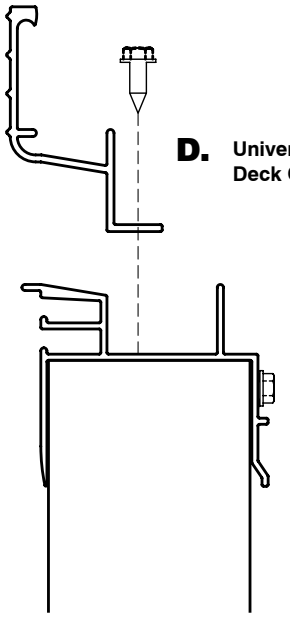
B.



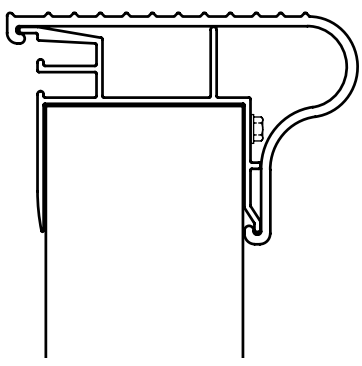
C. **Double Track Aluminum Base for Pavers**



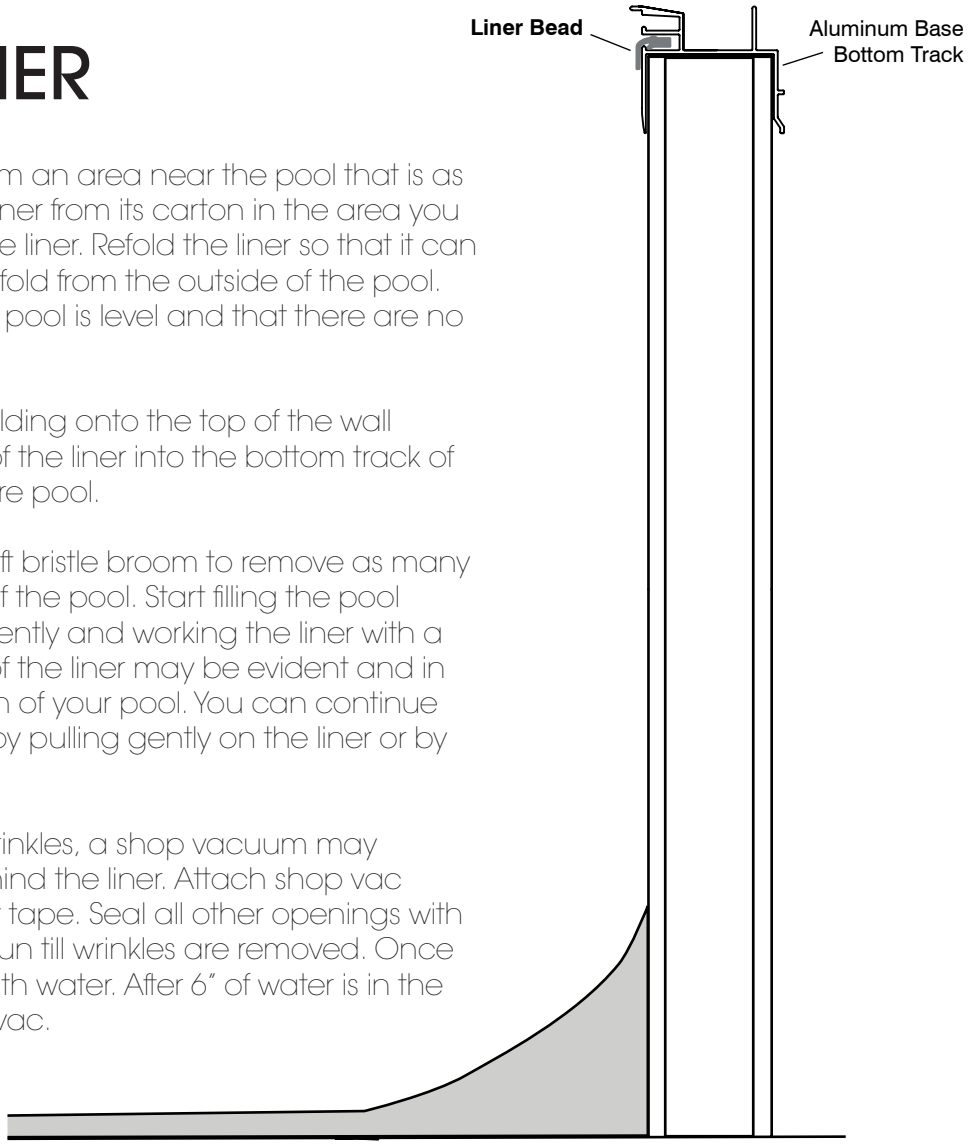
D. **Universal Concrete/ Deck Coping**



E. **Plastic Aboveground Coping**



INSTALLING LINER



Clear all sticks and sharp objects from an area near the pool that is as large as the pool itself. Remove the liner from its carton in the area you have prepared. Unfold and open the liner. Refold the liner so that it can easily be carried to the pool and unfold from the outside of the pool. Check to make sure the sand in the pool is level and that there are no sharp objects in the pool.

Place the liner into the pool while holding onto the top of the wall section of the liner. Snap the bead of the liner into the bottom track of the aluminum base around the entire pool.

Gently pull on the liner and use a soft bristle broom to remove as many wrinkles as possible on the bottom of the pool. Start filling the pool slowly with water. Continue pulling gently and working the liner with a broom as needed. Some wrinkling of the liner may be evident and in no way affects the structural strength of your pool. You can continue to work out the wrinkles as needed by pulling gently on the liner or by using a broom.

TIP: To help in removing stubborn wrinkles, a shop vacuum may be used to suck the air out from behind the liner. Attach shop vac to skimmer outlet and seal with duct tape. Seal all other openings with duct tape as well. Turn on vac and run till wrinkles are removed. Once the wrinkles are gone, begin filling with water. After 6" of water is in the pool, turn off and remove the shop vac.

FILLING YOUR POOL

Water Gallonage per Size

Whether you are filling the pool with your own home water source or through a water-fill service, please use the charts below to determine the water volume requirements for your particular size pool.

Please see your pool professional for instructions on proper water testing and balancing.

Emerald Pool Size	Gallonage*
12' x 20'	5,955
16' x 27'	11,488
20' x 31'	16,554

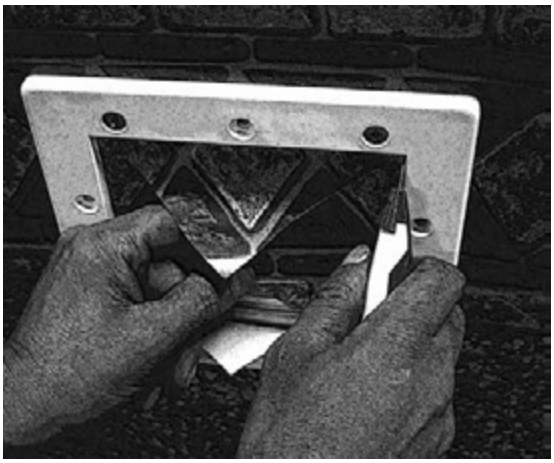
*Assumes 44" - 46" water depth

Rectangle Pool Size	Gallonage*
8' x 12'	2,724
12' x 16'	5,373
12' x 24'	8,022
16' x 28'	12,403
16' x 32'	14,161

INSTALLING FACEPLATES

Once the water level reaches 2"-3" from the return and skimmer, install the faceplates. Carefully locate the screw holes for each opening. Once located, carefully puncture the liner with an ice pick or nail. Attach skimmer faceplate with 1" screws and hand tighten evenly in order as shown in skimmer faceplate image below. When installing return faceplate, hand tighten each screw by a half turn, alternating between each, until all are tightened evenly. This ensures uniform compression of sealing gaskets. Using a razor knife, carefully trim the liner from inside of the openings for the skimmer and return. When done, install the eyeball into the return.

Locate screw holes.



Trim liner from skimmer opening.

Skimmer faceplate installed w/screw tightening sequence.

Trim liner from return opening.

Return faceplate installed.

Note: Follow Step manufacturer's instructions for installation of step faceplate and gasket after the liner is installed and water level reaches 6-8" depth.

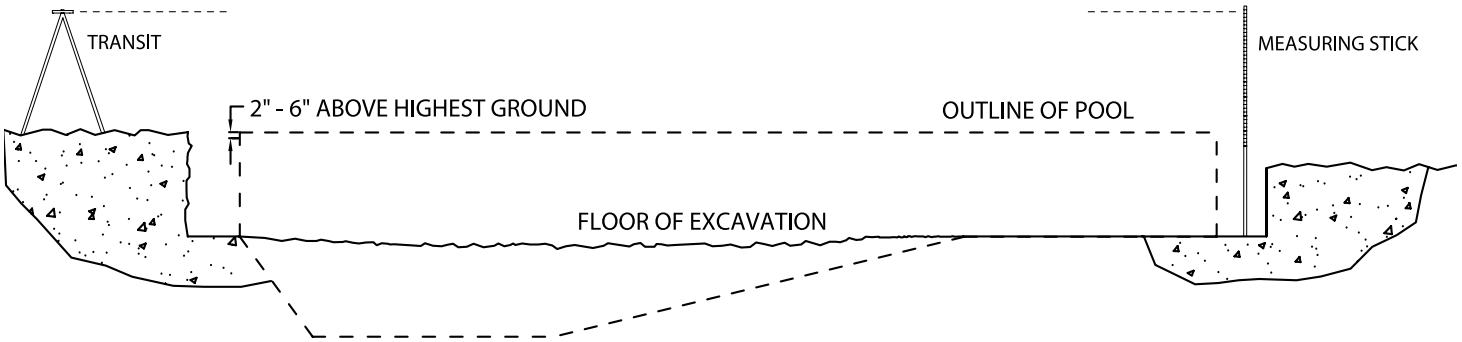
COMPLETING INSTALLATION

Please refer to the manufacturers' installation instructions for all other installation components. These include pump, filter, lights, and all other equipment and accessories.

ECOTHERM™ RECTANGLE & EMERALD INGROUND INSTALLATION INSTRUCTIONS

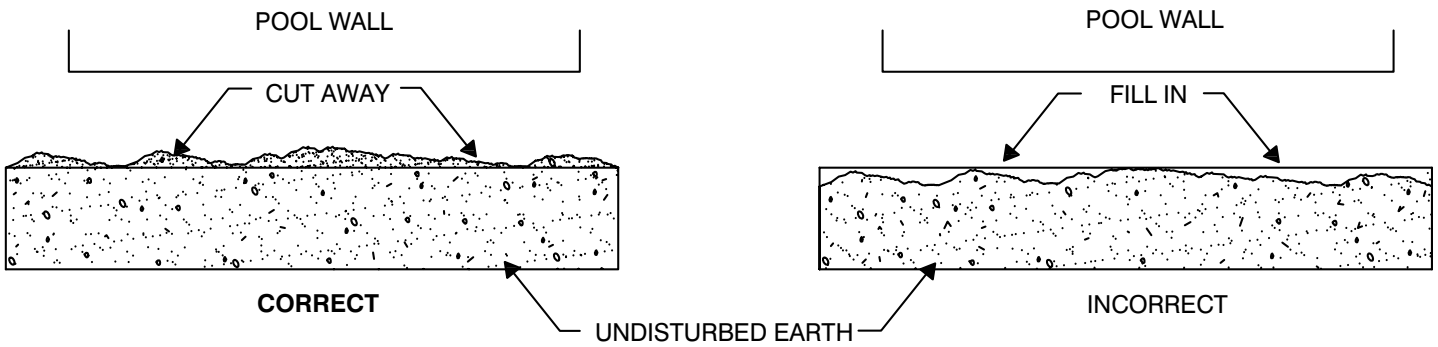
INGROUND: LEVELING THE EXCAVATION

Establish the benchmark of the pool. The finished height of the pool includes the wall height, coping and the decking (pavers, wood deck etc.). The Benchmark will determine the depth of the excavation where the panels will rest. With the shape of the pool excavation marked out, its height relative to the ground must be determined. The pool should be set at a height so that rain and splash will drain away, rather than towards the pools. It is best to use a building level, transit and a measuring stick to determine the required depth of the excavation. It is best to set up the transit in a location so that you can leave it in the same place for the entire pool excavation. It is best to keep the top of the pool 2-6" above the ground at the highest point so that you are able to place your deck on undisturbed soil.



SIDE VIEW OF EXCAVATION SITE

Since the overdig will be 2 feet wider than the actual pool dimension, it is important that the excavator does not dig the 2 ft ledge too deep. ***(NOTE: A 2 ft overdig is recommended for first time installations, Experienced installers may choose to use a 1 ft excavation at their discretion.)*** A sturdier pool will result when the pool rests on undisturbed earth. It is better to have to remove an inch or two by hand than to have to build up after the excavator has gone too deep. Any voids beneath the wall panels caused by large rock removal, etc., must be filled and properly compacted.



INGROUND: WALL INSTALLATION

See Pages 15-18 for pool assembly instructions. If installing a walk in step on your Ecotherm™ Rectangle or Emerald, the step should be installed first, building the walls from there. See next page for step installation instructions.

PREPARING FOR WALK-IN STEP

If steps are going to be installed, excavate a 6 foot by 10 foot area where they are to be located on the pool. Please see the dig specifications for locations of steps.

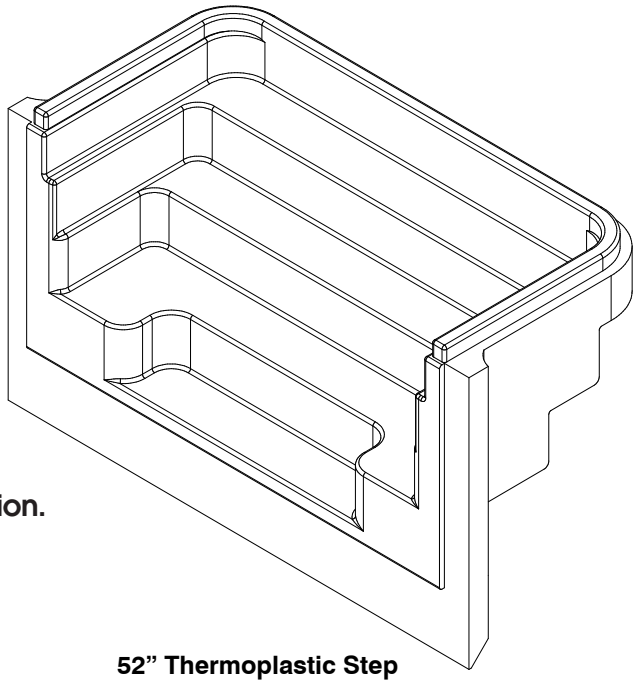
INGROUND: WALK-IN STEP INSTALLATION

Prepare and Position Step

Install leg supports for the steps. For steps supplied by Ecotherm Pools™, instruction will be provided. If steps are purchased separately through another provider, verify compatibility by talking with a Ecotherm Pools™ representative. Be sure to check step manufacturer's instructions as the step supports will vary by manufacturer.

Position the step in the desired location. Level step, establish benchmark. The benchmark (finished height of the pool) includes the wall height, the coping and the decking (concrete, pavers, etc). Adjust height of step by aligning top of coping with top of step and plumb by checking f ront face of step unit with adjoining panel. **See images below to determine the proper benchmark for your installation.**

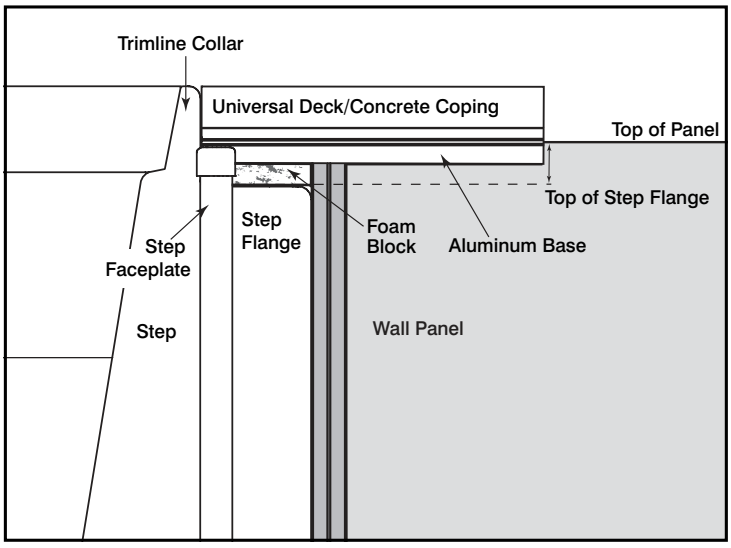
Once step is positioned, check levels from side to side and front to back.



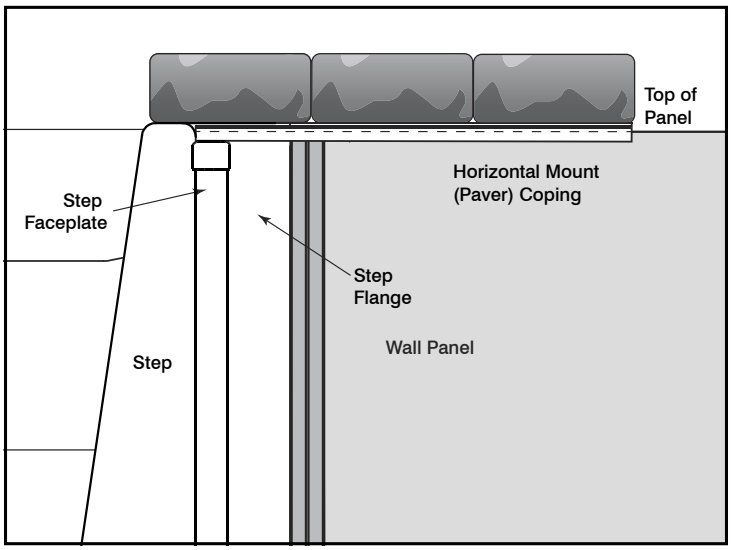
52" Thermoplastic Step

*WHEN INSTALLING A WALK-IN STEP, IT IS CRITICAL THAT THE STEP AND ADJOINING PANELS ARE BACKFILLED COMPLETELY

Trimline Step w/Universal Deck/Concrete Coping



Cantilever Step with Paver Coping



INGROUND: WALK-IN STEP INSTALLATION

Installation Components (item # KS-52-RWSA):

- (2) Seam Connectors
- (2) 52" Standard splines for interior side of pool
- (2) each: 40 ½" Extended T splines and 10" Standard Splines for exterior side of pool
- 3/8" Carriage Bolts and Nuts; Backer Washers
- (2) A-Frames for connection to T Splines on either side of step

Assemble the stair adapter kit to the first pool panel with the standard 52" spline on the interior side of pool and the extended T-spline on the exterior of the panel. Position the panel butting up to the step flange and mark the location of the spline stair adapter with a marker or piece of tape.

Disassemble the adapter kit and clamp the seam connector to the step flange in line with the marked outline with vise grips or C-clamps. Using a 7/16" drill bit, drill through the step flange at the holes in the seam connector. Bolt the seam connector on to the step flange using the backer washer and nut on the inside of the step flange.

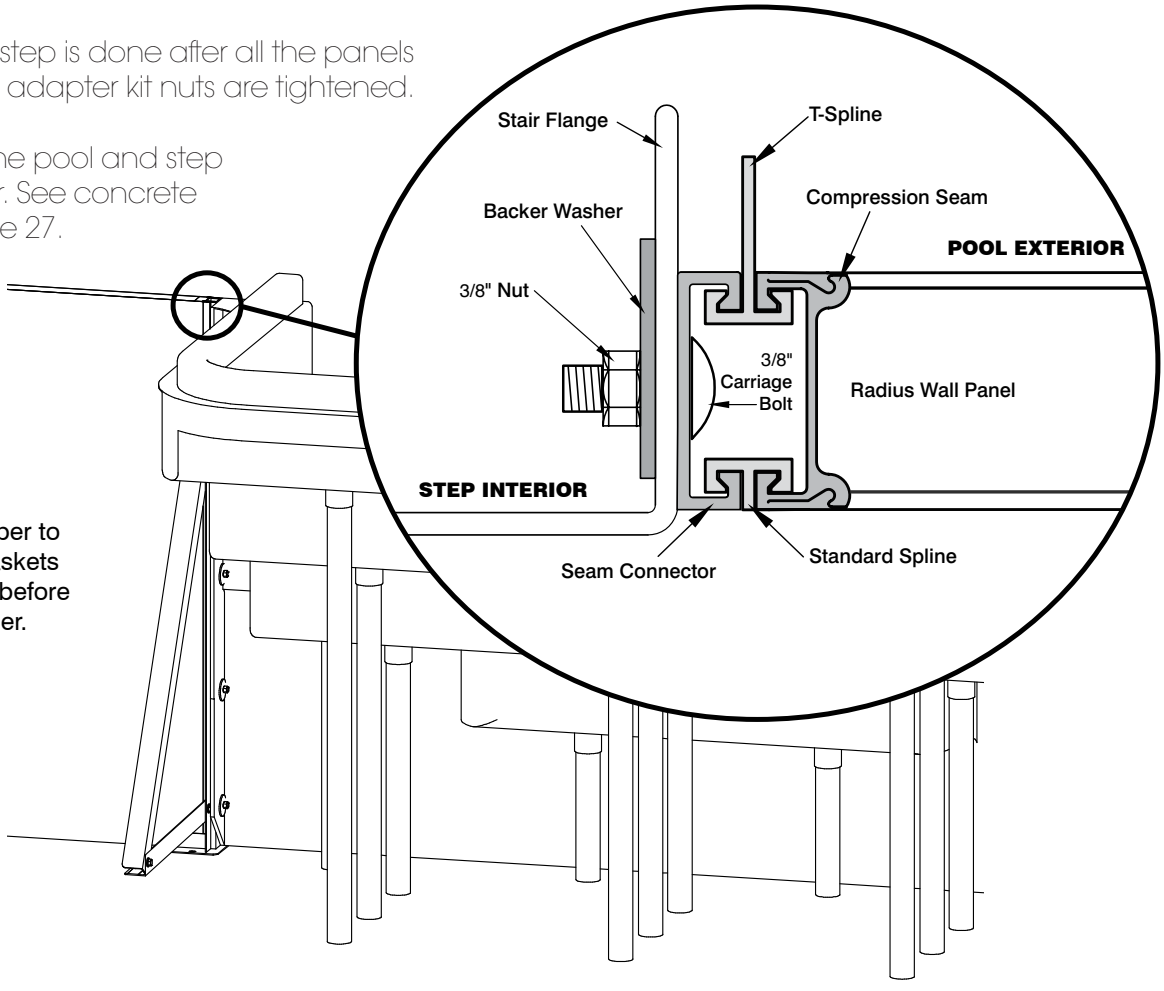
Important: Keep carriage bolts & nuts very loose until all panels are installed.

T-spline assembly / Final adjusting

The extended T-spline is installed on the exterior side of the pool, with holes to attach the A-frame components. The 10" standard spline is installed on top of the T-spline. The 52" standard spline is installed on the interior side of the pool.

Final adjusting of the step is done after all the panels are installed and stair adapter kit nuts are tightened.

Encase the base of the pool and step with a concrete collar. See concrete requirements on page 27.

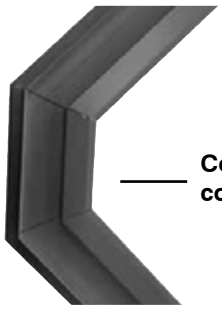


Note: Remember to remove stair gaskets and faceplates before installing the liner.

INSTALLING UNIVERSAL COPING SYSTEM

Patent Nos: 10,006,215, 10,161,152. Other Patents Pending.

The Universal Coping System kit is comprised of two components: an aluminum double track base and a top coping kit for the intended finishing option.

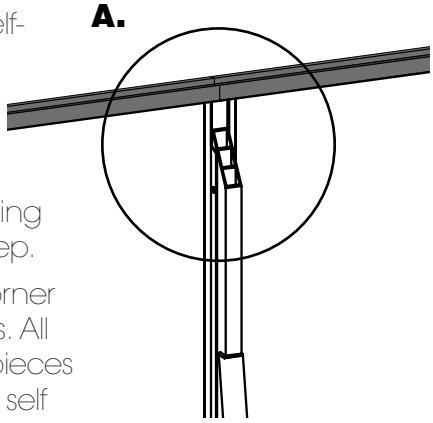


Coping Base corner piece

Aluminum Base:

The aluminum base includes straight lengths and corner pieces. Beginning at a corner, lay the base corner piece over the corner connector and continue over straight panels. When laying straight lengths, **be sure that base joints are centered over an A-Frame location (fig. A)**. Once all base pieces are in place and joint breaks are properly positioned, secure by driving a self-tapping TEK screw though the base and into the panel on the outside of the pool wall perimeter at 12" intervals.

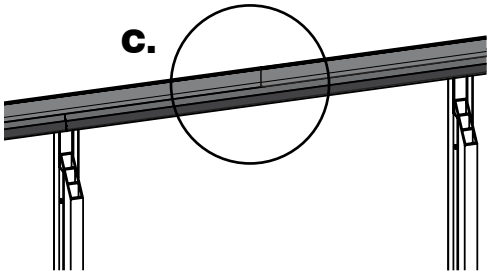
A.



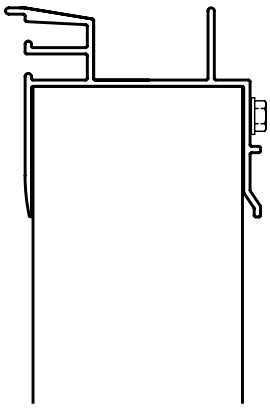
Top Coping:

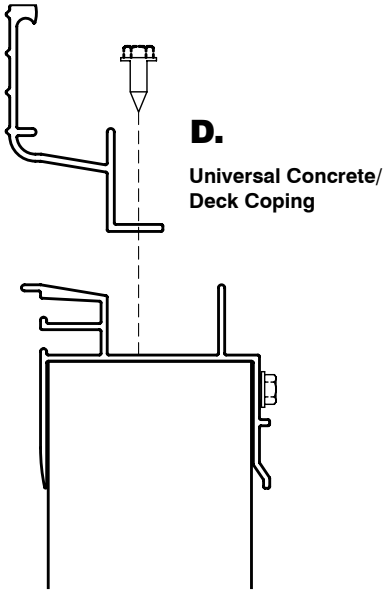
- **For pools finished with Pavers:** only the Universal Base is used. No top coping needed. **(fig. B)** Once aluminum base is installed, proceed to the next step.
- **Universal Deck/Concrete Coping:** Starting at a corner location, place corner coping piece into the aluminum base and continue over straight lengths. All coping joints should offset from the base joints **(fig. C)**. Once all coping pieces are in place and joint breaks are properly positioned, secure by driving a self tapping TEK screw through the flange of the coping and into the aluminum base. **(fig. D)**

C.



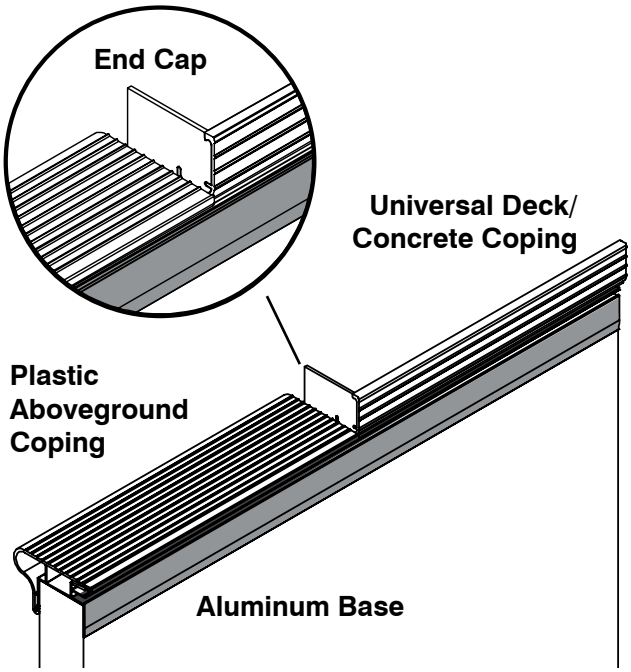
B. **Double Track Aluminum Base for Pavers**





D.

Universal Concrete/ Deck Coping



Transition with Mixed Coping

End caps are available for installation of Universal deck/concrete finish cap and the Universal plastic finish cap's combination. The end cap provides a clean finish to the concrete and fits inside the Universal deck/concrete finish cap before the lower profile of the Universal plastic finish cap's start.

INGROUND: SKIMMER ASSEMBLY

Mount the aluminum skimmer plate **(fig. A)** to the inside pool wall and the white plastic mounting plate **(fig. B)** to the outside pool wall using the included nuts and bolts. Keep all connections slightly loose to ensure correct skimmer placement.

Mount inground skimmer to the aluminum skimmer mounting plate using the included screws. Now securely tighten nuts and bolts on mounting kit and cover edges of aluminum plate with duct tape.

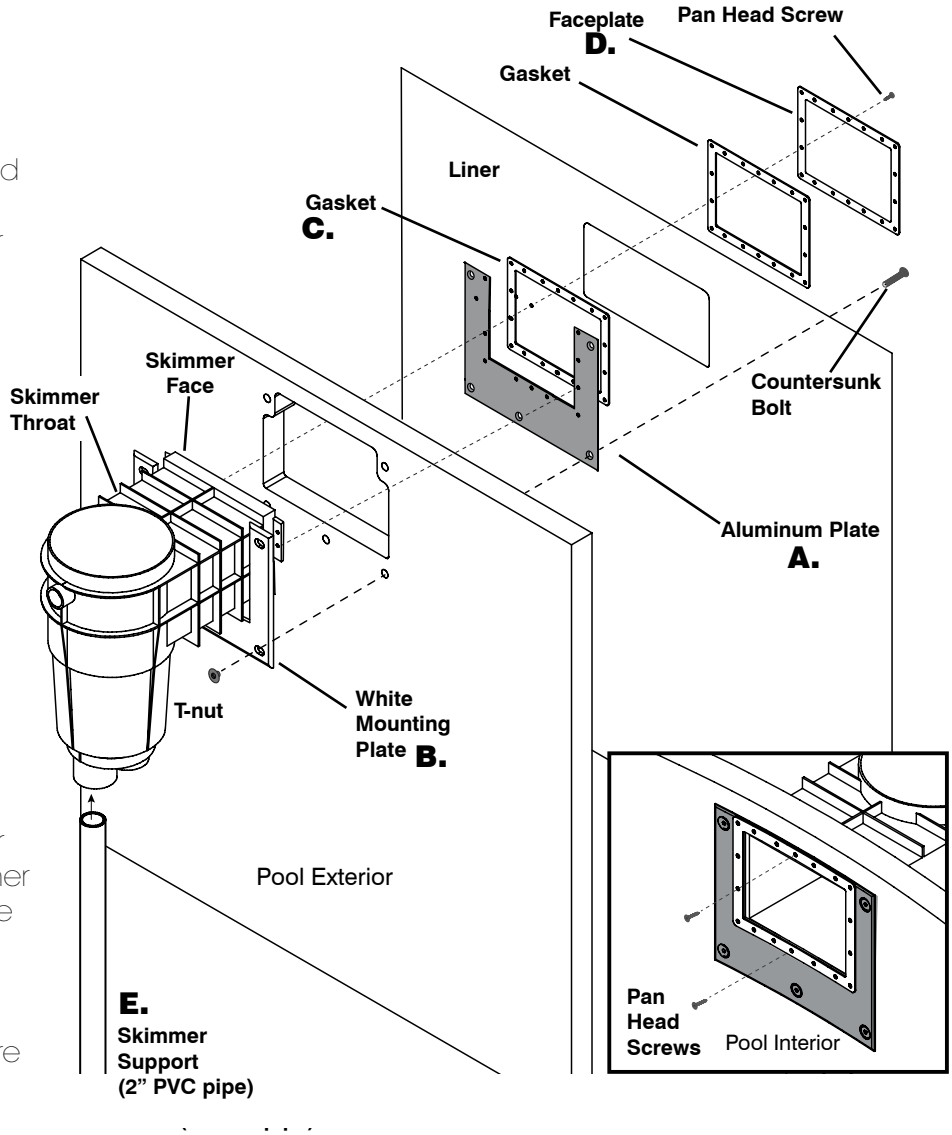
Position one gasket **(fig. C)** on the sealing surface of the skimmer and secure tightly with duct tape. When dropping the liner, you may want to install the liner bead around skimmer locations last, in order to avoid disturbing gasket placement.

After liner has been installed and water level approaches skimmer, prep skimmer faceplate **(fig. D)** by lining up faceplate and gasket, and then carefully drive screws through faceplate, gasket, liner, interior gasket and into skimmer throat. Securing the corners first will help ensure correct placement.

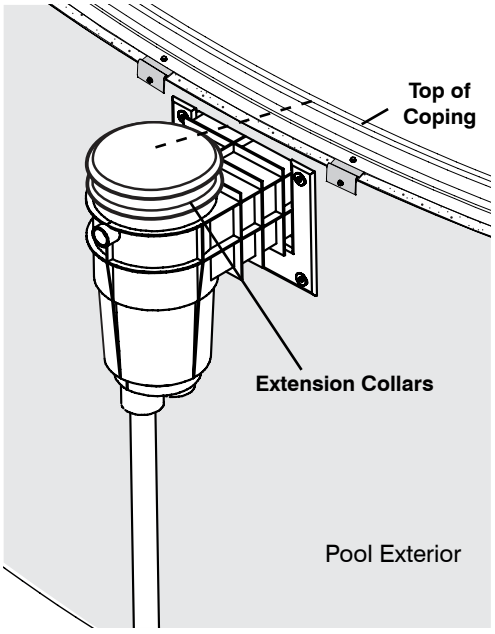
As water level approaches skimmer, carefully cut out liner from inside of skimmer faceplate with sharp blade, making sure to avoid nicking gaskets.

Notes: It is recommended that 2" Schedule 40 PVC pipe be cut to size, depending on installation. Plug unused skimmer port. Place PVC pipe under skimmer body and adjust to make top of skimmer level. **(fig. E)**

Any gaps in the back of the white mounting plate should be covered using a spray foam filler such as "Great Stuff". After the concrete collar is poured, check level of skimmer top.



Extension Collars: Extension Collars (not included) **(fig. F)** are used with most inground skimmers to raise the top of the skimmer to the height of decking. The number of extension collars needed is determined by benchmark established by top of coping.



Patent Nos: 9,890,547/D837,471/D830,012/10,138,645. Other Patents Pending.

CONCRETE COLLAR GUIDE

Before pouring the concrete collar, check with your electrician as they may want to bond the pool first.

Check with local building codes before installing your Ecotherm™ Rectangle pool inground. Ecotherm Pools™ requires a minimum of 8" concrete collar around the entire pool if any point of the pool wall is 26" or greater in the ground and/or if the pool has a walk-in step **(fig. 2)**. An example of a semi-inground pool requiring a concrete collar is shown below **(fig.1)**.

When installing an inground thermoplastic walk-in step, add 2.5 yards of concrete to the ***'Concrete Requirements table'*** for the concrete around the step and A-frames **(fig. 4)**.

Do not pour concrete directly on the pool walls. Pour concrete away from the wall and let it flow to the wall.

fig. 1

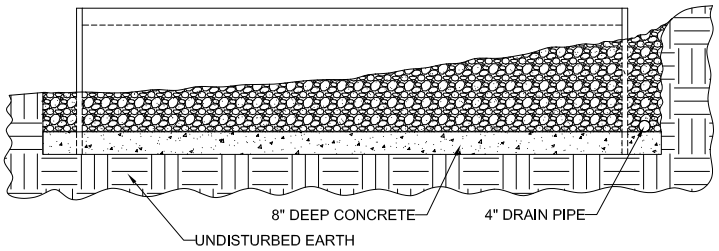


fig. 2

Semi-Inground Concrete Collar

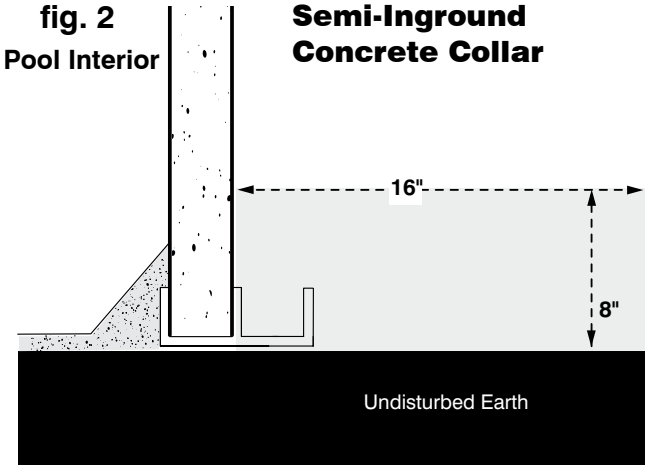
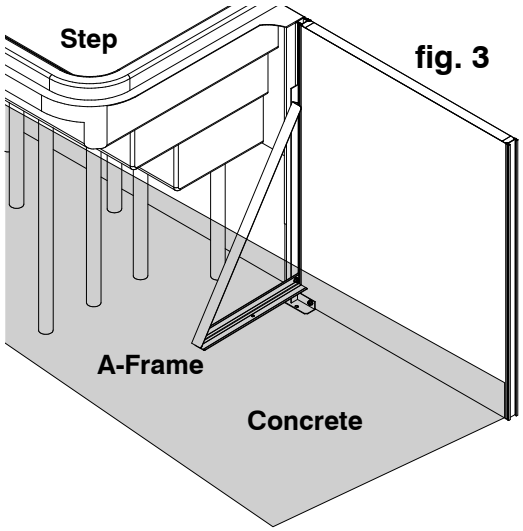


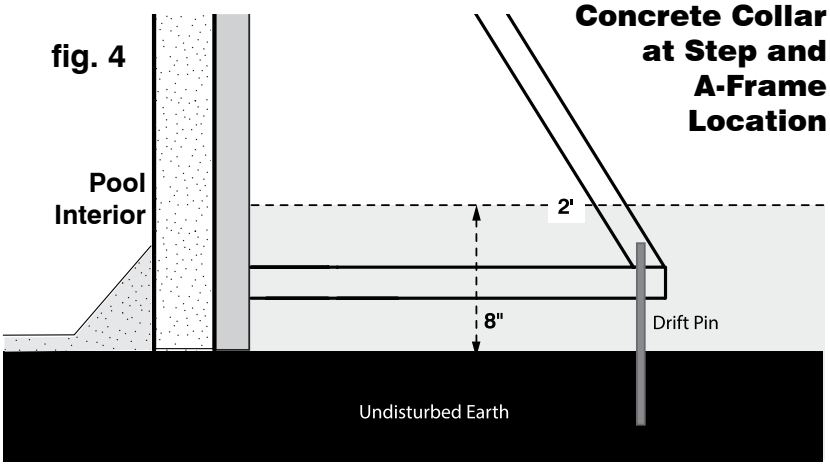
fig. 3



Note: Complete backfill is required around the step.

fig. 4

Concrete Collar at Step and A-Frame Location



Concrete Requirements Table:

The following table describes the amount of concrete required in yards for Metric Rectangle & Emerald Pools. Add an additional 2.5 yards if thermoplastic walk-in step is included. See Pg. 31 for Concrete Collar Sizes.

Shape	Metric Rectangle					Metric Emerald		
Size	8x12	12x16	12x24	16x28	16x32	12x20	16x27	20x31
25" Backfill or less	5.0 yds	6.0 yds	8.0 yds	9.0 yds	10.0 yds	7.0 yds	9.0 yds	12.0 yds
26" or more Backfill (Concrete Collar)	3.5 yds	4.25 yds	5.5 yds	6.25 yds	7.0 yds	5.0 yds	6.25 yds	8.5 yds
Fully Inground (Concrete Collar)	4.25 yds	5.0 yds	6.75 yfd	7.0 yds	7.75 yds	6.0 yds	7.5 yds	10.0 yds

BACKFILL AND DRAINAGE

Before backfilling, check with electrician for pool bonding. Sonotubes may be installed at the time of collar pour to support the deck.

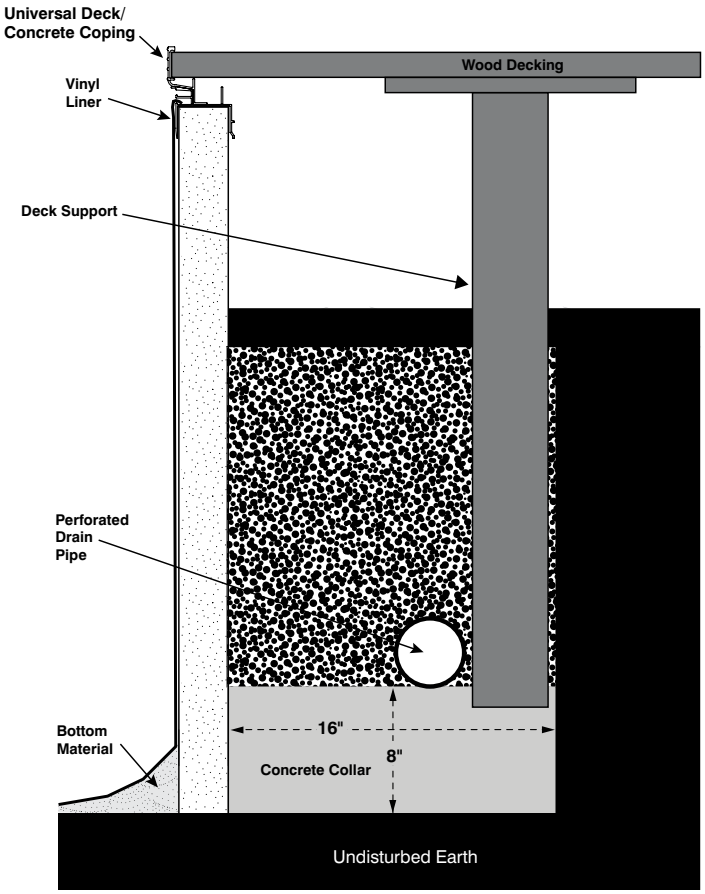
Backfill may go directly against a pool wall. Structural fill is required. Do not use expansive soil (e.g., clay).

For semi-inground or fully inground installations, the uphill run-off should be redirected around the pool incorporating a french drain concept using a perforated drain pipe and water relief area away from the pool and other structures.

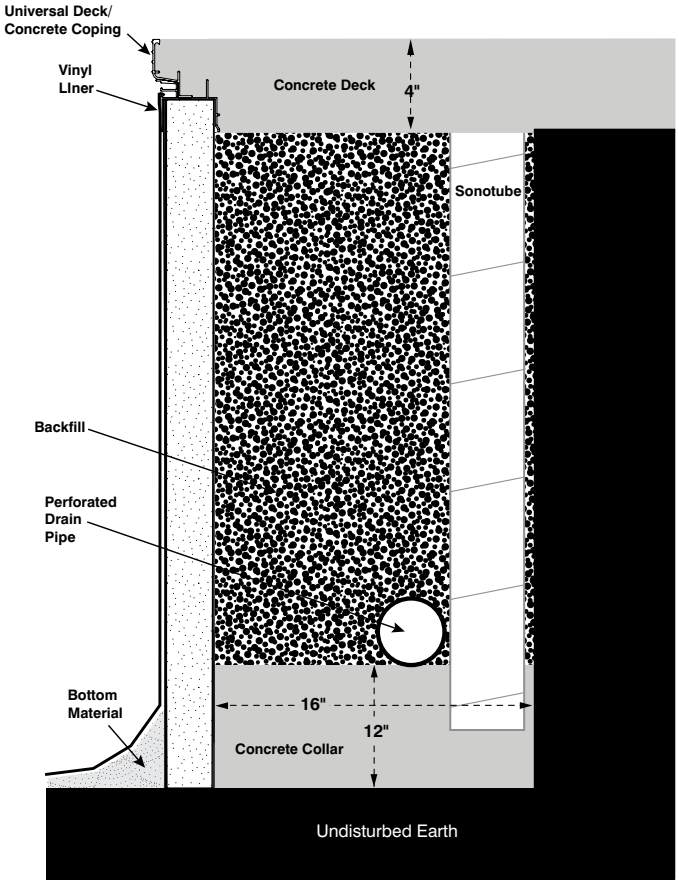
Backfill as the pool is filling with water, manually compacting every 8"-12" **(Do not use compacting machinery.)** Hand backfill around skimmers, lights and inlets. Be sure that piping is buried, but not crushed.

If backfilling completely before pool is filled, the walls must be cross braced at the top, inside the pool. This is not the recommended method of backfilling your Ecotherm™ pool.

Semi-Inground



Full Inground



NOTES

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