I. INTRODUCTION

The AquaClimb is an exciting new recreational and fitness component that offers new programming opportunities to most aquatic facilities. Because the AquaClimb extends below the surface of the water, participants can easily swim up to the climbing wall and begin to traverse it without leaving the pool itself. Even those individuals without use of their legs can utilize the AquaClimb to exercise the upper body in a fun, challenging, and non-threatening way. Perhaps the most meritorious application of the AquaClimb is an alternative to a diving board in a swimming pool which no longer meets safe diving depth and distance requirements.

Climbers who fall from the AquaClimb will, in most cases, enter the water feet-first. To enter the water head-first from the climbing wall structure is almost a biomechanical impossibility because of the minimal number of foot-holds provided. Prior to purchasing and installing an AquaClimb, aquatic facilities should contact their local regulatory agency (e.g. Health Department) to determine whether regulations, recommendations or suggestions regarding the safe installation and use of the AquaClimb exist. **AQUATIC SAFETY RESEARCH GROUP, LLC**, an independent and objective water safety consultant firm, remains available to assist facilities in answering questions concerning the safe use of the AquaClimb.

II. STANDARD OPERATING PROCEDURES

A. LIFEGUARDS

Whenever the AquaClimb is in use, it is recommended that a properly trained and certified lifeguard be assigned exclusively to the AquaClimb. The lifeguard should be strategically placed to supervise and control use of the structure and to minimize climber misbehavior. Because the apparatus will be positioned in deep water, a lifeguard with deep water skills and qualifications is needed. This lifeguard must also be trained for the proper use and monitoring of the in-water climbing structure. The lifeguard should be positioned close to the wall with a full and unobstructed view of the climbing wall and drop zone, with the ability to see underwater in the drop zone. The lifeguard must stay focused on the climbing wall whenever in use and attention should not be diverted to other areas of the pool. Lifeguard orientations, in-service trainings and emergency action plans should include the AquaClimb and should be reviewed and practiced regularly but at least monthly. In many pools, the best vantage point for proper surveillance may be directly across the pool facing the wall. However, each facility should determine where to best position supervisory staff to ensure a full and unobstructed view of the climbing wall and the drop zone.

The aquatic facility should also establish an entrance and exit pattern (left to right and right to left) to avoid congestion of swimmers waiting to swim into the drop zone to begin their ascent on the wall. This pattern can be changed daily or hourly. For larger installations allowing two or more climbers, additional safety precautions must be implemented to minimize the risk of a climber falling onto someone swimming into or out of the drop zone. One such approach is to direct climbers, once they have fallen from the wall, to swim to the closest edge of the drop zone so as to avoid swimming underneath a second climber.

B. DEPTH REQUIREMENTS

While most competitive swim agencies, including the National Collegiate Athletic Association (NCAA), require a minimum water depth of five (5) feet to dive headfirst from starting platforms, the AquaClimb, which promotes only feet-first entries, takes a similar approach, requiring a minimum water depth of six (5) feet for installation of its shortest three-panel wall. As panels are added vertically to the structure, minimum water depth requirements increase. To ensure safety of climbers, AquaClimb has applied commonly accepted safe head-first diving depths to feet-first entries from the structure. For heights greater than four (4) panels, the minimum depth recommendations would parallel NCAA requirements for platform diving from the same height (4m, 5m, etc). We recognize that these depths are very conservative given that they are intended to minimize the risk of injury from head-first entries rather than from feet-first entries, but absent additional research we cannot safely recommend alternative water depths which deviate from these nationally-accepted standards.

MINIMUM DEPTH REQUIREMENTS FOR AQUACLIMB INSTALLATION			
Panel Height*	3 panels (lowered)	3 panels	4 panels
Minimum Water Depth	5 feet	7feet	10 feet

* Each panel measures approximately $3ft^2$ or $1m^2$

C. DECK CLEARANCES

Whenever possible, four feet of deck space should be maintained between the end of the support structure and the perimeter pool wall or fence. If less than four feet is available, a combination of pedestrian control stanchions and traffic cones should be used to direct patrons around the support system. To best accommodate persons with disabilities, a minimum of three feet (36”) clearance around the support structures should be maintained. Even with spacious decks, stanchions and cones always come highly recommended, as they minimize the risk of someone coming into contact with the structure. Customers are advised to check building and fire codes to determine whether support structures can permissibly block access to the pool deck, particularly in cases where the support structure would come within three feet of a wall.

D. NUMBER OF CLIMBERS

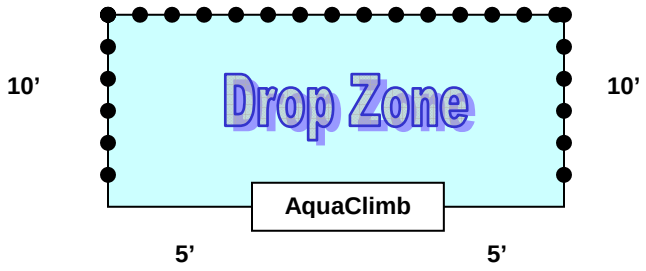
It is ***highly recommended*** that only one climber use the AquaClimb at a time. Depending on the size of the structure, however, there may be an opportunity to allow more than one climber on the wall at the same time. Multiple climbers should only be allowed when there is no possibility of one climber either interfering with or falling on top of another climber. Multiple climbers should be instructed to climb the wall vertically rather than to traverse the wall horizontally. Climbers should also maintain a distance of at least one panel from other climbers to minimize the risk of climber interference, horseplay and accidental concurrent falls.

E. VERIFIED SWIMMERS ONLY

Because the AquaClimb is installed in deep water (see minimum depth requirements above), this climbing attraction is to be used only by "swimmers" – persons with verified swimming ability. The attractive colors and the fun activity that the structure provides, are likely to draw younger, weaker swimmers to the climbing wall. These persons should be properly screened to ensure they possess the requisite deep-water skills necessary for using the structure. Following standard aquatic safety practices, anyone wishing to enter deep water to use the AquaClimb should be given a swim test. A recommended swim test would be to have the swimmer/climber jump into ***chest-deep*** water, surface, swim the equivalent length of the buffer zone and return to the starting point. Requiring climbers to tread water for 30 – 60 seconds comes highly recommended. Swim tests should be conducted in chest-deep water to maximize swimmer safety.

F. DROP ZONE

It is reasonably anticipated that climbers will fall from the wall into the water. It is therefore imperative to keep people from entering the "drop zone" where they would risk being struck by a falling climber. A buoyed rectangular rope, extending a minimum of five (5) feet away from the sides of the wall and a minimum of ten (10) feet from the front of the wall, should be placed in the water to separate the drop zone from the rest of the swimming area. (See diagram below.) No other swimmers should be allowed into the drop zone when a climber is on the wall.



G. FEET-FIRST ENTRIES ONLY

While head-first entries, including dives, are improbable to perform from the face of the climbing wall, and although the depth requirements for the various climbing wall configurations are extremely safe and tend to be conservative, climbers must be warned that all entries into the water from the AquaClimb should be feet-first. Climbers who intentionally violate this safety rule should be prohibited from using the AquaClimb.

H. UNDERWATER ACTIVITIES

Participants should not be allowed to play with the structure itself, particularly while submerged. While there are no hidden hazards or entrapment potentials inherent in the AquaClimb, it is intended for above-water use. It is not intended or designed for underwater use by climbers. Playing underwater around the structure makes it more difficult for the lifeguard to properly supervise the activity. This could lead to injury should a climber fall onto someone who was playing underwater in the drop zone.

III. SUGGESTIONS FOR SAFETY SIGNAGE

Perhaps the most appropriate place to place caution/warning signs would be on both sides of each of the clear safety panels (top & sides). The three most important warnings should include:

- "Swimmers Only"
- "No Head First Entries"
- "Only One Climber at a Time".

These three warnings can be placed together on the same sign in the appropriate colors (red/white, black/yellow, orange/black). The universal WARNING sign in an oval should be place at the top of the three rules. Additional signs/warnings may be mounted on the rear of the support structure.