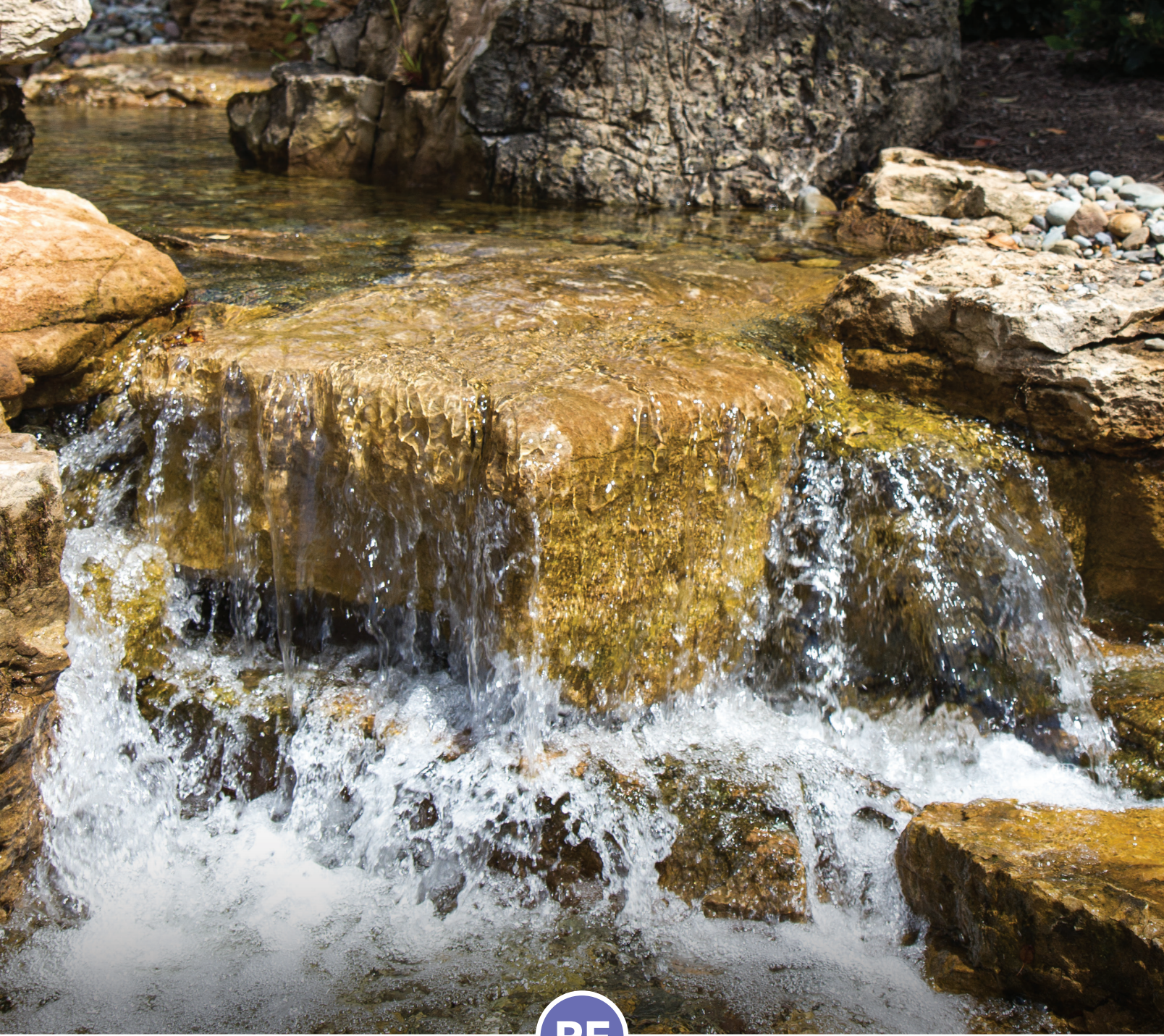




POND-FREE



Pond-free water features are the ideal solution for those who want the sight and sound of a natural waterfall without the maintenance of a pond.



WHAT IS A POND-FREE WATER FEATURE?

Pond-free water features, by definition, are those water features that do not include a pond from which to draw water. Instead, they rely on a closed recirculation system built into the surrounding landscape and designed to convey a natural appearance. A pump housed in a Pump Vault draws water from the reservoir and sends it up to a FastFalls to create the stream or falls. Because the reservoir is closed and protected, maintenance, liability and operating costs are typically much lower.

BENEFITS OF POND-FREE

Pond-free features provide the sight and sound of waterfalls and streams without the liability and maintenance.

- They're simple, easy and less costly to construct and maintain, with no skimmers or filters, UVs or aerators, nor the associated maintenance. They can function without supervision, on timers, with automatic fill valves to maintain water levels and ionizers to keep organics from building up. The gravel covering the reservoir keeps debris out so pumps don't clog and reservoirs don't require annual cleanouts.
- They are versatile and adaptable to any site. Reservoirs can be dug to any size, shape or depth, and modular water matrix blocks keep reservoir volumes modest and less costly to excavate. Underground storage also means less water lost to evaporation, a major concern in areas afflicted by drought.
- There's no open water to fall into, trap debris or grow organics, so Pond-free water features are ideal for businesses, parks, schools, even front yards. Water storage, pumps and plumbing are all underground, hidden, secure and easily accessible for maintenance.
- They offer more impact in less space. Waterfalls and streams can be built right over the reservoir itself, and viewers can walk right up to or even into them, increasing intimacy and impact.

THE ATLANTIC POND-FREE SYSTEM

Atlantic's Pond-free System makes below-ground reservoir construction simpler, easier and more reliable with the sturdiest components in the industry. Below ground, massively strong Pump Vaults, Pump Vault Extensions and Eco-Blox create underground reservoirs that are stronger and safer than ever before. Above ground, Atlantic FastFalls lead the industry with unrivaled weight capacities and fast, leak-proof liner attachment. Innovative design and unmatched quality make Atlantic's family of Pond-free products the best ever built.

- Atlantic's modular Eco-Blox are the strongest water matrix blocks in the industry. They can be used in stacked assemblies for deeper reservoirs or used in a single layer for smaller water features
- FastFalls offer built-in support cones, baffles, and a molded top edge to ensure superior strength and versatility in installation options. With their "inside the liner" design, they are virtually leak proof
- Pump Vaults and Pump Vault Extensions have a ribbed design to eliminate warping and crushing. They also offer flat panels and multiple cutouts to accommodate multiple plumbing options and accessories
- Multiple Pond-free Kits with pre-matched components take the guesswork out of specifying water features

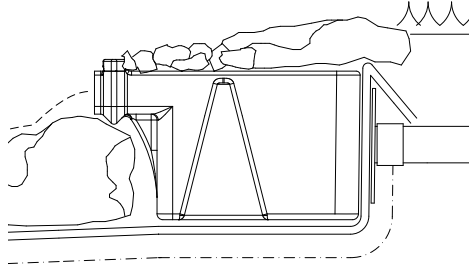


- 1 Molded internal cones and baffles provide FastFalls the strength to support massive stones while diffusing the water evenly across the spillway.
- 2 "Inside-the-liner" design, molded inserts and bolt-on liner retention flange ensure a watertight liner attachment every time.
- 3 FastFalls' reinforced spillway lip retains rock, gravel, soil or mulch to help blend seamlessly with the surrounding landscape.
- 4 Heavy-duty, one-piece Pump Vaults and Extensions handle large flow rates, provide multiple installation options and will not bow, bend or break, even under the most extreme conditions.
- 5 Pump Vault Extensions add the height of one Eco-Blox for larger, deeper basins and carry the same strength and durability as Atlantic Pump Vaults.
- 6 Modular, load-bearing Eco-Blox are 96% void space, holding 31.5 gallons each, allowing large volumes of water to be stored easily and economically.
- 7 Unlike flimsy peg-style connections, Eco-Blox secure slide locks create solid modules that can support 7.5 tons and are HS-20 compliant for commercial applications.
- 8 Modules can be locked together to form towers of any height, simplifying installation from above into deep reservoirs.

THE FASTFALLS

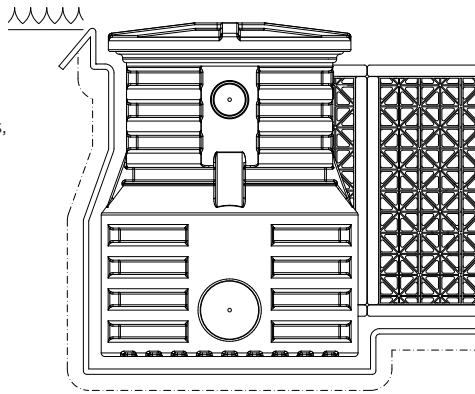
The FastFalls is a great way to simplify waterfall installation. Both the liner and the plumbing from the pump attach securely to the back of the FastFalls, so you'll never have to worry about leakage due to settling or shifting. Multiple internal baffles ensure smooth, even water flow, eliminating the dreaded 'hose-under-a-rock' effect while providing the FastFalls with incredible strength.

Although the FastFalls can support the heaviest rock and stone, it was also designed to retain soil, gravel and mulch perfectly. For the most natural looking camouflage possible, plant ground covers or low growing perennials directly into the pockets on top of the FastFalls to blend the FastFalls seamlessly with the surrounding landscape.



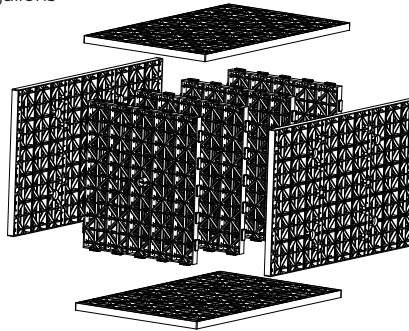
THE PUMP VAULT

The Pump Vault provides a strong, secure location for the pumps and accessories used in Pond-free systems. Pump Vaults and Extensions come equipped with numerous cutouts and flat panels for a variety of intake and return plumbing sizes and options. Generously sized, Vaults feature large top openings for easy access to Auto Fill Valves, Ionizers, multiple pumps and check valves. Raised rims add support and keep gravel out, while strong lids support heavy stones for easy concealment.

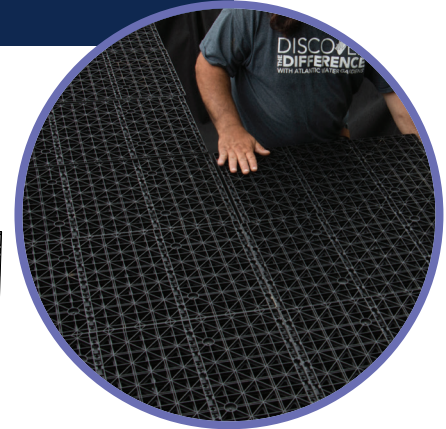


THE ECO-BLOX

Eco-Blox are the structural skeleton that supports the reservoir and stones above it with a distributed crush strength of over 7.5 tons, but their real advantage lies in their versatility. Easily transportable flat panels assemble in seconds to form rigid 27" x 16" x 17.5" blocks with room for 4.2 cubic feet or 31.5 gallons of water. Unlike tanks, modular Eco-Blox easily accommodate irregular, complex spaces and create reservoirs of any size or depth.

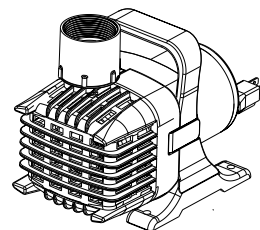


Eco-Blox have been tested and approved for compliance with the American Association of State Highway and Traffic Officials standard AASHTO HS-20 with a minimum safety factor of 200% for every condition and depth calculated. Properly installed they can support vehicular traffic. Best practices and independent test results available on request.

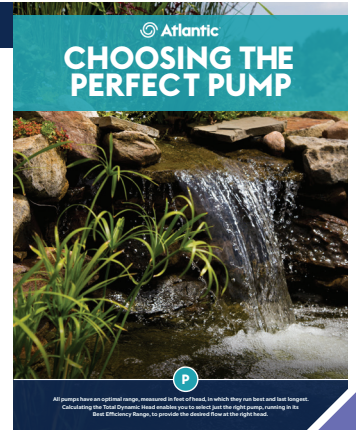


PUMPS

The pump is the heart of the Pond-free system, and must be long lasting, efficient and dependable. TT-Series asynchronous pumps carry a three-year warranty, deliver more water for less watts to medium head features under 15' and are fully rebuildable for long service life. For higher head features, long plumbing runs or wherever higher pressures are required, stainless steel PAF- and A-Series pumps are optimal. For very low head heights, L-Series axial pumps propel huge flows at very low head heights extremely efficiently. With the best line of continuous duty submersible pumps, Atlantic has what you need for your project.

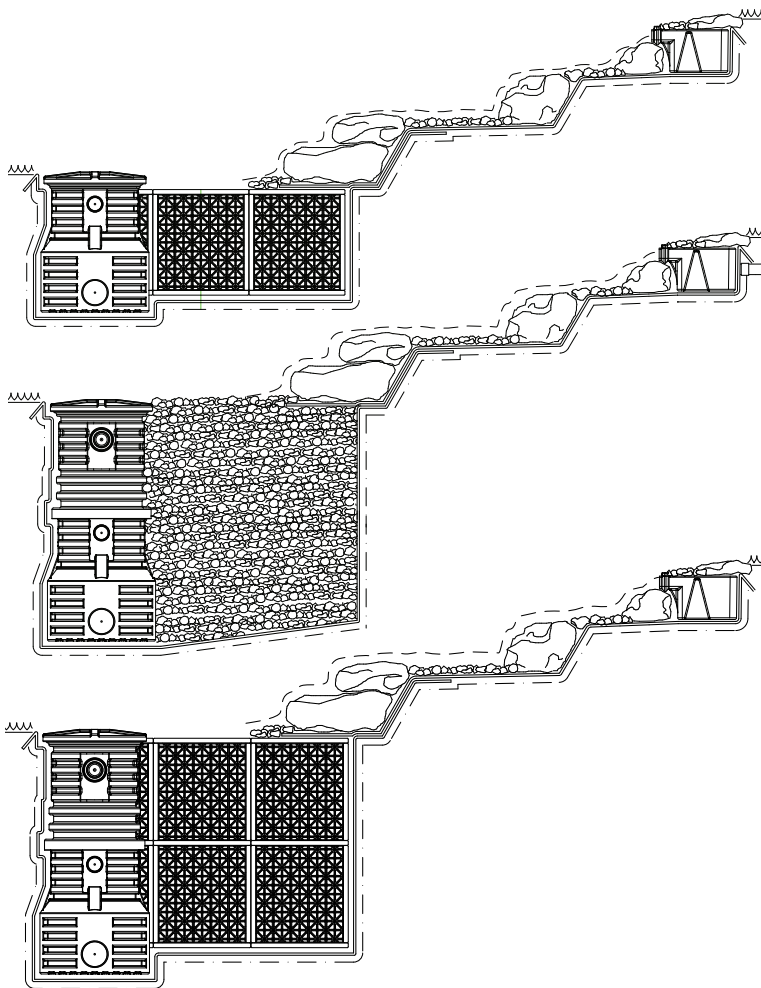


All pumps have an optimal range in which they run best and last the longest. Ensure you are choosing the right pump for your project by using our Choosing the Perfect Pump Bifold to calculate Total Dynamic Head, available on our website, www.atlanticwatergardens.com.



All pumps have an optimal range, measured in head or feet, in which they run best and last longest. Calculating the Total Dynamic Head enables you to select just the right pump, running in its Best Efficiency Range, to provide the desired flow at the right head.

CALCULATING BASIN VOLUME



ECO-BLOX RESERVOIRS

Upon start-up, the pump draws water from the reservoir to fill the streambed, from top to bottom, until the water overflows back into the reservoir to complete the cycle. We call the amount of water needed to complete this cycle the 'transitional' water volume. If the reservoir is too small, or the streambed built improperly, the water level in the reservoir can drop below the top of the pump before cycling, leading to pump overheating and damage. We can calculate the transitional water volume, then design the reservoir to hold at least three times as much, so the water level in the reservoir never drops by more than one-third when the pump is turned on, keeping the pump safely submerged at all times.

Assuming that it will take about 3" or 0.25 ft. of water to fill the stream and get the system recirculating, we can calculate the transitional volume, minimum reservoir volume and Eco-Blox quantity by using the formulas below:

$$\text{Avg. Depth}(.25\text{ft}) \times \text{Avg. Length}(_\text{ft}) \times \text{Avg. Width}(_\text{ft}) = \text{Transitional Volume}$$

$$\text{Transitional Volume} \times 3 = \text{Minimum Reservoir Volume}$$

$$\text{Minimum Reservoir Volume} \div 4.2 = \text{Number of Eco-Blox to fill Reservoir}$$

WATER DEPTH CONVERSIONS

1" deep = 0.08'	3" deep = 0.25'	5" deep = 0.42'
2" deep = 0.16'	4" deep = 0.33'	6" deep = 0.50'

GRAVEL-FILLED RESERVOIRS

Because Eco-Blox are 96% void space, they allow the reservoir to be dug to just the size required for the water volume needed. Backfilling with gravel fills 65% of the reservoir with stone, leaving only the 35% that remains between the stones available for water storage. This means that a gravel-filled basin will need to be three times larger than an Eco-Blox basin to hold the same volume of water. That's a lot more time, excavation, additional soil removed, additional gravel to fill the hole, labor costs and cleanup.

$$\text{Transitional Volume} \times 9 = \text{Minimum Reservoir Volume (when filled with gravel)}$$

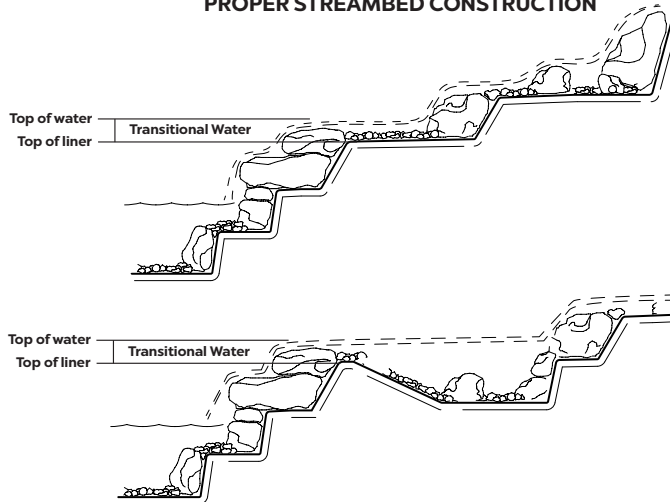
FOR LARGER BASIN VOLUMES

For installations where a larger basin volume or a deeper basin is required, Atlantic offers Pump Vault Extensions for both the PV1800 and PV2300. Each additional layer of Eco-Blox increases the depth of your excavation by 17.5"; use one Extension for each additional layer.

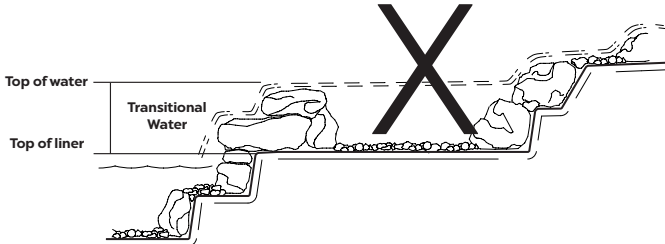
STREAMBED CONSTRUCTION

The less transitional water there is, the smaller the reservoir can safely be, which will lower construction costs. Proper streambed construction techniques can reduce the depth of transitional water needed to fill the streambed. Since transitional volume is determined by how high the rock extends above the liner at the spillways, minimizing that height reduces the amount of water necessary to fill the streambed. The drawings to the right display two examples of proper construction techniques for minimal transitional water.

PROPER STREAMBED CONSTRUCTION



IMPROPER STREAMBED CONSTRUCTION



ROCK & GRAVEL CALCULATIONS

QUANTITY OF BOULDERS AND GRAVEL FOR A STREAM:

Tons of Boulders = 1.5 tons for every 10' of stream
 Tons of Gravel = Tons of Boulders ÷ 4

RATIO OF SIZES OF BOULDERS:

For every 1 ton of 6" - 12" boulders, get 2 tons of 12" - 18" boulders and 1 ton of 18" - 24" boulders

