

Installation Guide For Spillways & LED Light Bars

TABLE OF CONTENTS

A1. Size Availability.....	Page 3
B1. Type of Spillway Effects.....	Page 3
1. Planning.....	Page 3
2. Ponds – To dig or not to dig?	
2.1 Using Pond Liners.....	Page 4
2.2 Using Troughs/Reservoirs.....	Page 4
3. Building your wall (and pond surround if above ground).....	Page 4-5
4. Above Ground Troughs/Reservoirs.....	Page 5
5. Installing your Spillways.....	Page 5-6
6. Pumps	
6.1 Pond Pumps.....	Page 6
6.2 Pool Pumps.....	Page 7
6.3 Starting Up your Spillway Effect.....	Page 8
6.4 Notes on Pump Installation.....	Page 8
7. Testing your Connection & Spillways.....	Page 8
8. Spillway LED Light Bars.....	REFER TO SEPARATE INSTALL GUIDE Page 8
9. Lining and Cladding.....	Page 8-9
10. Your Project is Complete!	Page 9
11. Maintenance.....	Page 9
12. Diagram 1.1 – Typical Above Ground Installation Set Up.....	Page 10

Thank-you for choosing iEarth Spillways to build your new water feature project. With proper installation in accordance with Manufacturer's Instructions, your Project should provide you with many years of gratifying results.

A1. Size Availability

iEarth Spillways are available in 600mm, 900mm, 1200mm and 1500mm Lengths, each with two (2) bottom entry 25mm (1 inch) inlets.

B1. Types of Spillway Effects

1. **Cascade/Wall Wash** - This is achieved where water flows softly from the spillway and cascades down the wall face into a pond or pool. We recommend to install a pump with a minimum flow rate of 50-60 Litres per minute (l/min) per metre spillway length.
2. **Falling Sheet** - This is achieved where a water flow is allowed to run away from the wall, so that a sheet of water 'free falls' vertically downwards. We recommend to install a pump with a minimum flow rate of 120 Litres per minute (l/min) per metre spillway length.
3. **Projecting Sheet** - This is achieved where a large volume of water passes through the spillway, producing a solid sheet of water that projects away from the wall. We recommend to install a pump with a minimum flow rate of 150 Litres per minute (l/min) per metre of spillway length and the spillway installed no higher than 900mm from water level. Note - the further the water drops, the narrower the water sheet widths become due to surface tension.

You want to build a water feature but where do you start?

1. Planning

Like any Project you do, planning ahead is paramount in ensuring you have a smooth, hassle free outcome.

Here are some handy tips to consider;

- What type of effect I want to create? cascading, free falling, projecting or a combination of all three?
- Where will I want to install my new water feature?
- What space have I got?
- What size (width) spillway do I need?
- Will I need local Council permission to build it?
- Will I need someone to build it or can I do it myself?
- Will I want my pond to be inground or above ground?
- What wall facing do I want? (We recommend light weight veneers such as InfinitiStone Series). Light weight products ensure unnecessary weight to your structural wall can be avoided, eliminating the need to add foundations.

We recommend that you sketch your design in a plan view and elevation view to show what you plan to build. You can also bring this with you during your visit to businesses where you propose to purchase the products required to complete your project.

2. Ponds - To dig or not to dig?

****If going for above ground trough, go to item 4.**

With inground ponds, you basically have two options;

2.1) Using pond liners:-

- This entails deciding on where you want to position your pond,
- Excavate to the size desired in length, width and depth,
- Place pond liners to manufacturer's instructions,

Note - there is a higher risk of leaking using this method so care should be taken to eliminate same.

2.2) Using Troughs/Reservoirs:-

- This will require you to purchase the unit you require,
- Place the selected unit in desired location,
- mark out the contour of the unit with stakes/pegs around the edge of the unit,
- Remove the unit leaving the stakes/pegs as your guide,
- Excavate as required to the unit's contours starting with the lowest point,
- Top approximately 50-100mm of sand, compact it level and,
- Remove all stakes/pegs and place unit into position, ensuring it is sitting on excavated ground,
- Use level to align the unit, ensuring it is level.
- Once levelled, fill 1/3 of the unit with water to prevent unit from floating or moving,
- Any side gaps to be filled in with compacted sand and washed in with water.

Notes:

- Take care not to damage existing underground services eg plumbing pipes, electrical cables etc.
- Ensure the excavated hole is approx 50mm larger than the unit for ease of positioning. Gaps can easily be filled in with compacted sand later.

3. Building your wall (and pond surround if above ground)

As you can imagine, there are numerous ways of building your structural framework, such as timber stud frame with board lining, blockwork, brickwork etc, inclusive of your pond surround.

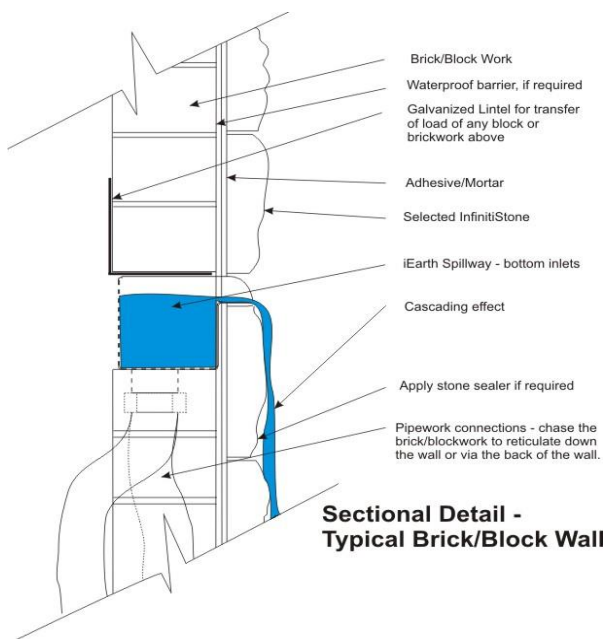
With all method of construction, it is vitally important to ensure your footing is designed sufficiently to carry the gross weight of your wall and finishes desired.

Notes:

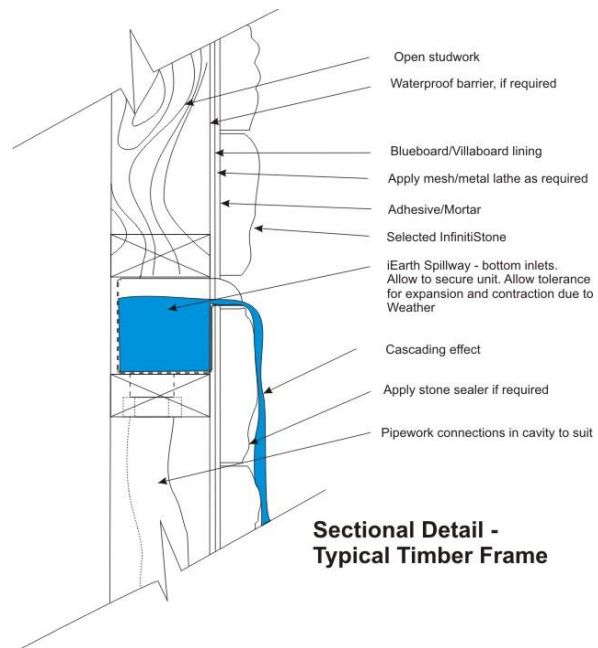
- A rule of thumb would be if you are unsure, consult your local professional carpenter for advice.
- It is important to leave sufficient spacing for servicing your water feature connections in case of leaks or general servicing.

See next page for typical Wall Construction Options eg. Brick/Block or Timber Sectional Details

For the purpose of this guideline, our diagram 1.1 on page 10 is based on using timber framework.



**Sectional Detail -
Typical Brick/Block Wall**



**Sectional Detail -
Typical Timber Frame**

4. Above Ground Troughs/Reservoirs

Note - you will need to purchase the trough first before any framing works begin, to ensure the dimensions of your new surrounds will fit neatly and tightly to your prefabricated trough/reservoir. Always allow 5-10mm tolerance ie the surrounds to be a bit larger than the trough dimensions length and width wise.

Once the sub-frame work is completed, including your trough surround, you are ready to install your trough.

- Insert the trough, making sure the trough lip is sitting on the top of the surround framework,
- Check that the bottom of trough is supported sufficiently. This is important as large gaps between supports may cause the trough to bow due to weight of water,
- Put pump into position,
- Layout the hose and connections to proposed locations,
- Drill a hole in the trough wall and install a wall connector, just large enough for the threaded tube of the Tank Fitting to go through. Unscrew the fitting and feed the threaded tube through, then tighten the flanged nut on the other side with the two rubber gaskets both sides. This allows water to be pumped through the connector. This method allow for a neater finish as hose will be submersed and generally hidden. An easier method would simply be extending the hose directly from the pump outlet and direct it around the side of wall and up to the spillway inlet. Aesthetically the latter method will not be as pleasing to the eye!
- See diagram 1.1 Front and Side Sections for typical detail

5. Installing your Spillways

- Install the water spillway at the desired height.
- For projecting effect, we do not recommend exceeding 900mm from water level. The further the water drops, the narrower the water sheet widths become due to surface tension and also, water sheet tends to break therefore not give you a full sheet effect.
- See diagram 1.1 on details of typical hose connection details.
- From the inlets of the spillway, screw your Hose Tail/s*,
- Cut the hose to lengths as required from the spillway inlet end to your Tee Junction*, connect hose end to end as required. Use hose clamps to ensure no leaks.
- From the bottom Tee, connect another hose tail,

- Cut the hose to length as required from the bottom Tee to pond Tank Fitting*, connect end to end as required. Use hose clamps to ensure no leaks.
- Connect your Tee Junction* and Control valve* from end of Tank Fitting*, extend hose to outlet of pump as required. Ensure the control valve is pointing towards the pond so that backflow water is directed back into the pond.
- See diagram 1.1 for typical connection details.

Notes:

- Your spillway must be checked for levelness, to ensure even water effects along your spillway width. Use packers as required to level, if necessary.
- wrap teflon tape on all threaded fittings.
- For projecting effect, ensure you use minimum 40mm diameter hose to Tee Junction before it splits and directs to the IEarth spillway inlets.
- We recommend that your pond should be at least 100mm longer either sides of the IEarth spillway for cascading effect and at least 200mm longer either side for free fall or projecting effect.
- The higher you install the spillway, the more splashing may occur.

6. Pumps

6.1 Pond Pumps

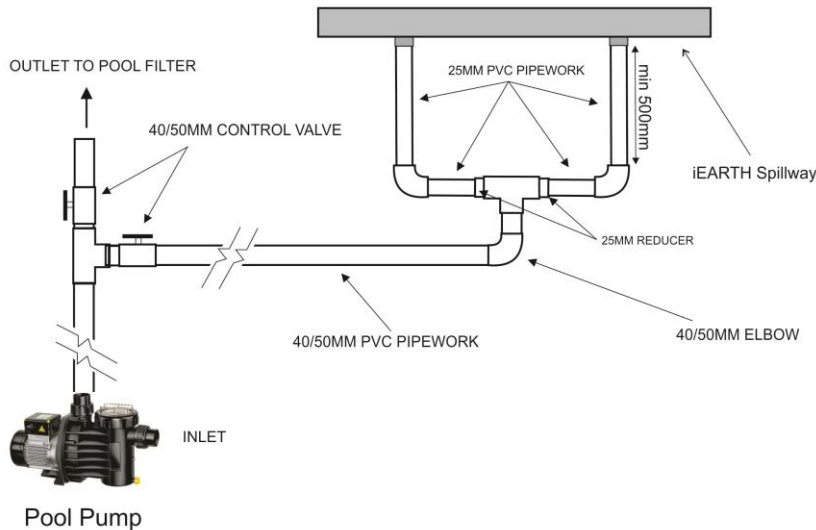
Pond Water Feature Pump Packages – when purchasing your pump package from us, appropriate pump sizes have been selected to ensure the optimum effect however, other management set up options should be considered, namely;

- Do I want total control of flow rate?
 - For Cascading/Wall Wash effects, you should consider installing a 2 way ball valve and by slowly opening and closing the lever, allows you to control the flow rate to desired effect. NOTE – not recommended to close the lever more than 20-30%, else backflow problems can occur, voiding the pump warranty.
 - For Projecting effects, you should consider installing a Back Flow (3 way) connection Kit as well. Opening the lever will release up to 50% of water flow back to the pond, while reducing flow into the spillway. For single units, you can use the same set up shown on page 7.

6.2 Installing existing Pool Filter Pumps

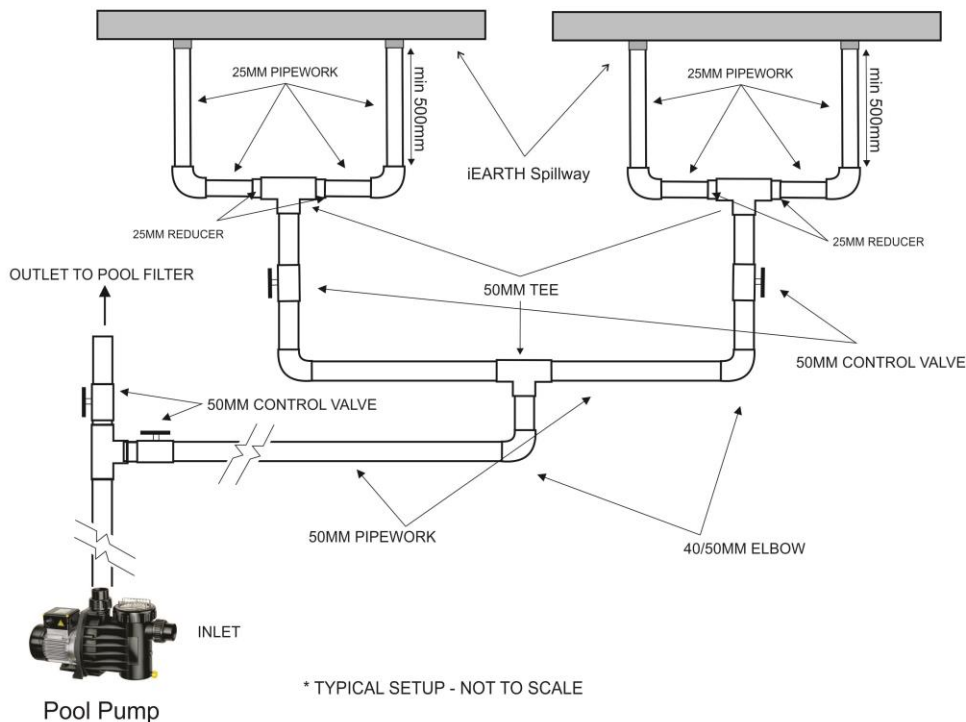
The most common plumbing set up for swimming pools are to use the existing pool filter pump to supply the water to the spillway. You should install a three way control valve (installed in an accessible position to regulate the flow rate) on the supply line, with returning water to be diverted to the pool, pond or holding tank. Typically 40-50mm PVC rigid pipes should be used from pump to Tee and then reduce to 2 x 25mm to spillway. See below.

TYPICAL SPILLWAY PUMP SETUP FOR SWIMMING POOLS



* TYPICAL SETUP - NOT TO SCALE

Installing multiple units of iEarth Stainless Steel Spillways



* TYPICAL SETUP - NOT TO SCALE

6.3 Starting up your Spillway Effect

As soon as the pool is finished and filled with water you are ready to start the spillway effect.

- Turn your pump on and let it run for a few minutes to clear all debris out of the lines
- Then slowly open the valve and allow water to flow to the Spillway unit
- Using the 3 way valve, adjust the water flow rate to suit
- After a few minutes the air should have been cleared from the pipes and the spillway should now provide continuous sheet of water (projecting effect).

6.4 Notes for Pump & Pipe/Hose work Installation

- If you are installing a separate pump, make sure to 'prime' the system by opening the in-line valve(say 15-20%), let it run for a few minutes, then slowly increase to give you the desired effect.
- If installing multi spillway units, you can install the same way as single units except that you will need to install separate 2 way valve to each unit, which are used to control the distribution of water between each unit. The minimum flow rate to each unit still applies ie you need to add the total length of the spillways x the minimum rate recommended on page 2.
- If using PVC rigid pipes, ensure to keep the elbows minimum 500mm below spillway inlet entry point for projecting effect. Using our spillways, set up would be 2 x 25mm from bottom of inlet spillway entries to Tee Junction then 40-50mm pipe to pump. Note – elbows too close to bottom inlets will reduce output.

7. Testing your connection and Spillways

Before you clad any linings or apply new finishes, ensure you test your connections first. Top water to level just deep enough for the pump to work properly and turn on. Make sure the effect is to your satisfaction and also, that there is no leak in any of the connecting junctions.

8. Spillway LED Light Bars

IMPORTANT

REFER TO SEPARATE INSTALLATION GUIDELINE FOR THIS ITEM. IF NOT INCLUDED WITH YOUR ORDER, PLEASE CONTACT YOUR ORIGINAL PLACE OF PURCHASE TO OBTAIN A COPY. WE RECOMMEND READING THIS GUIDELINE IN FULL PRIOR TO INSTALLTION.

9. Lining and Cladding

Firstly, line your front and back face of your studwall with cementitious sheeting. Cut the slot as required for the spillway lip. This should be the only seen part of the spillway from the front face.

Line sheeting to surrounds of your trough as well, if above ground.

Use **InfinitiStone** architectural stone veneer to finish off. Installation instruction of stone veneer can be obtained via www.infinitistone.com.au.

It is vitally important that waterproof preparation works are carried out to ensure no moisture problems in the future.

If in doubt, please contact your local building supply business for expert advice.

10. Your Project is complete!

You are now ready to turn your pump on and enjoy the water feature you have completed. Remember to adjust the flow rate to achieve your desired water flow by simply adjusting your control valve lever handle.

11. Maintenance

It is essential that you keep your pond water as clean as possible to ensure long life of your pump. It is recommended to invest in a filtering system with UV lights so that greening and algae growth are minimised if not eliminated. Consult your local pond professional if in doubt.

Important Notice

This installation guide is provided as a guide to assist you in installing your water feature and associated pumps and Lighting. iEarth, DIY Home Improvement, DIY Mega Store, Infiniti Stone, (all products of DIY International Pty Ltd), its Directors and any of its servants or agents (us) take no responsibility for any actions you take as a result of these instructions. Installation of the water feature are solely at your own risk and will not hold us liable against any Claims for loss, damage, cost or expense whether direct, indirect or consequential (including for loss of profits, business or anticipated savings) brought, made or threatened against us by any third party arising directly or indirectly due to using this guide. We recommend that you consult with your local council, water authority or any other body that has jurisdiction over the installation of water features in your area.

SPILLWAY INSTALLATION - TYPICAL

DIAGRAM
1.1

