



## Considerations for Water Slide Operations

Water slides, play structures and spray features are the trend in newer aquatic centers and the aquatic industry in general. These features may present new challenges to experienced aquatic facility operators such as YMCAs, JCCs and others. Design, safety and operational guidelines come from the amusement industry and organizations like ASTM International (formerly the American Society for Testing Materials). Manufacturers and also some states have produced operational safety guidelines and/or requirements.

Some credentialing bodies that specialize in water park safety exist but the larger lifeguarding industry is just beginning to address the need for lifeguards with specialized water park type training. Two of the largest certifying bodies, YMCA of the USA and the American Red Cross, now have water park lifeguard credentials but trained guards may be difficult to find at this time.

### Water Slide Classification:

Water slides are generally classified by their physical and intended use characteristics. The following are definitions of the types of water slides:

- *Body slides*—water slide used without a vehicle
- *Children's slides*—Water slides generally intended only for use by persons under the height of 48 in. Water slide has a maximum fall distance of 3 in. from slide exit where the rider enters the water and water depth is no greater than 24 in
- *Mat slides*—water slide used with a designated mat as a vehicle
- *Serpentine slide*—curved path as viewed in geometric slide path
- *Specialty slides*—proprietary water slide design, such as an uphill, half-pipe, or bowl ride, which does not conform to standard classification
- *Specialty vehicle slides*—water slide used with a proprietary vehicle specified by the manufacturer
- *Speed slide*—water slide where the rider(s) achieve a velocity of 25 ft/s or more during the course of the ride
- *Tube slides*—water slide used with single or multi-person water slide tube

## Common questions asked about water slides:

1. What drives the height line requirement for children to use waterslides? Typically the manufacturer specifies the height requirements, if any, for the individual slides. This is typically based on the patron use, the water depth and speed of the ride. Management should pay special attention to young children who do not meet the height requirements for the slides. Lifeguards tend to be focused on managing their slide and not notice small children wandering around deep catch pools.

### Examples:

- The water depth in the landing pool for water slides with a maximum drop of 3 inches, for persons under 48 inches tall, should be no greater than 24 inches
  - The water depth in the landing for water slides for persons over 48 inches tall should have a minimum pool depth of 3 feet
2. What determines the depth of water in the landing pool under a waterslide? The height of the slide and the speed at the discharge are the determining factors for patrons 48 inches and taller. Slides that have a drop greater than 6 inches and do not have a safe deceleration zone (to zero velocity at the point of discharge) should follow the recommendations for a one-meter diving board unless otherwise specified by the manufacturer.

### Examples:

- The depth of the landing pool, for patrons 48 inches and taller, under a bowl ride or drop slide with a drop of 24 inches at the discharge point would be similar to that of a one-meter diving board which is 11.5Ft. unless otherwise specified by the manufacturer.
- The depth of the landing pool at the discharge point, for patrons 48 inches and taller, for low grade (10% grade) serpentine slide that has a deceleration zone to zero velocity at discharge and a drop of 6 inches, would be a minimum of 3ft to 4ft.

There are currently ASTM standards, such as ASTM F 2376 for waterslides, which aid in guiding manufacturers to end user on the recommended practices.

## **Recommendations for the Safe Operation of Water Slides:**

- Each owner/ operator must have a copy of the Manufacturer's Operating Instructions for each slide operated
- Each owner/operator should have written operating procedures for the individual water slide, which are an integral part of their staff-training programs
- Specific water slide operational policies and procedures with pertinent information from the manufacturer (including dispatch procedures) should be implemented
- Dispatch procedures should be established for each water slide
- Each patron should be informed of the proper rider position
- There should be established dispatch time intervals for each water slide
- There should be an established communication system between the slide attendant and lifeguard positioned at the landing pool or run-out section
- The number of patrons in the dispatch pool should be limited (according to manufacturer specifications when available)
- Established dispatch procedures shall be followed by slide attendants prior to dispatching each rider
- Verbal instructions concerning water slide rules that shall be announced to patrons prior to each ride cycle
- Pre-ride instructions may include, but not be limited to: the required position of hands and feet, rider conduct, exiting procedures, and other instructions deemed appropriate
- Signage for safety, warning, and instruction shall be posted and reflect any manufacturer recommendations
- Signage shall be prominently displayed at the slide entrance and/or other appropriate areas
- Instructional signage should include proper riding position, expected conduct, dispatch procedures, exiting procedures, and inform patrons to obey all staff instructions
- Warning signage should include slide characteristics (such as descriptions of speed or attraction rating) and water depth of landing zone
- Signage notifying that riders being free of medical conditions, including but not limited to pregnancy and heart, back, or musculo-skeletal problems, maximum/minimum height and weight, and any swimming or physical ability requirement, or both shall also be posted
- Each owner/operator should have an inspection and maintenance program that is based on the manufacturer's recommendations
- The inspection and maintenance program should include maintenance, testing, and inspections that provide for the duties and responsibilities necessary to care for the water slide, safety equipment, and the slide facilities
- Visual checks of safety signs, slide entry, flume, run out, landing pool, and structural components, water flow, landing pool water level, and run out water level should be conducted according to manufacturer's specifications and documented

## Considerations for Water Slide Safety and Lifeguarding:

- Water slides should have a gate to secure the slide from unauthorized use
- Lifeguards should hold appropriate credentials for the activity they supervise. American Red Cross (ARC) has a separate Water Park credential for lifeguards. The YMCA of the USA (YMCA) lifeguard credential has water park training included in the **new** lifeguard training program
- A comprehensive new guard orientation and regular in-service training should be provided to all lifeguards by an experienced aquatic professional using YMCA and ARC training materials provides
- A lifeguard should be assigned (dedicated) to each slide landing pool and run-out
- Additional lifeguards should be in the water at the bottom of slides (this is especially important when non-swimmers and poor swimmers are exiting the slide into water that is deeper than chest-deep for the patrons)
- All patrons should be deep water tested and banded before using drop slides, speed slides and slides with no deceleration zone to zero and where water depth may exceed the height of the patrons
- US Coast Guard approved Type 3 personal flotation devices (PFD) should be available to all patrons
- PFDs should be available in a variety of sizes and be fitted to each child by a responsible adult
- Signage should be posted that encourages the use of PFDs for all patrons who cannot swim or cannot stand in the deepest area of the play zones.
- A PFD should be used for all patrons who cannot swim but wish to use the slides (some manufacturer's operating instructions may warn that PFDs pose a safety risk for a particular water slide. If a manufacturer does not warn against the use of PFDs, the facility may test the use of PFDs on the particular slide with a variety of users. The test results are then sent to the manufacturer. PFDs may be used once the results are approved by the manufacturer.)
- A "Parental Supervision Policy" should be clearly posted at the entrance and published in promotional materials/Website. (example: all children under the age of 12 years must be actively supervised by an adult in the water park, at all times. Maximum of two children per adult with or without PFDs. Unsupervised children will be removed from the water park area.)

Aquatic centers (both indoor and outdoor) greatly reduce the risk of drowning and incidents when they enforce layers of protection. Layers of protection include: active parental supervision, use of PFDs, swim testing and banding, use of manufacturer's recommendations and adequate lifeguard supervision.

More information on aquatic safety is available in the [Online Resource Library](#).