# 2016 Annex to the Model Aquatic Health Code

*Scientific Rationale*

## GLOSSARY

OF ACRONYMS AND TERMS
USED IN THIS CODE

CS267224A

# 3.0 Glossary of Acronyms, Initialisms, and Terms Used in the MAHC Annex

## 3.1 Glossary of Acronyms and Initialisms Used in the MAHC Annex

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| ACCA | Air Conditioning Contractors of America |
| ADA | Americans with Disabilities Act |
| AAU | Amateur Athletic Union |
| AED | Automated External Defibrillator |
| AHJ | Authority Having Jurisdiction |
| AMCA | Air Movement and Control Association |
| ANSI | American National Standards Institute |
| ARC | American Red Cross |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| ASME | American Society of Mechanical Engineers |
| ASTM | American Society for Testing and Materials |
| ATSDR | Agency for Toxic Substances and Disease Registry |
| BCDMH | 1-bromo-3-chloro-5, 5-dimethylhydantoin |
| CDC | Centers for Disease Control and Prevention |
| CEU | Continuing Education Units |
| CFM | Cubic Feet Per Minute |
| CMAHC | Conference for the Model Aquatic Health Code |
| CPR | Cardiopulmonary Resuscitation |
| CPSC | Consumer Product Safety Commission |
| CSA | Canadian Standards Association |
| CYA | Cyanuric Acid |
| DBDMH | Dibromodimethylhydantoin |
| DBP | Disinfection By-Product |
| EAP | Emergency Action Plan |
| ECCU | Emergency Cardiovascular Care Update |
| EPA | Environmental Protection Agency |
| FAC | Free Available Chlorine |
| FIFRA | Federal Insecticide, Fungicide, and Rodenticide Act |
| FINA | Federation Internationale de Natation Amateur |
| GFCI | Ground-Fault Circuit Interrupter |
| GPM | Gallons Per Minute |
| HMIS | Hazardous Material Identification System |
| HOBr | Hypobromous Acid |
| HOCl | Hypochlorous Acid |
| HSEESS | Hazardous Substance Emergency Events Surveillance System |
| IARC | International Agency for Research on Cancer |
| IBC | International Building Code |
| ICC | International Code Commission |
| ICBO | International Council of Building Officials |
| IESNA | Illuminating Engineering Society of North America |
| ILCOR | International Liaison Committee on Resuscitation |

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|---|---|
| IPC | International Plumbing Code |
| ISPSC | International Swimming Pool and Spa Code |
| MAHC | Model Aquatic Health Code |
| METS | Metabolic Equivalents |
| NCAA | National Collegiate Athletic Association |
| NEC | National Electrical Code |
| NEHA | National Environmental Health Association |
| NEISS | National Electrical Injury Surveillance System |
| NFPA | National Fire Protection Association |
| NFSHSA | National Federation of State High School Associations |
| NPDS | National Poison Data System |
| NPSH | Net Positive Suction Head |
| NSF | National Sanitation Foundation |
| ORP | Oxidation Reduction Potential |
| OSHA | Occupational Safety and Health Administration |
| PHMB | Polyhexamethylene Biguanide Hydrochloride |
| POS | Perimeter Overflow System |
| PPE | Personal Protective Equipment |
| PPM | Parts Per Million |
| PVC | Polyvinyl Chloride |
| RLV | Relative Limit Value |
| RPZ | Reduced Pressure Zone |
| RWI | Recreational Water Illness |
| SDS | Safety Data Sheet |
| SCI | Spinal Cord Injury |
| SMACNA | Sheet Metal and Air Conditioning Contractors' National Association |
| TDH | Total Dynamic Head |
| TDS | Total Dissolved Solids |
| THM | Trihalomethane |
| TLV | Threshold Limit Value |
| UL | Underwriter Laboratories |
| UPC | Uniform Plumbing Code |
| USLSC | United States Lifeguarding Standards Coalition |
| UV | Ultraviolet |
| VFD | Variable Frequency Drive |
| WC | Water Closet |
| WQTD | Water Quality Testing Device |
| YMCA | Young Men’s Christian Association |

## 3.2 Glossary of Terms Used in the MAHC Annex

**“Activity Pool”** *See “Pool.”*

**“Agitated Water”** means an aquatic venue with mechanical means *(aquatic features)* to discharge, spray, or move the water's surface above and/or below the static water line of the aquatic venue. Where there is no static water line, movement shall be considered above the deck plane.

**"Aquatic Facility"** means a physical place that contains one or more aquatic venues and support infrastructure.

**"Aquatic Feature"** means an individual component within an aquatic venue. Examples include slides, structures designed to be climbed or walked across, and structures that create falling or shooting water.

**"Aquatic Venue Enclosure"** means an uninterrupted barrier surrounding and securing an aquatic venue.

**"Aquatic Venue"** means an artificially constructed structure or modified natural structure where the general public is exposed to water intended for recreational or therapeutic purpose. Such structures do not necessarily contain standing water, so water exposure may occur via contact, ingestion, or aerosolization. Examples include swimming pools, wave pools, lazy rivers, surf pools, spas *(including spa pools and hot tubs)*, therapy pools, waterslide landing pools, spray pads, and other interactive water venues.

- **"Increased Risk Aquatic Venue"** means an aquatic venue which due to its intrinsic characteristics and intended users has a greater likelihood of affecting the health of the bathers of that venue by being at increased risk for microbial contamination *(e.g., by children less than five years of age)* or being used by people that may be more susceptible to infection *(e.g., therapy patients with open wounds)*. Examples of increased-risk aquatic venues include spray pads, wading pools and other aquatic venues designed for children less than five years of age as well as therapy pools.

- **"Lazy River"** means a channeled flow of water of near−constant depth in which the water is moved by pumps or other means of propulsion to provide a river−like flow that transports bathers over a defined path. A lazy river may include play features and devices. A lazy river may also be referred to as a tubing pool, leisure river, leisure pool or a current channel.
- **"Spa"** means a structure intended for either warm or cold water where prolonged exposure is not intended. Spa structures are intended to be used for bathing or other recreational uses and are not usually drained and refilled after each use. It may include, but is not limited to, hydrotherapy, air induction bubbles, and recirculation.
- **"Special Use Aquatic Venue"** means aquatic venues that do not meet the intended use and design features of any other aquatic venue or pool listed/identified in this Code.

**"Authority Having Jurisdiction"** *(AHJ)* means an agency, organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, installations, or procedures.

**"Automated Controller"** means a system of at least one chemical probe, a controller, and auxiliary or integrated component that senses the level of one or more water parameters and provides a signal to other equipment to maintain the parameters within a user-established range.

**"Available Chlorine"** *See "Chlorine"*

**"Backflow"** means a hydraulic condition caused by a difference in water pressure that causes an undesirable reversal of the flow as the result of a higher pressure in the system than in its supply.

**"Barrier"** means an obstacle intended to prevent direct access from one point to another.

**"Bather"** means a person at an aquatic venue who has contact with water either through spray or partial or total immersion. The term bather as defined, also includes staff members, and refers to those users who can be exposed to contaminated water as well as potentially contaminate the water.

**"Bather Count"** means the number of bathers in an aquatic venue at any given time.

**"Best Practice"** means a technique or methodology that, through experience and research, has been proven to reliably lead to a desired result.

**"Body of Water"** *(per NEC, q.v.)* means any aquatic venue holding standing water, whether permanent or storable.

**"Bulkheads"** means a movable partition that physically separates a pool into multiple sections.

**"Chemical Storage Space"** means a space in an aquatic facility used for the storage of pool chemicals such as acids, salt, or corrosive or oxidizing chemicals.

**"Chlorine"** means an element that at room temperature and pressure is a heavy greenish yellow gas with a characteristic penetrating and irritating smell; it is extremely toxic. It can be compressed in liquid form and stored in heavy steel tanks. When mixed with water, chlorine gas forms hypochlorous acid, the primary chlorine-based disinfecting agent, hypochlorite ion, and hydrochloric acid. Hypochlorous acid dissociation to hypochlorite ion is highly pH dependent. Chlorine is a general term used in the MAHC which refers to hypochlorous acid and hypochlorite ion in aqueous solution derived from chlorine gas or a variety of chlorine-based disinfecting agents.

- **"Available Chlorine"** means the amount of chlorine in the +1 oxidation state, which is the reactive, oxidized form. In contrast, chloride ion *($Cl^-$)* is in the -1 oxidation state, which is the inert, reduced state. Available Chlorine is subdivided into Free Available Chlorine and Combined Available Chlorine. Pool chemicals containing Available Chlorine are both oxidizers and disinfectants. Elemental chlorine *($Cl_2$)* is defined as containing 100% available chlorine. The concentration

of Available Chlorine in water is normally reported as mg/L *(PPM)* "as $Cl_2$", that is, the concentration is measured on a $Cl_2$ basis, regardless of the source of the Available Chlorine.

- **"Free Chlorine Residual"** means the portion of the total available chlorine that is not "combined chlorine" and is present as hypochlorous acid *(HOCl)* or hypochlorite ion *($OCl^-$)*.The pH of the water determines the relative amounts of hypochlorous acid and hypochlorite ion. HOCl is a very effective bactericide and is the active bactericide in pool water. $OCl^-$ is also a bactericide, but acts more slowly than HOCl. Thus, chlorine is a more effective bactericide at low pH than at high pH. A free chlorine residual must be maintained for adequate disinfection.

**"Cleansing Shower"** *See "Shower."*

**"Code"** means a systematic statement of a body of law, especially one given statutory force.

**"Combustion Device"** means any appliance or equipment using fire. These include, but may not be limited to, gas or oil furnaces, boilers, pool heaters, domestic water heaters, etc.

**"Construction Joint"** means a watertight joint provided to facilitate stopping places in the construction process. Construction joints also serve as contraction joints which control cracking.

**"Contamination Response Plan**" means a plan for handling contamination from formed-stool, diarrheal-stool, vomit, and blood.

**"Contaminant"** means a substance that soils, stains, corrupts, or infects another substance by contact or association.

**"Corrosive Material"** means pool chemicals, fertilizers, cleaning chemicals, oxidizing cleaning materials, salt, de-icing chemicals, other corrosive or oxidizing materials, pesticides, and such other materials which may cause injury to people or damage to the building, air-handling equipment, electrical equipment, safety equipment, or fire-suppression equipment, whether by direct contact or by contact via fumes or vapors, whether in original form or in a foreseeably likely decomposition, pyrolysis, or polymerization form. Refer to labels and SDS forms.

**"Crack"** means any and all breaks in the structural shell of a pool vessel or deck.

**"Cross-Connection"** means a connection or arrangement, physical or otherwise, between a potable water supply system and a plumbing fixture, tank, receptor, equipment, or device, through which it may be possible for non-potable, used, unclean, polluted and contaminated water, or other substances to enter into a part of such potable water system under any condition.

**"CT Inactivation Value"** means a representation of the concentration of the disinfectant *(C)* multiplied by time in minutes *(T)* needed for inactivation of a particular contaminant. The concentration and time are inversely proportional; therefore, the higher the concentration of the disinfectant, the shorter the contact time required for inactivation. The CT value can vary with pH or temperature change so these values must also be supplied to allow comparison between values.

**"Deck"** means surface areas serving the aquatic venue, including the dry deck, perimeter deck, and pool deck.

- **"Dry Deck"** means all pedestrian surface areas within the aquatic venue enclosure not subject to frequent splashing or constant wet foot traffic. The dry deck is not perimeter deck or pool deck, which connect the pool to adjacent amenities, entrances, and exits. Landscape areas are not included in this definition.
- **"Perimeter Deck"** means the hardscape surface area immediately adjacent to and within four feet *(1.2 m)* of the edge of the swimming pool also known as the "wet deck" area.
- **"Pool Deck"** means surface areas serving the aquatic venue, beyond perimeter deck, which is expected to be regularly trafficked and made wet by bathers.

**"Diaper-Changing Station"** means a hygiene station that includes a diaper-changing unit, hand-washing sink, soap and dispenser, a means for drying hands, trash receptacle, and disinfectant products to clean after use.

**"Diaper-Changing Unit"** means a diaper-changing surface that is part of a diaper-changing station.

**"Dichloramine"** means a disinfection by-product formed when chlorine binds to nitrogenous waste in pool water to form an amine- containing compound with two chlorine atoms *($NHCl_2$)*. It is a known acute respiratory and ocular irritant.

**"Disinfection"** means a treatment that kills or irreversibly inactivates microorganisms *(e.g., bacteria, viruses, and parasites)*; in water treatment, a chemical *(commonly chlorine, chloramine, or ozone)* or physical process *(e.g., ultraviolet radiation)* can be used.

**"Disinfection By-Product"** *(DBP)* means a chemical compound formed by the reaction of a disinfectant *(e.g. chlorine)* with a precursor *(e.g. natural organic matter, nitrogenous waste from bathers)* in a water system *(pool, water supply)*.

**"Drop Slide"** *See "Slide."*

**"Dry Deck"** *See "Deck."*

**"Emergency Action Plan"** *(EAP)* means a plan that identifies the objectives that need to be met for a specific type of emergency, who will respond, what each person's role will be during the response and what equipment is required as part of the response.

**"Enclosure"** means an uninterrupted constructed feature or obstacle used to surround and secure an area that is intended to deter or effectively prevent unpermitted, uncontrolled, and unfettered access. It is designed to resist climbing and to prevent passage through it and under it. Enclosure can apply to aquatic facilities or aquatic venues.

**"EPA Registered"** means all products regulated and registered under the Federal Insecticide, Fungicide, and Rodenticide Act *(FIFRA)* by the U.S. Environmental Protection Agency *(EPA; http://www.epa.gov/agriculture/lfra.html)*. EPA registered products will have a registration number on the label *(usually it will state "EPA Reg No." followed by a series of numbers)*. This registration number can be verified by using the EPA National Pesticide Information Retrieval System *(http://ppis.ceris.purdue.edu/#)*.

**"Equipment Room"** means a space intended for the operation of pool pumps, filters, heaters, and controllers. This space is not intended for the storage of hazardous pool chemicals.

**"Exit Gate"** means an emergency exit, which is a gate or door allowing free exit at all times.

**"Fixture"** *See "Plumbing Fixture" and/or "Hygiene Fixture."*

**"Flat Water"** means an aquatic venue in which the water line is static except for movement made by users. Diving spargers do not void the flat water definition.

**"Flume"** means the riding channels of a waterslide which accommodate riders using or not using mats, tubes, rafts, and other transport vehicles as they slide along a path lubricated by a water flow.

**"Foot Bath"** means standing water in which bathers or aquatics staff rinse their feet.

**"Free Chlorine Residual"** OR **"Free Available Chlorine"** *See "Chlorine."*

**"Ground-Fault Circuit Interrupter"** *(GFCI)* means a device for protection of personnel that de-energizes an electrical circuit or portion thereof in the event of excessive ground current.

**"Hand Wash Station"** means a location which has a hand wash sink, adjacent soap with dispenser, hand drying device or paper towels and dispenser, and trash receptacle.

**"Hot Water"** means an aquatic venue with water temperature over 90 degrees Fahrenheit *(30 degrees Celsius)*.

**"Hygiene Facility"** means a structure or part of a structure that contains toilet, shower, diaper-changing unit, hand wash station, and dressing capabilities serving bathers and patrons at an aquatic facility.

**"Hygiene Fixtures"** means all components necessary for hygiene facilities including plumbing fixtures, diaper-changing stations, hand wash stations, trashcans, soap dispensers, paper towel dispensers or hand dryers, and toilet paper dispensers.

**"Hyperchlorination"** means the intentional and specific raising of chlorine levels for a prolonged period of time to inactivate pathogens following a fecal or vomit release in an aquatic venue as outlined in MAHC 6.5.

**"Imminent Health Hazard"** means a significant threat or danger to health that is considered to exist when there is evidence sufficient to show that a product, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent injury based on the number of potential injuries and the nature, severity, and duration of the anticipated injury or illness.

**"Increased Risk Aquatic Venue"** *See "Aquatic Venue."*

**"Indoor Aquatic Facility"** means a physical place that contains one or more aquatic venues and the surrounding bather and spectator/stadium seating areas within a structure that meets the definition of "Building" per the 2012 International Building Code. It does not include equipment, chemical storage, or bather hygiene rooms or any other rooms with a direct opening to the aquatic facility. Otherwise known as a natatorium.

**"Infinity Edge"** means a pool wall structure and adjacent perimeter deck that is designed in such a way where the top of the pool wall and adjacent deck are not visible from certain vantage points in the pool or from the opposite side of the pool. Water from the pool flows over the edge and is captured and treated for reuse through the normal pool filtration system. They are often also referred to as "vanishing edges," "negative edges," or "zero edges."

**"Inlet"** means wall or floor fittings where treated water is returned to the pool.

**"Interactive Water Play Aquatic Venue"** means any indoor or outdoor installation that includes sprayed, jetted or other water sources contacting bathers and not incorporating standing or captured water as part of the bather activity area. These aquatic venues are also known as splash pads, spray pads, wet decks. For the purposes of the MAHC, only those designed to recirculate water and intended for public use and recreation shall be regulated.

**"Interior Space"** means any substantially enclosed space having a roof and having a wall or walls which might reduce the free flow of outdoor air. Ventilation openings, fans, blowers, windows, doors, etc., shall not be construed as allowing free flow of outdoor air.

**"Island"** means a structure inside a pool where the perimeter is completely surrounded by the pool water and the top is above the surface of the pool.

**"Landing Pool"** *See "Pool."*

**"Lazy River"** *See "Aquatic Venue."*

**"Lifeguard Supervisor"** means an individual responsible for the oversight of lifeguard performance and emergency response at an aquatic facility. A qualified lifeguard supervisor is an individual who has successfully completed a lifeguard supervisor training course and holds an unexpired certificate for such training; and who has met the pre-service and continuing in-service requirements of the aquatic facility according to this code.

**"mg/L"** means milligrams per liter and is the equivalent metric measure to parts per million *(ppm)*.

**"Monitoring"** is the regular and purposeful observation and checking of systems or facilities and recording of data, including system alerts, excursions from acceptable ranges, and other facility issues. Monitoring includes human or electronic means.

**"Moveable Floors"** means a pool floor whose depth varies through the use of controls.

**"No Diving Marker"** means a sign with the words "No Diving" and the universal international symbol for "No Diving" pictured as an image of a diver with a red circle with a slash through it.

**"Oocyst"** means the thick-walled, environmentally resistant structure released in the feces of infected animals that serves to transfer the infectious stages of sporozoan parasites *(e.g., Cryptosporidium)* to new hosts.

**"Oxidation"** means the process of changing the chemical structure of water contaminants by either increasing the number of oxygen atoms or reducing the number of electrons of the contaminant or other chemical reaction, which allows the contaminant to be more readily removed from the water or made more soluble in the water. It is the "chemical cleaning" of pool water. Oxidation can be achieved by common disinfectants *(e.g., chlorine, bromine)*, secondary disinfection/sanitation systems *(e.g. ozone)* and oxidizers *(e.g. potassium monopersulfate)*.

**"Oxidation Reduction Potential"** *(ORP)* means a measure of the tendency for a solution to either gain or lose electrons; higher *(more positive)* oxidation reduction potential indicates a more oxidative solution.

**"Patron"** means a bather or other person or occupant at an aquatic facility who may or may not have contact with aquatic venue water either through partial or total immersion. Patrons may not have contact with aquatic venue water, but could still be exposed to potential contamination from the aquatic facility air, surfaces, or aerosols.

**"Peninsula / Wing Wall"** means a structural projection into a pool intended to provide separation within the body of water.

**"Perimeter Deck"** *See "Deck."*

**"Perimeter Gutter System"** means the alternative to skimmers as a method to remove water from the pool's surface for treatment. The gutter provides a level structure along the pool perimeter versus intermittent skimmers.

**"Plumbing Fixture"** means a receptacle, fixture, or device that is connected to a water supply system or discharges to a drainage system or both and may be used for the distribution and use of water; for example: toilets, urinals, showers, and hose bibs. Such receptacles, fixtures, or devices require a supply of water; or discharge liquid waste or liquid-borne solid waste; or require a supply of water and discharge waste to a drainage system.

**"pH"** means the negative log of the concentration of hydrogen ions. When water ionizes, it produces hydrogen ions *(H+)* and hydroxide ions *(OH-)*. If there is an excess of hydrogen ions the water is acidic. If there is an excess of hydroxide ions the water is basic. pH ranges from 0 to 14. Pure water has a pH of 7.0. If pH is higher than 7.0, the water is said to be basic, or alkaline. If the water's pH is lower than 7.0, the water is acidic. As pH is raised, more hypochlorous acid ionization occurs and chlorine disinfectants decrease in effectiveness.

**"Pool"** means a subset of aquatic venues designed to have standing water for total or partial bather immersion. This does not include spas.

- **"Activity Pool"** means a water attraction designed primarily for play activity that uses constructed features and devices including pad walks, flotation devices, and similar attractions.

- **"Landing Pool"** means an aquatic venue or designated section of an aquatic venue located at the exit of one or more waterslide flumes. The body of water is intended and designed to receive a bather emerging from the flume for the purpose of terminating the slide action and providing a means of exit to a deck or walkway area.
- **"Skimmer Pool"** means a pool using a skimmer system.
- **"Surf Pool"** means any pool designed to generate waves dedicated to the activity of surfing on a surfboard or analogous surfing device commonly used in the ocean and intended for sport as opposed to general play intent for wave pools.
- **"Therapy Pool"** means a pool used exclusively for aquatic therapy, physical therapy, and/or rehabilitation to treat a diagnosed injury, illness, or medical condition, wherein the therapy is provided under the direct supervision of a

licensed physical therapist, occupational therapist, or athletic trainer. This could include wound patients or immunocompromised patients whose health could be impacted if there is not additional water quality protection.

- **"Wading Pool"** means any pool used exclusively for wading and intended for use by young children where the depth does not exceed two feet *(0.6 m)*.
- **"Wave Pools"** means any pool designed to simulate breaking or cyclic waves for purposes of general play. A wave pool is not the same as a surf pool, which generates waves dedicated to the activity of surfing on a surfboard or analogous surfing device commonly used in the ocean and intended for sport as opposed to general play intent for wave pools.

**"Pool Deck"** *See "Deck."*

**"Pool Slide"** *See "Slide."*

**"Public Water Systems"** means water systems including community water systems, non-transient/non-community water systems, or transient non-community water systems with exceptions as noted by AHJ and EPA.

**"Purge"** means to introduce a large volume of outdoor air to flush the interior space.

**"Qualified Lifeguard"** means an individual who has successfully completed an AHJ-recognized lifeguard training course offered by an AHJ-recognized training agency, holds a current certificate for such training, has met the pre-service requirements, and is participating in continuing in-service training requirements of the aquatic facility.

**"Qualified Operator"** means an individual responsible for the operation and maintenance of the water and air quality systems and the associated infrastructure of the aquatic facility and who has successfully completed an AHJ-recognized operator training course to operate an aquatic facility offered by an AHJ-recognized training agency and holds a current certificate for such training.

**"Raceway"** means an enclosed channel of metallic or nonmetallic materials designed expressly for holding wires, cables, busbars or additional functions as permitted.

**"Recessed Steps"** means a way of ingress/egress for a pool similar to a ladder but the individual treads are recessed into the pool wall.

**"Recirculation System"** means the combination of the main drain, gutter or skimmer, inlets, piping, pumps, controls, surge tank or balance tank to provide pool water recirculation to and from the pool and the treatment systems.

**"Reduction Equivalent Dose *(RED)* bias"** means a variable used in UV system validation to account for differences in UV sensitivity between the UV system challenge

microbe *(e.g., MS2 virus)* and the actual microbe to be inactivated *(e.g., Cryptosporidium)*.

**"Rinse Shower"** *See "Shower."*

**"Safety"** *(as it relates to construction items)* means a design standard intended to prevent inadvertent or hazardous operation or use *(i.e., a passive engineering strategy)*.

**"Safety Plan"** means a written document that has procedures, requirements and/or standards related to safety which the aquatic facility staff shall follow. These plans include training, emergency response, and operations procedures.

**"Safety Team"** means any employee of the aquatic facility with job responsibilities related to the aquatic facility's emergency action plan.

**"Sanitize"** means reducing the level of microbes to that considered safe by public health standards *(usually 99.999%)*. This may be achieved through a variety of chemical or physical means including chemical treatment, physical cleaning, or drying.

**"Saturation Index"** means a mathematical representation or scale representing the ability of water to deposit calcium carbonate, or dissolve metal, concrete or grout.

**"Secondary Disinfection Systems"** means those disinfection processes or systems installed in addition to the standard systems required on all aquatic venues, which are required to be used for increased risk aquatic venues.

**"Shower"** means a device that sprays water on the body.

- **"Cleansing Shower"** means a shower located within a hygiene facility using warm water and soap. The purpose of these showers is to remove contaminants including perianal fecal material, sweat, skin cells, personal care products, and dirt before bathers enter the aquatic venue.

- **"Rinse Shower"** means a shower typically located in the pool deck area with ambient temperature water. The main purpose is to remove dirt, sand, or organic material prior to entering the aquatic venue to reduce the introduction of contaminants and the formation of disinfection by-products.

**"Skimmer"** means a device installed in the pool wall whose purpose is to remove floating debris and surface water to the filter. They shall include a weir to allow for the automatic adjustment to small changes in water level, maintaining skimming of the surface water.

**"Skimmer Pool"** *See "Pool."*

**"Slide"** means an aquatic feature where users slide down from an elevated height into water.

- **"Drop Slide"** means a slide that drops bathers into the water from a height above the water versus delivering the bather to the water entry point.

- **"Pool Slide"** means a slide having a configuration as defined in The Code of Federal Regulations *(CFR)* Ch. II, Title 16 Part 1207 by CSPC, or is similar in construction to a playground slide used to allow users to slide from an elevated height to a pool. They shall include children's *(tot)* slides and all other non- flume slides that are mounted on the pool deck or within the basin of a public swimming pool.

- **"Waterslide"** means a slide that runs into a landing pool or runout through a fabricated channel with flowing water.

**"Spa"** *See "Aquatic Venue."*

**"Special Use Aquatic Venue"** *See "Aquatic Venue."*

**"Standard"** means something established by authority, custom, or general consent as a model or example.

**"Storage"** means the condition of remaining in one space for one hour or more. Materials in a closed pipe or tube awaiting transfer to another location shall not be considered to be stored.

**"Superchlorination"** means the addition of large quantities of chlorine-based chemicals to kill algae, destroy odors, or improve the ability to maintain a disinfectant residual. This process is different from hyperchlorination, which is a prescribed amount to achieve a specific CT inactivation value whereas superchlorination is the raising of free chlorine levels for water quality maintenance.

**"Supplemental Treatment Systems"** means those disinfection processes or systems which are not required on an aquatic venue for health and safety reasons. They may be used to enhance overall system performance and improve water quality.

**"Surf Pool"** *See "Pool."*

**"Theoretical Peak Occupancy"** means the anticipated peak number of bathers in an aquatic venue or the anticipated peak number of occupants of the decks of an aquatic facility. This is the lower limit of peak occupancy to be used for design purposes for determining services that support occupants. Theoretical peak occupancy is used to determine the number of showers. For aquatic venues, the theoretical peak occupancy is calculated around the type of water use or space:

- **"Flat Water"** means an aquatic venue in which the water line is static except for movement made by users usually as a horizontal use as in swimming. Diving spargers do not void the flat water definition.
- **"Agitated Water"** means an aquatic venue with mechanical means *(aquatic features)* to discharge, spray, or move the water's surface above and/or below the static water line of the aquatic venue so people are standing or playing vertically. Where there is no static water line, movement shall be considered above the deck plane.
- **"Hot Water"** means an aquatic venue with a water temperature over 90$^{o}$F *(32$^{o}$C)*.
- **"Stadium Seating"** means an area of high-occupancy seating provided above the pool level for observation.

**"Therapy Pool"** *See "Pool."*

**"Toe Ledge**" *See "Underwater Ledge."*

**"Trichloramine"** means a disinfection by-product formed when chlorine binds to nitrogenous waste in pool water to form an amine-containing compound with three chlorine atoms *($NCl_3$)*. It is a known acute respiratory and ocular irritant. It has low solubility in water and is rapidly released into the air above pools where it can accumulate, particularly in indoor settings.

**"Trihalomethanes"** *(THM)* means chemical compounds in which three of the four hydrogen atoms of methane *($CH_4$)* are replaced by halogen atoms. Trihalomethanes are environmental pollutants and many are considered carcinogenic.

**"Turnover" or "Turnover Rate" or "Turnover Time"** means the period of time, usually expressed in hours, required to circulate a volume of water equal to the capacity of the aquatic venue.

**"Underwater Bench"** means a submerged seat with or without hydrotherapy jets.

**"Underwater Ledge" or "Underwater Toe Ledge"** means a continuous step in the pool wall that allows swimmers to rest by standing without treading water.

**"UV Transmissivity"** means the percentage measurement of ultraviolet light able to pass through a solution.

**"Wading Pool"** *See "Pool."*

**"Waterslide"** *See "Slide."*

**"Water Replenishment System"** means a way to remove water from the pool as needed and replace with make-up water in order to maintain water quality.

**"Water Quality Testing Device"** *(WQTD)* means a product designed to measure the level of a parameter in water. A WQTD includes a device or method to provide a visual indication of a parameter level, and may include one or more reagents and accessory items.

**"Wave Pools"** *See "Pool."*

**"Wing Wall / Peninsula"** *See "Peninsula / Wing Wall."*

## 3.3 Glossary of Codes, Standards, Laws Cited in the MAHC Annex

***Air Movement Control Association***

- AMCA 201

***American Concrete Institute Standards***

- Reference 302.1 R-80, Guide for Concrete Floor and Slab Construction

***American Heart Association***

- Emergency Cardiovascular Care Update (ECCU)
    - Guidelines for CPR and ECC
    - www.citizencpr.org

***American National Standards Institute***

- ANSI/IEEE 241, Section 5.17.6.
- A137.1-2012

***American National Standards Institute/Air Conditioning Contractors of America***

- Manual SPS 2010
- Section 1-6
- Section12-3
- Section 4-4

***American National Standards Institute / Association of Pool and Spa Professionals***

- ANSI/APSP-1
- ANSI/APSP-9

***American National Standards Institute / International Safety Equipment Association***

- ANSI /ISEA Z308.1-2009: Workplace First Aid Basic Kit

***American National Standards Institute / International Aquatic Foundation***

- ANSI/IAF-9

***American National Standards Institute/National Spa and Pool Institute***

- ANSI/NSPI-1

***American Society of Heating, Refrigerating and Air-Conditioning Engineers* (ASHRAE)**

- ASHRAE 62: Ventilation for Acceptable Indoor Air Quality
- *ASHRAE Handbook: HVAC Applications, 2011, Places of Assembly, Natatoriums*
- Thermal and Water Vapor Transmission Data

***American Society of Mechanical Engineers***

- Bottom Drains/Main Drain System
- Boilers

***American Society for Testing and Materials***

- ASTM F2285-04: *Consumer Performance Standards for Commercial Diaper-Changing Stations*
- ASTM F1346–91: *Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs*

***Americans with Disabilities Act Accessibility Guidelines***

- 2010 ADA Standards for Accessible Design

***Canadian Pest Management Regulatory Agency***

***Canadian Standards Association***

- 2.6-2006 Ga
- C22.2

***Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs***

- Accessed at: http://nrckids.org

***Chimney Safety Institute of America, Plainfield, IN***

- *Proper Venting of Gas Fueled Appliances*, 2010

***Clean Air Act***

- Section 112(r)

***Code of Federal Regulations***

- 21 CFR Parts 201 and 310: *Labeling and Effectiveness Testing; Sunscreen Drug Products for Over-the-Counter Human Use*
- 29 CFR 1910.304: *Wiring Design and Protection*
- 29 CFR 1910.1030: *Bloodborne Pathogens* (OSHA)
- 29 CFR Part X 1926.1053(b)(9) (OSHA)

***Conference for Food Protection***

- Food Protection Managers Certification Program Standards
- Section 7.7
- Section 7.5

***Consumer Product Safety Commission***

- National Electronic Injury Surveillance System (NEISS) Data
- Interpretations and Staff Guidelines for the Virginia Graeme Baker Pool and Spa Safety Act
- Pool Slide Standards

***Emergency Planning and Community Right-to-Know Act (EPCRA)***

- Section 311
- Consolidated List of Chemicals
- http://emergencymanagement.wi.gov/EPCRA/forms/EPA_List_of_Lists1.pdf

***Environmental Protection Agency***

- EPA 815-R-06-007: *Ultraviolet Disinfectant Guidance Manual*

***European Standard***

- EN 13451-11:2004

***Federation Internationale de Natation Amateur***

- Standards for Starting Blocks and Platforms

***Food and Drug Administration***

- Model Food Code for Kitchens

***International Building Code***

- "Open Building" definition
- Section 307

***International Code Council (ICC)***

- ICC 300
- ICC A117.1-2009

***International Liaison Commission of Resuscitation (ILCOR)***

- www.ilcor.org

***International Mechanical Code***

- Section 304.1
- Section 502
- Section 701

***International Plumbing Code***

- *A Guide for Use and Adoptio*n

***International Swimming Pool and Spa Code***

- Section 609.3.1

***National Collegiate Athletic Association***

Standards for

- Starting Blocks and Platforms
- Water Depth
- Diving Boards
- Touchpads

***National Electrical Code***

- Article 100: *Location, Wet*

- Article 110-26 : *Minimum Clearances*
- Article 110.11: *Deteriorating Agents*
- Article 225
- Article 250-110(2)
- Article 300.7: *Raceways Exposed to Different Temperatures*
- Article 378.10: *Non-Metallic Raceways*
- Article 500
- Article 680
- Article 680.22: *General Circuitry Pool Pump Motors*
- Article 800

***National Electrical Manufacturing Association***

- Standard 250
- NEMA / ANSI Z535: Safety Alerting Standards

***National Fire Protection Association***

- NFPA 54: National Fuel Gas Code
    - Section 8.1.2.
    - Section 8.1.6
- NFPA 70HB08, Article 100, “Labeled”, Explanatory Note
- NFPA 70HB08, Art. 100, “Listed”, FPN
- NFPA 400 Oxidizer Hazard Classifications and Storage
- NFPA 5000: *Building Construction and Safety Code*
- NFPA 704: *Standard System for the Identification of the Hazards of Materials for Emergency Response*

***National Federation of State High School Associations***

Standards for

- Lane Markings
- Water Depth
- Diving Envelope
- Starting Platforms
- Touchpads

***National Oceanic and Atmospheric Administration***

- NOAA Technical Memorandum ERL PMEL-67, *Eyeball Optics of Natural Waters: Secchi Disk Science*, Rudolph W. Preisendorfer, Pacific Marine Environmental Laboratory,Seattle, WA, April 1986.

***National Recreation and Park Association***

- Aquatic Facility Operator Manual

***National Sanitation Foundation***

- NSF/ANSI Standard 14
- NSF/ANSI Standard 50

***National Swimming Pool Foundation***

- Certified Pool Operator Manual

***Occupational Safety and Health Agency***

- OSHA Fact Sheet: OSHA's Bloodborne Pathogens Standard

***Propane Council, Washington DC***

- Instruction Sheet IV: *Identifying and Correcting Burner Problems*

***Sheet Metal and Air Conditioning Contractors' National Association***

- SMACNA Duct Manual

***Safety Data Sheets – Health Hazard Data & Spill Data***

- Calcium Hypochlorite, Section 10 *Stability and Reactivity Data* and Section 7 *Handling and Storage*
- Hydrochloric Acid, Section 10 *Stability and Reactivity Data*
- Muriatic Acid, Section 10 *Stability and Reactivity Data*
- Sodium Hypochlorite, Section 10 *Stability and Reactivity Data*

***Underwriters Laboratories***

- Section 50
- Section 508
- UL 2075

***U.S. Codes:***

- California Assembly Bill
- Florida
- New York
- Oregon
- Texas
- Wisconsin

***US Army Corps of Engineers***

- 2012 Air Leakage Test Protocol for Building Envelopes
- Accessed at: http://www.wbdg.org/pdfs/usace_airleakagetestprotocol.pdf

***United States Environmental Protection Agency***

- Oswer 90 008.1 *Chemical Emergency Preparedness and Prevention Advisory Swimming Pool Chemicals: Chlorine.*
- Alternate Disinfection Manual

***Virginia Graeme Baker Pool and Spa Safety Act***

- Available at: http://poolsafely.gov/state-local-officials/pool-spa-safety-act-requirements/
- Interpretation Guidance: http://poolsafely.gov/pool-spa-safety-act/interpretations-guidelines/