



WHITEWATER®

EST. 1980

Waves, Rivers,
and Surf





WHITEWATER

EST. 1980



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Introduction

Leading the Industry

When we first started building waves, we could have never imagined that over 30 years later, we would have installed over 400 wave pools, wave rivers, and surf simulators in almost every corner of the globe for water parks of every shape and size.



Dual Wave Pool
Ramayana Water Park
Bang Sare, Thailand



Extreme River
Vivaldi Ocean World
Gangwon, China

Diversity of Choice

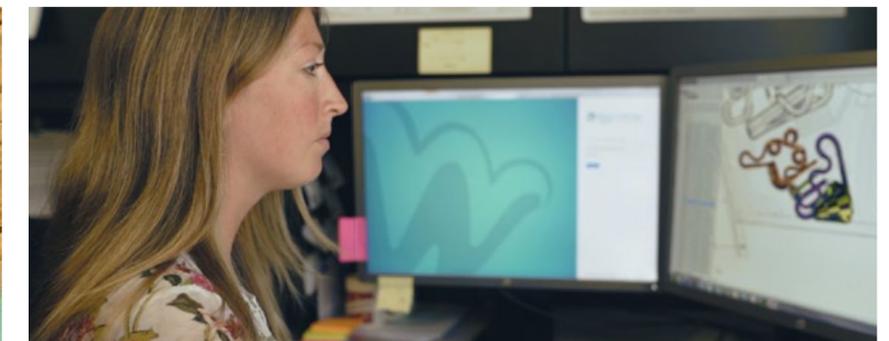
As the largest water park manufacturer, we are able to offer complete water park solutions, from iconic water slides and interactive water play structures to wave pools and surf simulators that are engineered with reliability and safety in mind. Our comprehensive line of waves, rivers, and surf machines ensures that we have options to suit every price point, capacity requirement, footprint, and demographic.



FlowRider Double
WaterVille
Alabama, USA



Lazy River
Yas Waterworld
Abu Dhabi, UAE



Custom Designs

Our experienced team of designers understand how to maximize both guest experience and operational efficiency. Smooth operations, mechanical placement, life guarding, sound mitigation, and sight lines are all important factors that are considered when we design a wave, river, or surf installation.

Waves, Rivers, and Surf 101

While water parks may come in many different shapes and sizes in every corner of the planet, they all share the same attractions fundamentals. A mix of slide-types to appeal to adventure-seeking individuals and groups, interactive water play areas and structures for younger visitors and their families, and lastly waves, rivers, and surf to give all visitors queue-line free access to a range of thrills or relaxation.

These types of attractions help define a park's layout, create food and beverage opportunities, and round out a comprehensive ride mix. Whether you need an always in-demand Wave Pool that appeals to all guests or would like to add a skill-based surfing machine to your park, we have the right solution for your needs.



Anchoring Your Park

Every park has them, those higher capacity attractions that create focal points within your park, around which crowds are drawn. Placed at intervals around a park, anchor attractions help drive circulation as people move from one to the next, stopping at other rides along the way.

Considered traditional anchor attractions, Wave Pools and Rivers are the heart of every water park. Wave Pools for their ability to create a central hub where families congregate and relax and Rivers for their range of experiences and ability to move people around a park.

A new type of anchor attraction, FlowRider's® revolutionary stationary wave technology caters to a unique demographic made up of younger thrill-seekers that are keen to master the art of surfing. Guests will spend the day watching other guests flowboarding before trying their hand at the sport.



Rethinking Capacity

Active Capacity

Active Capacity refers to the number of people that can be on an attraction at any point of time. Wave Pools and Rivers have very high active capacity as they can accommodate a much larger number of people simultaneously, without lines, than slides.

Passive Capacity

Passive Capacity refers to the ability of a ride to entertain guests who are not in the ride itself—this can include friends and family who are watching, or guests who are having a drink or meal while catching a glimpse of the fun. Rides with a high passive capacity generate revenue with food and beverage sales and function as a meeting area or “base camp” for guests.



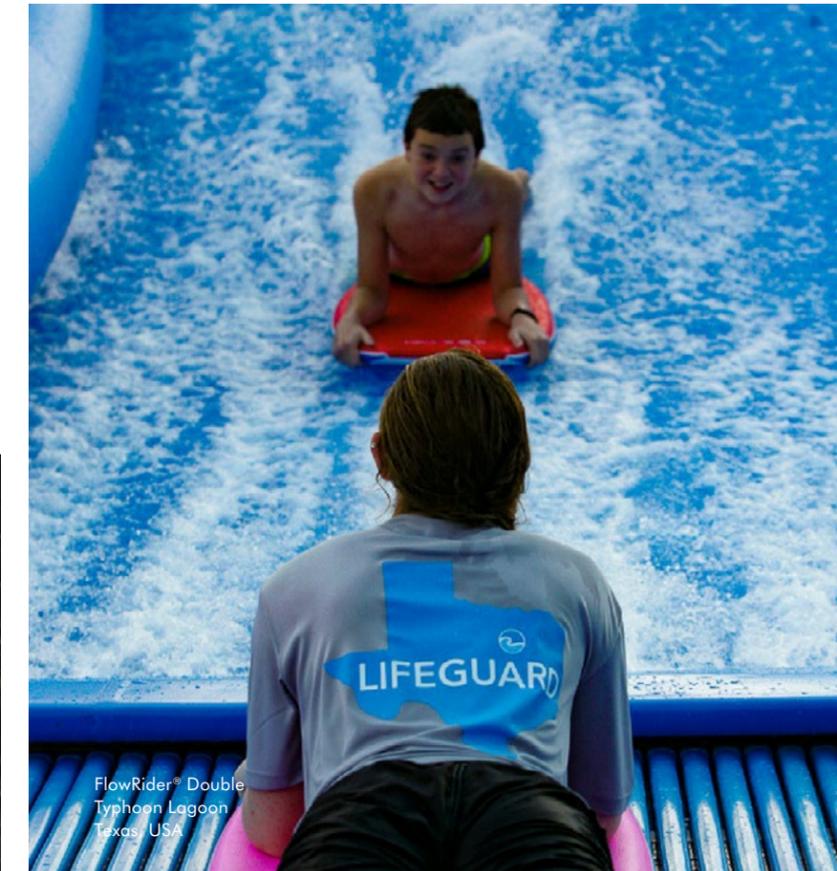
A Water Park Favourite

Wave Pools and Rivers continue to be one of the most popular features of any water park. In a report published by IAAPA in 2015, they found that the top attractions at water parks overall are Wave Pools. Regionally, Wave Pools are the number one attraction in North America, Europe, and the Middle East.

FlowRider's popularity continues to grow, especially as the Flow Tour creates events at parks, bringing in flowboarders from around the world, helping to create a community of flowboarding enthusiasts.



The largest wave pool in North America, the 152 meters (500 feet) wide Surf Wave Pool at Typhoon Lagoon is one of the most iconic wave pools in the world.



Safety First

Safety is our top priority, and we have various features and products that make our waves, rivers, and surf products as safe as possible:

- We have partnered with Life Floor, a foam-rubber flooring system specifically designed for use in wet areas with barefoot traffic. Added to wave pool and river entries, Life Floor helps to reduce slips and falls, and helps to absorb the impact when they do occur.
- Our surf products feature a patented, entirely inflatable ride surface with our patented Max Recovery System that minimizes impactful landings and lessens the probability of injuries happening. For in-depth information on safety features on our surf products, turn to page 19.
- Our Wave Pools feature wave-generating equipment that can be adjusted according to guest suitability. For instance, wave heights and frequency can be lowered for younger guests.

Waves, Rivers, and Surf Products

Wave Pools

A Wave Pool is an essential feature in any water park—guests of all ages and physical abilities are able to enjoy a cooling dip, a refreshing swim, or even just a relaxing sit-down in the shallows. Wave Pools offer the highest guest capacity in a park, without any queue lines. They act as central meeting places for families and are often anchors for food, rental cabanas, and retail opportunities. They also help draw guests into far corners of the park and encourage them to walk past other attractions. All these features place Wave Pools as a valuable focal area for water park design.

We offer four variations of wave pools:

- Family Wave Pools
- Surf Wave Pools
- Children's Wave Pools
- Dual Wave Pools



Dual Wave Pool
Xocomil Waterpark
Retalhuleu, Guatemala



Dual Wave Pool
Chimelong Water Park
Guangzhou, China



Family Wave Pool
Wet'n Wild Las Vegas
Nevada, USA

Children's Wave Pools

Children's Wave Pools offer safe, playful waves that entertain the youngest of swimmers. They have a shallow water depth and zero-entry beach areas for kids to wade in. The waves are up to 0.9 meters (3 feet) in height, and similar to Family Wave Pools, use the same reliable, efficient, and versatile blowing air technology to generate a variety of wave patterns that keep kids of all ages splashing all day long. These pools can be integrated into a complete play lagoon with AquaPlay products, which are water activity elements that can be configured to create a dynamic splash pad or combined with an AquaPlay, a multi-level play structure.

Children's Wave Pools are also the perfect setting for Life Floor, an award-winning aquatics flooring that helps prevent slips and falls and keeps surfaces cool. Hence, toddlers and children can play safely while parents can have peace of mind.

Wave Type	Pneumatic
Wave Heights	Variable to 0.9 m (3 ft)
Wave Patterns	Double & Double Diamond, Parallel & Half Parallel, V & Inverted V, Left & Right Diagonals
Pool Size	Typically 46 m ² (500 ft ²) to 185 m ² (2000 ft ²)
Wave Frequency (adjustable)	Typically 2 seconds



Family Wave Pool
Aquatopia Indoor Waterpark
Pennsylvania, USA

Family Wave Pools

Family Wave Pools feature waves that are gentle and relaxing, making them suitable for guests of all ages. They allow the whole family to enjoy the water together, even young children. Children's pools can be added to the main pool, creating a separate section that young kids can play in.

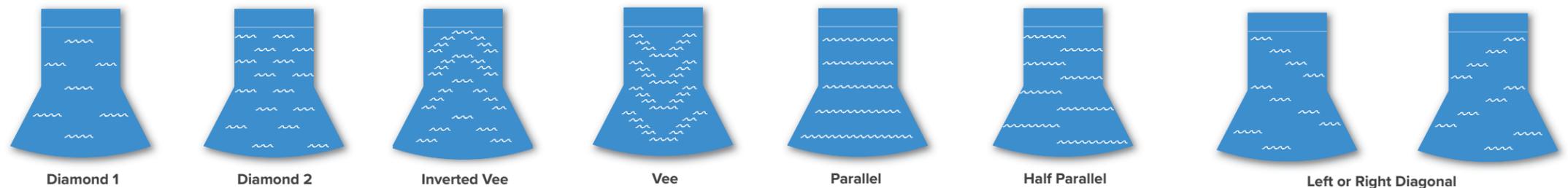
Cabanas can be placed in the space around the pools, generating rental income. Food and beverage stands and kiosks can be strategically added around the pool as they help to not only increase guest satisfaction, but also guest spending.

Family Wave Pools are the easiest wave pools to build—they're simple, cost-effective, and low maintenance. The pneumatic waves in these pools are created by wave fans blowing air into chambers at the deep end of the pool. These chambers have underwater openings, so when the air is blown into them, the water level in the chamber is pushed down to create a surge in the pool outside the chamber.

By having a series of chambers across the back of the pool and alternating air flow into the different chambers, various wave patterns can be made. This pneumatic technology requires minimal maintenance, is easy to install, and offers variable heights, wave patterns, and wave frequency.

Wave Type	Pneumatic
Wave Heights	Variable to 1.5 m (5 ft)
Wave Patterns	Double & Double Diamond, Parallel & Half Parallel, V & Inverted V, Left & Right Diagonals
Pool Size	Typically 185 m ² (2,000 ft ²) to 4,650 m ² (50,000 ft ²)
Wave Frequency (adjustable)	Typically 2.75 seconds

Wave Patterns





Surf Wave Pool
Sunway Lagoon
Selangor, Malaysia

Surf Wave Pools

Surf Wave Pools feature bigger, more exciting waves that are ideal for surfing and boogie boarding. However, they are also lots of fun for guests who are more inclined to appreciate thrills. Surf Wave Pools create surges generated by the hydraulic equipment, and huge swells that carry people, boards, and tubes towards the beach. They are also a spectacle to watch, thus offering both active and passive capacity.

Our Surf Wave Pools have waves that are created with a hydraulic system which uses large pumps to fill enormous holding tanks above the deep end of the pool. When the gates in the bottom of the tanks are opened, this massive volume of water is released to create a surge wave that is up to 3 meters (10 feet) in height.

Surf Wave Pools are available as a combination system to include pneumatic wave equipment for flexibility in operations. The hydraulic wave equipment is made up of multiple pumps and can be operated using them all, or only a few to reduce operating costs on a slower day, but still creating epic waves.

Wave Type	Hydraulic with pneumatic option
Wave Heights	Up to 3 m (10 ft)
Wave Patterns	Parallel, V & Inverted V, Left & Right Diagonals
Pool Size	Typically 4,700 m ² (50,000 ft ²) to 13,000 m ² (140,000 ft ²)
Wave Frequency (adjustable)	Typically 20-90 seconds (hydraulic water- dump mode) Typically 3 seconds (pneumatic mode)

Dual Wave Pools

We are able to combine a Family Wave Pool and a Surf Wave Pool to create a Dual Wave Pool, which enables parks to have the flexibility to create two very distinct experiences side-by-side. One side of the pool provides the calm enjoyment of Family Waves, while the other offers the exhilaration of larger waves.



Dual Wave Pool
Chimelong Water Park
Guangzhou, China

Chimelong, the most-visited water parks in the world, has a dual wave pool: Family Wave Pool on one side and Surf Wave Pool on the other.



Extreme River
Vivaldi Park Ocean World
Gangwon-do, Korea

Rivers

Rivers are a fun way for guests to not only enjoy the scenery as they move around your park, but also be entertained by the motion of the waves, for which there are options. Rivers are high capacity and suitable for guests of all ages and can be themed as well. Unlike traditional Lazy Rivers, our Wave Rivers and Extreme Rivers feature wave-generating equipment which creates big or small waves that can increase the thrill factor while moving people more quickly.

Like Wave Pools, Rivers are simple, cost-effective, and low maintenance. They also feature different wave modes for operators to choose from depending on suitability.

We offer two main types:

- Extreme Rivers
- Wave and Lazy Rivers

Extreme Rivers

Extreme Rivers are high thrill rivers that feature waves of up to 0.9 m (3 ft) in height, propelling guests forward in addition to giving them an exciting “bump” every 15-20 seconds. They are very popular amongst kids and teenagers while being calm enough for parents and younger children alike.

The Extreme River wave generator uses large pumps that fill a holding tank. Gates control the water flow down a ramp into the river, generating surges of water that add momentum to the water and create waves in the river. Parks can also build restaurants overlooking extreme rivers, giving diners a fun view to look at while having a bite.

Wave Type	Hydraulic
Wave Heights	Typically to 0.9 m (3 ft)
Frequency	Typically 15-20 seconds





Lazy River
Waterbom Bali
Bali, Indonesia

Wave & Lazy Rivers

Wave Rivers are similar to Lazy Rivers, except they add some excitement by including gentle waves of up to 0.6m (2 feet) high. They are calm and relaxing for guests of all ages, and are easy to install.

Wave Rivers can also double as a form of transportation to move guests from one area of the park to another while enjoying the scenery, passing by iconic rides and floating through food and beverage locations. They also function to separate various areas in the park.

Wave Type	Pneumatic
Wave Heights	Variable to 0.6 m (2 ft)
Frequency	Typically 2.5 seconds



Lazy River
The Cove Waterpark
California, USA



Lazy River
Typhoon Texas
Texas, USA





FlowRider® Double
Waterbom Bali
Bali, Indonesia

Surf

Our FlowRider® is the most popular surf machine in the world, featuring a patented, cutting edge design that offers riders of all ages the thrill of surfing regardless of proximity to an ocean. Designed and engineered in Southern California, the FlowRider provides the exciting rush of surfing without the intense ocean experience and gives all riders a chance to have fun and experience on a bodyboard.

Advanced riders can experience dropping in, carving turns, throwing spray, and performing an unending array of maneuvers while beginners can keep coming back to learn and improve on their skills.

FlowRider has a small, compact footprint, allowing parks of all sizes to offer surfing to their guests. Additionally, they create popular passive capacity spots where spectators can grab a drink and a bite to eat while watching people enjoy the simulated waves. Surf attractions are unique spectator generators and often stimulate traffic to closely associated food and retail hubs.

Our FlowRider machines are equipped with pumps that are designed to be put in place and then left alone with only minimal maintenance, and as a result, we have many rides that have been in service for decades, such as the original ride at Schlitterbahn Waterpark in Texas that is still using their original pumps over 25 years later.

We offer a range of FlowRider® surfing experiences:

- FlowRider® Double and FlowRider® Triple
- WaveOz™
- LatiTube™

Safety

As with all WhiteWater products, FlowRider is safer by design. We're confident that FlowRider is the safest surf simulator on the market because we incorporate:

- **Nozzle Flaps:** With recent improvements to the design and manufacturing process, our nozzle flaps are more durable and more pleasing to the eye. They are operated by a patented system that immediately closes when the ride turns off. If the ride is shut down while someone is riding, the rider simply glides up over the top, leaving no chance for them to come into contact with the nozzle head.
- **Multiple-Guest Ride Divider:** The patented FlowRider Flow Fence™ divider is a soft air-cushioned "fence" that allows you to safely employ two or more riders at a time on the FlowRider Double, FlowRider Triple, and WaveOz™. If a guest runs into the floating divider while riding, it simply absorbs the motion and gently moves out of the way, allowing riders to ease back into the main riding area. This new technology is easy to install, extremely safe, and is preferred by riders globally.
- **Max Recovery System:** This proprietary design allows for soft, durable landings. All competing surf machines use a hollow-tube vinyl mat that is installed over hard fiberglass grating. If the mat fails, it is very difficult to repair, and in many cases, it needs to be replaced entirely. If a Max Recovery System bar fails, it can be easily replaced with minimal downtime. FlowRider is the only ride of its kind to employ this technology.
- **Patented Ride Surface:** Our patented ride surface technology is our inflatable structure with tensioned fabric. We conducted G-Force testing with an accelerometer attached on our surface and found a fall from 1.8 meters (6 feet) high is equivalent to just 0.3 meters (1 foot) on competitor products. This patented ride surface is similar to a trampoline, ensuring that guests are safe even when they fall.



FlowRider® Double & FlowRider® Triple

We offer FlowRiders in various sizes depending on customers' needs and venue size. They can function as a central hub for entertainment, and can be strategically placed near food, beverage, and retail locations to boost revenue. They also create sponsorship and retail opportunities through competitions and events.



FlowRider® Double
H2OBX Waterpark
North Carolina, USA

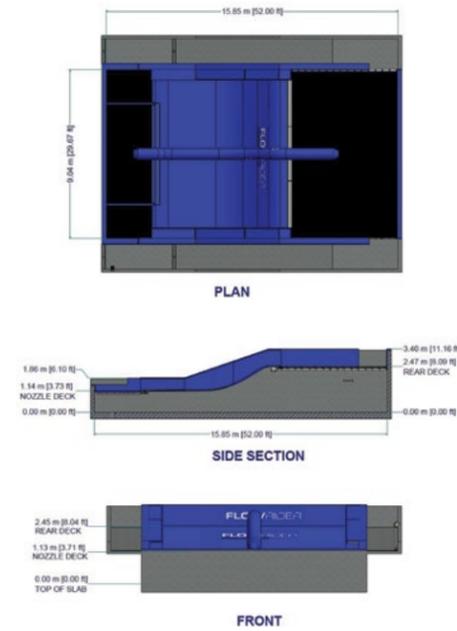


FlowRider® Double
Waterboom Bali
Bali, Indonesia

FlowRider® Double

The FlowRider Double's highly sought after connection to board sports engages the teen market, their friends, and families. Its size allows two riders at once with a divider in place and has a capacity of between 240 and 480 rides per hour.

Foot Print	161 m ² (1,728 ft ²)
Capacity	240-480 Rides/Hour
Weight	238,700 kg (530,500 lbs)
Tank Volume	160,000 L (42,200 Gal)
Tank Depth	1.1 m (3.5 ft)
Power Requirements	360 AMPS (180 kW/hr)

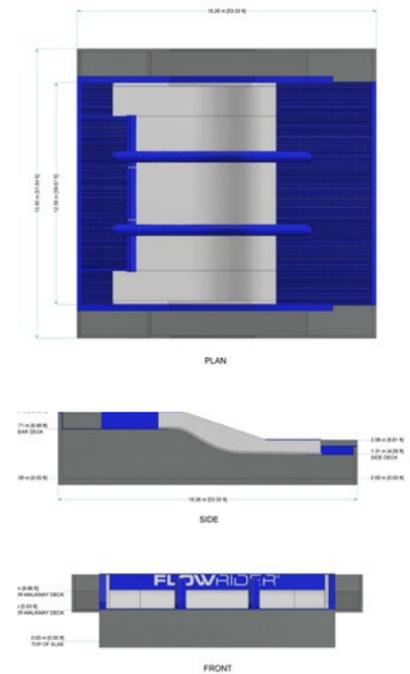


FlowRider® Triple
Tidal Cove
Florida, USA

FlowRider® Triple

The FlowRider Triple can remain wide open or be split into 3 lanes with a couple of inflatable dividers across 40 feet. While the FlowRider Double can potentially double ticket sales, the FlowRider Triple can triple it. With dividers in place, three riders can enjoy the ride at the same time, making a capacity of 360 to 720 rides per hour.

Foot Print	195.2 m ² (2,226 ft ²)
Capacity	360-720 Rides/Hour
Weight	232,700 kg (513,000 lbs)
Tank Volume	212,500 L (56,000 Gal)
Tank Depth	1.72 m (5.63 ft)
Power Requirements	570 AMPS (270 kW/hr)



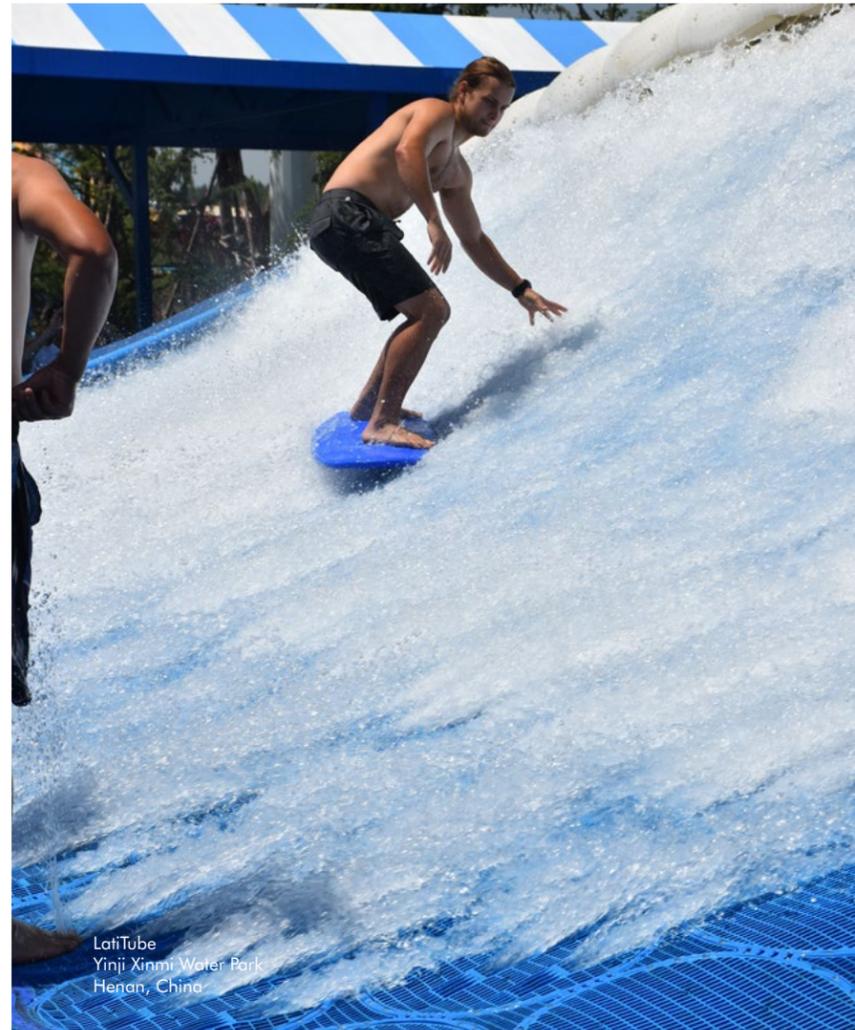
FlowRider® Double
Waterbom Bali,
Bali, Indonesia

Waterbom Bali, Trip Advisor's top water park in Asia, features a legendary FlowRider situated amongst beautiful water slides and next to a restaurant, the perfect setting for grabbing a snack and taking in the views.



WaveOz
Thermas dos Laranjais
Olímpia, Brazil

Thermas dos Laranjais recently added WaveOz 180, giving them a unique point of differentiation by providing a distinctive surfing experience and thousands of views on YouTube as a great way to publicize their park.



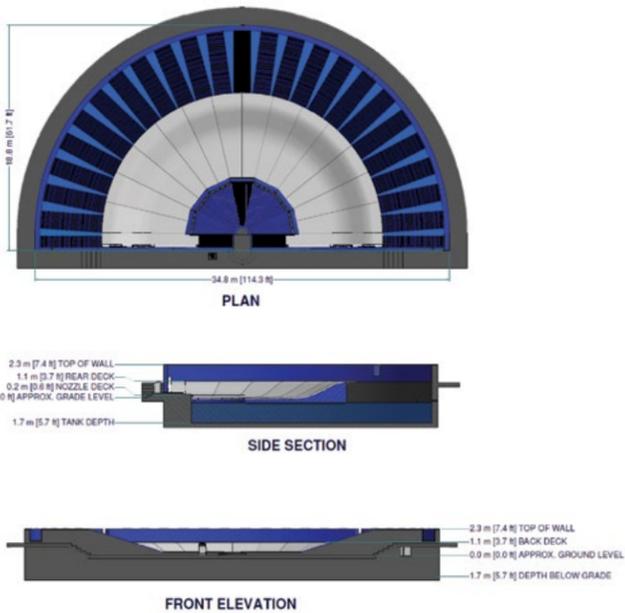
LatiTube
Yinji Xinmi Water Park
Henan, China

LatiTube™

The LatiTube is a surfing attraction that the whole family can master, with great 'getting tubed' photo opportunities built in. This new technology includes a radically new way for operators to precisely control water flow so that every guest can be appropriately challenged while experiencing the thrill of surfing. This means that almost every rider can achieve the satisfaction of "stand up surfing" and a great photo opportunity from their very first ride.

On the LatiTube, riders surf on nozzles instead of a sheet of water, and these nozzles can be controlled precisely with a remote control by the attendant to customize the ride experience for each guest. Guests can experience the thrill of surfing on a safe, flexible surface while having a visually spectacular tube of water enveloping them.

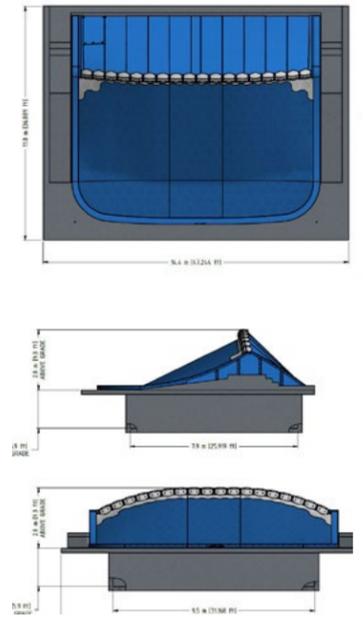
The LatiTube comes in four different models: Pocket Single, Pocket Double, Pocket Switch, and Custom Double Switch.



WaveOz™ 180°

The WaveOz uses the same sheet wave technology as the FlowRider family of products, and riders use the same types of boards to either bodyboard or stand-up ride. The main difference is the huge and entirely inflatable ride surface. It is the biggest product that we have, giving riders 57 meters (187 feet), of space wall to wall along the top of the ride surface to show off their skills and push the limits of bodyboarding and flowboarding.

This ride offers a whole new playing field to the sport of flowboarding. The sheer linear space on this attraction allows for more speed, more back to back tricks, and an overall enjoyable ride experience. The ride surface can also be divided into multiple sections, offering the industry's highest capacity of up to 720 rides per hour.



Engineered for Fun

WhiteWater has designed and built some of the largest and most famous wave pools in the world, including at Sunway Lagoon in Malaysia, Disney's Typhoon Lagoon in Florida, and Chimelong Water Park in China. Our wave generating equipment is engineered for durability, safety, and years of non-stop service. We continue to refine and redefine the best generated waves in the world, with the largest in-house team of engineering experts who can customize any size and scale project to the highest standards of safety, reliability, and efficiency in the industry.

Our goal is to understand your venue, operations, and vision, and help you achieve your goals—not just to make another sale. We stand by our clients for the long haul, placing the utmost importance on safety, longevity, durability, and appeal in all our wave products, from Wave Pools to surf machines.



FlowRider® Double
Surf House Phuket
Patong Beach, Thailand



WHITEWATER®

EST. 1980

WhiteWater was born in 1980 with one clear purpose, to create places where families unite and make joyful lasting memories.

We achieve this by standing alongside our customers from concept to completion of award-winning attractions, from slides to water rides and everything in between. We aim to inspire our clients by unleashing our creativity to realize their ambitions; we craft solutions which make each park unique. We are dedicated to making products that operators can count on, because we understand the importance of reliability and efficiency on the bottom line.

As market leaders, we put our success down to our attitude, in all our years we've never once forgotten why we're here – to help parks solve problems, create immersive experiences, and delight guests all over the world.

We're here to create places where fun can thrive.

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