ARTICLE 165
BATHING ESTABLISHMENTS

§165.01 Applicability.

(a) This Article shall apply to all bathing establishments as defined in §165.03 owned or operated by city agencies, or commercial interests or private entities including, but not

limited to, public or private schools, corporations, hotels, motels, camps, apartment houses, condominiums, country clubs, gymnasia and health establishments. The regulations shall apply to all shower and dressing rooms, toilet facilities, filtration, pumping, piping, disinfection and safety equipment provided and maintained in connection with such bathing establishments.

(b) This Article shall not apply to: (1) a pool, spray features/grounds or sauna and steam rooms, within a one or two family dwelling, or a dwelling unit of a multiple dwelling, and solely for the use of the occupants for non-commercial purposes, (2) a float tank or relaxation tank used by one person at a time, (3) pools used only for religious purposes (ritual immersion), (4) spa pools used for prescribed medical therapy or rehabilitation and under medical supervision, or (5) a spray ground that uses water from the municipal water supply or a source of potable water pursuant to §141.01 of this Code without impoundment, reuse or recirculation of the water.

(c) A school, day care facility, or summer day camp regulated under Articles 45, 47 and 48 respectively, of this Code and permitted pursuant to one or more of those Articles shall not require a permit under this Article, but shall comply with all other provisions of this Article.

(d) No alteration or repair or addition shall be made in a bathing establishment unless a written description of the alteration or repair or addition is submitted to the Department for review and approval prior to commencing work. Repair or remodeling of an existing permitted establishment shall be in compliance with design and construction requirements in this Article.

§165.03 Definitions.

Adequate. "Adequate" means sufficient to accomplish the purposes for which something is intended, and to such a degree that no unreasonable risk to health or safety is presented. An item installed, maintained, designed and assembled, an activity conducted or act performed, in accordance with generally accepted standards, principles or practices applicable to a particular trade, business, occupation or profession, is adequate within the meaning of this Article.

Aquatic supervisory staff. "Aquatic supervisory staff" means an individual possessing the qualifications of Supervision Level II, Supervision Level III, or a supervising lifeguard having Level II qualifications, as provided in §165.15(b).

Bathing establishment. "Bathing establishment" means every indoor or outdoor place where: (1) there is a swimming, wading, spa, or special purpose pool, (2) there is a sauna or steam room with or without a pool, or (3) there is a spray ground with or without a pool, sauna or steam room.

Building code. "Building code" means the Building Code of the City of New York.

Certified pool operator. "Certified pool operator" means an individual possessing a current certification of the successful completion of a course in swimming pool technology administered by the Department.

Combined chlorine. "Combined chlorine" means the part of the total chlorine existing in water in chemical combination with ammonia, nitrogen, or organic compounds, mostly comprised of chloramines. Combined chlorine plus free chlorine equals total chlorine. Combine chlorine is calculated from the results of measuring the free and total chlorine with an appropriate test kit.

Cross connection. "Cross connection" means a physical connection between the potable water system and a non-potable source such as a pool, or physical connection between a bathing

establishment water and the sanitary sewer or waste water disposal system such that non-potable water may flow into the potable water system.

Deep water or deep end. "Deep water or deep end" means those areas of a swimming pool where water is more than five feet deep.

Fill and draw pool. "Fill and draw pool" means a pool having no recirculation system. It has as the primary manner of cleaning the complete removal and disposal of the used water and replacement with water at periodic intervals. Public use of a fill and draw pool is prohibited.

Foot Shower. "Foot shower" means a shower head and similar water feature for use in rinsing debris from patrons' feet.

Major alteration, renovation or addition. "Major alteration, renovation or addition" means substantial physical change to the bathing establishment, shape, structure, enclosure, electrical system or other appurtenances, or to the water disinfection or recirculation system, or to the waste water system. It does not include replacement of equipment or piping previously approved by the Department provided that the type of and size of the equipment are not changed, nor does it include normal maintenance or repair.

mg/l. "mg/l" means milligrams per liter and is equivalent to parts per million (ppm).

Movable-bottom pool. "Movable-bottom pool" means a pool with a hydraulic lift arrangement for floor movement and a jet water self-cleaning system, or a movable panel to provide access for a robotic vacuum.

N.S.F. "N.S.F." means National Sanitary Foundation.

Pool. "Pool" means an artificial basin, tank, or chamber constructed of concrete, masonry, metal, or other impervious material which contains water and is operated for the purpose of bathing, wading, swimming, diving, water recreation, or therapy. This does not include bath tubs which are drained between uses.

Pool operator."Pool operator" means an individual possessing a current certification of the successful completion of an adequate course of instruction, as determined by the Department, regarding the safe and effective operation and maintenance of pool treatment equipment.

Physical-therapy pool. "Physical-therapy pool" means a pool not intended for swimming or instruction in swimming. A "physical-therapy pool" is medically administered and specifically designed and constructed for hydro-therapy, medical treatment, physical or muscle relaxation, or reserved for use by persons with physical disabilities or other special purposes deemed appropriate by the Department.

Recirculation. "Recirculation" means the pump, piping, filtration system, chemical feed systems and accessories provided for treating the pool and/or spray pad water to meet the water quality standards in these rules.

Responsible person. "Responsible person" means a competent individual, at least 18 years of age, employed by the owner or operator of the bathing establishment, who shall be present at the bathing area at all times when the facility is officially open and who exercises control over the patrons, is trained in the use of lifesaving and safety equipment, and emergency procedures and the pool safety plan.

Shallow water or shallow end. "Shallow water or shallow end" means those areas of a swimming pool where the water is 5 feet deep or less.

Spa pool. "Spa pool" means a pool, primarily designed for therapeutic use or relaxation, which is normally not drained, cleaned or refilled for each individual. It may include, but is not limited to, hydrojet circulation, hot water, cold water, mineral bath, air induction, bubbles or any combination thereof. Spa pools shall have a maximum water depth of 4 feet at any point and may

be equipped with aquatic seats within the perimeter of the pool. A "Spa pool" shall not be used for swimming or diving. "Spa Pool" means and includes "hydrotherapy pool," "whirlpool," "hot spa," or "hot tub."

Spray Pad. "Spray pad" means a specific area consisting of a play surface, spray features, and drains, upon which the bathers stand and are sprayed with water.

Spray Ground(s). "Spray Ground(s)" means an artificially created water jet, features or stream where water is sprayed from a structure or the ground in conjunction with a spray pad in which sprayed water is drained, collected, treated and re-circulated back for reuse purposes.

Spray Features. "Spray features" means the devices and plumbing used to convey the treated water to the spray pad to spray the patrons.

Spray Pad Treatment System. "Spray Pad Treatment System" means the equipment and processes used to filter, disinfect and circulate the water used for the spray pad and spray features.

Spray Pad Treatment Tank. "Spray Pad Treatment Tank" means the vessel to collect the water that has been sprayed on the spray pad and returned through the spray pad drains.

Superchlorination. "Superchlorination" means the addition of a sufficient amount of chlorinating compound to pool water and/or spray pad treatment tank water to remove combined chlorine (chlorine that has reacted with nitrogenous compounds) or destroy unwanted organisms in the pool water and/or spray pad treatment tank water. Generally the level of chlorine added is ten times the level of combined chlorine in the pool water and/or spray pad treatment tank water (in units of ml/l or ppm). Treatment of pool water and spray pad treatment tank water with non-chlorine chemicals to eliminate or suppress combined chlorine is not superchlorination.

Supervisory Staff. "Supervisory Staff " means an individual or individuals responsible for supervising bathers and monitoring the spray ground to ensure compliance with regulations for use, and who is familiar with its equipment and is trained in the operation and maintenance of the spray pad treatment system.

Swimming pool. "Swimming pool" means a pool of three foot depth or greater, designed to be used primarily for swimming or other recreation. This includes white-water slide, wave and movable bottom pools.

Turnover period. "Turnover period" means the time required to recirculate a volume of water equivalent to the water volume of the pool through the filtration system.

Wading pool. "Wading pool" means a pool intended to be used for wading by young children for general recreation or training and has a maximum water depth of 24 inches at any point.

Wave pool. "Wave pool" means a pool of special shape and design, with water-wave making machinery.

White-water slide. "White-water slide" means a facility consisting of a starting platform, one or more flumes, and a plunge pool.

§165.05 General Requirements for Permit Applications.

No person shall construct or operate a bathing establishment without prior construction authorization and a permit issued by the Department. No bathing establishment shall be constructed nor shall any major alterations or additions be made to any bathing establishment unless a completed application for the construction, alteration or addition is submitted to the Department for review and approval prior to commencement of work. The application shall include appropriate fees, application forms and other supplemental information as required by the specific circumstances. For bathing establishments with pools and/or spray grounds, the application package shall also include detailed engineering plans, specifications and an

engineering design report. The permit shall be displayed in a conspicuous place at the facility. The Department may order any bathing establishment operating without a permit to close and remain closed until the facility has obtained and displays a valid permit issued by the Department.

(a) Application for a permit shall be made to the Department at least 30 days before the expiration of a permit or at least 30 days before the opening of any bathing establishment.

(b) *Change in ownership.* Within 30 days of the change in ownership of a bathing establishment, the new owner shall file the application for change in ownership with the Department.

(c) *Engineering plans, specifications and engineering report.* Every owner, personally or through his or her engineer or architect, shall submit to the Department plans and specifications covering construction, alteration or reconstruction of bathing establishments or installation or alteration of their equipment prior to the start of construction or installation. No deviation from the plans and specifications or conditions of approval may be made without prior approval of the Department. Plans, specifications and engineering reports shall be prepared by an engineer or architect licensed to practice in the State of New York, and shall include:

(1) *A scope of work letter.* The letter shall include a description of the facility location and background, including physical aspects of the surrounding environment and structures, land and seasonal ground water table, a detailed discussion of the proposed system and the work to be performed.

(2) *Engineering plans.* Three (3) identical sets of engineering plans each bearing the seal and signature of an engineer or architect licensed to practice in the State of New York, shall be submitted to the Department for review and approval. Detailed scaled and dimensional drawings shall include all of the following:

(A) *Plot plan and general site plan:*

(i) A plot plan or vicinity plan showing the precise location of the proposed bathing establishment and building and existing structures by references to known landmarks such as streets and public buildings.

(ii) Name of the project location, the scale in feet, the north point, and direction of prevailing wind (for outdoor pools).

(B) *Detailed plans:* All detailed plans shall be drawn to a suitable scale and include the following information:

(i) A bathing establishment layout plan showing all the proposed facilities: The locations of the bathing area, spray ground layout, spray pad area, diving boards, ladders, stairs, deck, walkway, walls or fences enclosing the pool, inlets, spray features, spray pad drains, main drains, pool and deck drains, vacuum fittings, drinking fountains, piping, hose bibbs, surface skimmer system, recirculation system and appurtenances, filtration system, disinfection equipment, sewage connections, water main, lighting fixtures and other proposed features related to the operation and safety of the proposed bathing establishment including bathhouse, toilet and shower.

(ii) Surface drainage management for the proposed bathing establishment. (For outdoor pools and spray grounds only.)

(iii) A flow diagram or schematic in elevation views of the water treatment and recirculation system.

(iv) Complete construction details, including dimensions, elevations and appropriate cross-sections.

(v) Piping plan containing the size, type and location of all piping, including elevations.

(vi) Construction notes, schedules, charts and other related data.

(3) *Specifications.* One set of complete specifications for the construction of the proposed bathing establishment, bather preparation facilities, recirculation system, filtration facilities, disinfection equipment and all other appurtenances shown on the detailed plans shall be submitted.

(4) *Engineering design report or calculations.* A summary of the design basis, including information relative to the capacity or patron loading (maximum and average), spray pad area, pool area and volume, hydraulic computation (including head loss in all piping and water treatment), chlorinator and pump sizing calculations, recirculation equipment, filtration facilities, disinfection equipment, spray pad treatment system design calculations, spray feature flow rates, turnover and filtration rate, filter flow rates, pump curves, capacity of bathhouse and bather preparation facilities and toilet facilities, and all other appurtenances, shall be submitted.

(d) *Supplemental or additional information.* A completed application shall be accompanied by any supplemental information which the Department deems necessary for review. For bathing establishments using water other than the municipal public water supply, the application should also include source, quality, quantity available and characteristics of water supplied to the bathing establishment including alkalinity, pH, iron and manganese.

(e) No change in location or construction of the project shall be made from plans and specifications that have been approved without first submitting details of the proposed changes to the Department and receiving subsequent approval.

§165.07 Construction Inspection and Certification.

(a) *Certification.* All bathing establishments with pools shall file on completion of the construction, modification or addition, and prior to public use of new facilities or equipment, a construction compliance certificate to the Department. This certificate shall be prepared and signed by a professional engineer or architect licensed to practice in New York State. The certificate shall include a written statement that the establishment has been constructed in accordance with the plans and specifications approved by the Department.

(b) The applicant shall notify the Department of the completion of construction, modification, alteration or addition in order to schedule a compliance inspection. An approval for construction compliance inspection will be granted by the Department when all of the required items are completed to the Department's satisfaction.

§165.09 Requirements for Permit Approval.

All establishments shall be designed, constructed and completed in accordance with the requirements of this Article. For all bathing establishments:

(a) A completed and approved safety plan, as required by §165.19.

(b) Certificate of Occupancy for the bathing establishment, from the New York City Department of Buildings including an approval letter for underwater lighting construction and certificates of inspection for electrical work (for saunas), and plumbing and certificate of inspection for the gas fired heating system (for steam rooms).

(c) Waste water or sewer discharge permit from an approved agency (for pools and/or spray grounds) as required by §165.33.
(d) Copies of Aquatic Supervisory Certificates, as required by §165.15.
(e) Copies of Pool Operator Certificate, as required by §165.15.

§165.11 Enforcement.

(a) The most recent inspection report shall be readily available for inspection by the Department at the facility.
(b) *Public health hazards and closing criteria.* Where one or more of the following public health hazard conditions exist, the bathing establishment may be immediately closed by the Department and shall remain closed until the hazardous condition(s) are corrected. No person shall use the facility until the violations are corrected in compliance with the provisions of this Article. The facility shall remain closed until the Department has authorized the reopening of the facility. Public health hazard shall mean but shall not be limited to:
(1) *For pools:*
(A) Failure to provide adequate level of supervision, as required by §165.15.
(B) Failure to provide the minimum disinfectant residual levels, as required by §165.23.
(C) Failure to continuously operate the swimming pool's filtration and disinfection equipment.
(D) Use of an unapproved or contaminated water supply source for potable water use.
(E) Overhead electrical wires within 20 feet of the pool, except where covered and secured in a ceiling.
(F) Unprotected electrical circuits or wiring within 10 feet of the pool.
(G) Failure to maintain emergency lighting source.
(H) Inadequate number of lifesaving equipment on pool deck, as required by §165.17.
(I) Pool bottom or main drain grate not visible.
(J) Absence of or improper depth markings at a pool.
(K) Plumbing cross-connections between the drinking water supply and pool water or between sewage system and the pool's filter backwash facilities, or other cross-connections in the pool plumbing.
(L) Failure to provide and maintain an enclosure around the pool area that will prevent access to the pool during the hours in which the pool is not open for use.
(M) Use of unapproved chemicals or the application of chemicals by unapproved methods to the pool water.
(N) Broken, missing or unsecured main drain grates in the pool.
(O) Overcrowding of the pool that results in inability to supervise bathers.
(P) Glass or sharp objects in pool or on deck area.
(Q) Failure to provide pool safety plan approved by the Department.
(R) Spa pool water temperature exceeds 104 degree Fahrenheit.
(S) Any other condition dangerous to life or health.
(2) *For sauna and steam rooms:*
(A) Sauna temperature exceeds 194 degrees Fahrenheit.
(B) Steam temperature exceeds 120 degrees Fahrenheit.

(C) Door not free swinging or does not swing out.
(D) Viewing window not provided.
(E) Monitoring by attendant inadequate, or one hour timer not provided, as required by §165.63.
(F) Alarm not provided, inoperable, inaudible or not operating in correct range. Alarm not installed to cut off heat in sauna or steam room when activated.

(3) *For spray grounds:*
(A) Failure to provide adequate level of supervision of the spray ground as required by §165.15.
(B) Failure to provide the minimum disinfectant residual levels and the minimum ultraviolet light dosage as required by §165.23.
(C) Failure to continuously operate the spray ground filtration and disinfection equipment.
(D) Use of an unapproved or contaminated water supply source for potable water use.
(E) Overhead electrical wires within 20 feet of the spray ground, except where covered and secured in a ceiling.
(F) Unprotected electrical circuits or wiring within 10 feet of the spray pad.
(G) Broken or missing drain grates on the spray pad.
(H) Failure to maintain emergency lighting source.
(I) Plumbing cross-connections between the drinking water supply and spray ground treatment system or between sewage system and the spray pad's filter backwash facilities, or other cross-connections in the plumbing.
(J) Use of unapproved chemicals or the application of chemicals by unapproved methods to the spray ground water.
(K) Glass or sharp objects on spray pad or deck area.
(L) Visible contamination of the spray pad and/or spray pad treatment tank by a potentially toxic chemical or a bacteriological substance that could present a hazard to the public.
(M) Any other condition determined by the Department to be dangerous to life or health.

§165.13 Modification by Department.

When the Department determines that the strict application of any provision of this Article presents practical difficulties the Commissioner or their designee may, in a specific instance, modify the application of such provision consistent with the general purpose of this Article and upon such condition(s) the Department deems necessary to protect life and health. Failure to comply with the terms of a modification may render such modification null and void and result in enforcement by the Department. The denial of a request for modification by the Commissioner shall be deemed a final agency determination.

§165.15 Certifications, Supervision Coverage and Surveillance Requirements.

(a) All bathing establishments shall be maintained and operated in a safe, clean and sanitary condition at all times.
(b) *Certifications.* All bathing establishments shall be operated and supervised by the required certified personnel. The pool operator shall not hire or retain any person who does not have verifiable aquatic supervisory staff qualifications. Copies of the certificates

or other documents showing possession of such qualifications shall be kept on file at the facility and shall be readily available for inspection by the Department.

(1) Pool operator. A pool operator shall be designated and shall be responsible for the operation of the bathing establishment in compliance with this Article. No person who is charged with the operation of a bathing establishment shall engage in or be employed in such capacity unless the person obtains a certificate indicating successful completion of an adequate course of instruction regarding the safe and effective operation and maintenance of pool treatment equipment. "Adequate" is defined in §165.03 of this Article. An adequate course of instruction shall be determined by the Department. A refresher course may be required for a licensed pool operator whenever deemed necessary by the Department. The Department may require that a refresher course be taken when continuing violations of the Article are found, when a water borne disease outbreak implicates the pool and/or spray ground water or sanitary conditions at the pool and/or spray ground, or when the Department requires such a course to acquaint the operator with current developments in pool operation.

(2) *Aquatic supervisory staff.* Except in a physical-therapy pool, appropriately certified aquatic supervisory staff shall be present whenever the pool is open. A minimum of one supervising lifeguard is required for pools that require three or more aquatic supervisory staff.

The aquatic supervisory staff shall meet the following minimum requirements:

(A) *Supervision Level II—Pool Lifeguard.*

(1) Shall be at least 16 years old (or 15 years old if a supervisory lifeguard is present), and

(2) Shall possess a current American Red Cross Basic Life Support for the Professional Rescuer Cardiopulmonary Resuscitation (CPR) certificate or equivalent American Heart Association certificate, or an equivalent certificate approved by the New York State Department of Health. Certification period shall not exceed one year, and

(3) Shall possess a current American Red Cross Lifeguard Training Certification, or an equivalent certificate approved by the New York State Department of Health.

(B) *Supervision Level III and IIIA.*

(1) Level III.

(i) Shall be at least 18 years old (or 16 years old if certified as Level II Lifeguard); and

(ii) Shall possess a current American Red Cross Community-Cardiopulmonary Resuscitation (CPR) certificate, or equivalent certificate approved by the New York State Department of Health. Certification period shall not exceed one year, except if assisting a lifeguard as specified in §165.15 (b)(2)(B)(2) below; and

(iii) Shall be competent to understand and apply the provisions of this Article and the Safety Plan, evaluate environmental hazards, use lifesaving equipment, and control bathers and crowds.

(2) Level IIIA. A supervision Level IIIA staff assists a lifeguard with direct supervision of bathers as specified in §165.15 (c)(1)(C)(6) below. No person shall be qualified under this paragraph unless such person

possesses certification in Lifeguard Management issued by the American Red Cross or a certificate issued by a certifying agency determined by the State Commissioner of Health to provide an adequate level of training in aquatic injury prevention and emergency response. Certification shall be valid for the time period specified by the certifying agency but shall not exceed a consecutive three year period from course completion.

(C) *Supervising Lifeguard.*

(1) Supervising lifeguard shall have the qualifications for Supervision Level II.

(2) Supervising lifeguard shall have at least two years adequate life guarding experience.

(c) *Supervision.* For pools, aquatic supervisory staff shall be on the pool deck and shall provide continuous visual supervision and surveillance of the patrons in their assigned or designated area of coverage, without interference or interruption of his/her duties unless additional supervisory staff is provided. The staff shall not be subject to duties that would distract their attention from proper observation of patrons in the pool area, or that would prevent immediate assistance to persons in distress in water. The aquatic supervisory staff shall clear the water of bathers when the pool area is left without adequate supervision. The following is the minimum number of aquatic supervisory staff required for visual surveillance of the entire pool area(s) that are open to bathing. Additional aquatic supervisory staff may be required by the Department whenever it is necessary for the protection of the patrons. The Department may consider such factors as pool size and shape, diving board use, patron decorum and usage by developmentally disabled patrons.

(1) *Swimming pools:*

(A) Pools with less than 3,400 square feet of surface water area: at least one Supervision Level II Lifeguard on duty for every 75 bathers.

(B) Pools with 3,400 square feet or greater in surface water area:

(1) At least one Supervision Level II Lifeguard shall be provided for each 3,400 square feet of pool surface area or fraction thereof.

(2) When the number of bathers exceeds or is likely to exceed 50 percent of the pool bather capacity based on 25 square feet of pool surface area per bather, at least one additional Supervision Level II Lifeguard shall be provided.

(3) At pools required to provide three or more Aquatic Supervisory Staff, a Supervising lifeguard is required.

(4) When included in the department approved safety plan, the pool operator may limit the portions of the pool open to bathers and provide the required aquatic supervisory staff consistent with the pool area open.

(C) *Use of pool for lap swimming or similar restricted usage:* When included in the department approved safety plan, usage of the pool limited to lap swimming or an organized small group activity, may be supervised by fewer lifeguards than required based solely on surface water area.

(2) *Wading pools:* At least one Level III supervisor shall be on duty.

(3) *Spa pools:* Except for spa pools described in §165.01(b), at least one Level III supervisor shall be on duty and provide periodic supervision at least once every 15 minutes, or as specified in the pool safety plan approved by the department.

(4) *Physical-therapy pools:* Except for spa pools described in §165.01(b), supervision by licensed health care providers such as physicians or therapists, qualified as Level III supervisors is required. Such person shall be in the pool or on the pool deck whenever pool is in use.

(5) *Wave pools:* A minimum of three Supervision Level II lifeguards, two of whom are in lifeguard chairs outfitted with the emergency switch that will immediately stop the wave machine, shall be present whenever the wave machine is in operation.

(6) *Pools in usage during instructional activities:* When instructional activities occur, including but not limited to learn to swim programs, physical education classes and swim team activities, and the required Supervision Level II staff (lifeguards, as per §165.15(b)(2)) provide the instruction, at least one additional staff meeting at least Supervision Level III must be provided for each aquatic supervisory staff engaging in instructional activities. When a Supervision Level IIIA staff is utilized to assist a Supervision Level II (lifeguard) staff with direct supervision of bathers during instruction, the Supervision Level IIIA staff must possess certification in aquatic injury prevention and emergency response as specified in §165.15(b)(2)(B)(2) above. The written Safety Plan must describe the duties, positioning at pool side and interaction between the lifeguard and Level III staff which ensures adequate bather supervision and emergency response. Note: where instructors, in the water or on the deck, supplement the required on-deck lifeguard(s) who do not provide instruction, no extra Level III supervision is required.

(7) *White-water slide:* Supervision by Supervision Level II lifeguards shall be provided in a number determined by the Department depending on the design of the facility. A proposed supervision staff plan shall be submitted in writing to the department for review and approval.

(d) *Surveillance requirements for sauna and steam rooms:* If a one-hour timer is not provided, as provided for in §165.63, an attendant who meets the definition of responsible person, shall inspect the facility at a minimal interval of 15 minutes during all periods of operation of a sauna and steam room and shall maintain a daily log of inspections.

(e) *Supervision requirements for spray grounds:* At least one Supervisory Staff as defined in §165.03, shall provide periodic supervision of the spray ground.

§165.17 Lifesaving and Safety Equipment.

Either one commercially prepared 24-unit first aid kit or a minimum supply of band aids, bandage compresses and self-adhering gauze bandages must be provided at the spray ground unless otherwise specified in the safety plan. For facilities with pools, the following minimum equipment shall be kept in good repair and readily accessible near the pool deck at all times when the pool facility is open for use:

(a) *Lifesaving and safety equipment.*

(1) At all pools requiring a Level II lifeguard, the following lifesaving and safety equipment shall be provided:

(A) One rescue tube with an attached line for each lifeguard on duty.

(B) One reaching pole at least 15 feet long.

(C) A full size commercially available spine board (or a spine board 6 feet long and a minimum 16 inches wide) provided with straps and head immobilizer to aid in immobilization of a victim, and handholds.

(D) First aid kit. One commercially prepared 24-unit first aid kit or, a minimum supply of band aids, bandage compresses and self-adhering gauze bandages.

(E) Resuscitation equipment shall be available as specified in the Rules of the Department, Title 24 Rules of the City of New York Chapter 18 (24 R.C.N.Y. Ch. 18).

(F) Two blankets.

(2) At pools requiring a Level III supervisor, the following lifesaving and safety equipment shall be provided:

(A) First aid kit. One commercially prepared 24-unit first aid kit or, a minimum supply of band aids, bandage compresses and self-adhering gauze bandages.

(B) Resuscitation equipment shall be available as specified in the Rules of the Department, Title 24 Rules of the City of New York Chapter 18 (24 R.C.N.Y. Ch. 18).

(C) Two blankets.

(b) *Lifeguard station.* Elevated lifeguard chairs shall be provided at all pools having a surface area greater than 2,000 square feet. One elevated lifeguard chair is required for each 3,400 square feet of pool surface area or fraction thereof. The chairs shall be located so as to provide a clear, unobstructed view of the pool bottom in the pool area under surveillance.

(c) *Emergency telephone and emergency contact list.* A telephone shall be immediately accessible within 300 feet unimpeded distance of the pool water (an unlocked door or gate shall not be considered an impediment) for emergency communications in the bathing establishment. The telephone numbers of local police, emergency medical services, nearest hospital, fire department, and poison control center shall be posted in a conspicuous place near the telephone. The name, address and telephone number of the establishment shall be listed by the telephone.

§165.19 Pool Safety Plan.

The operator of a pool and/or spray ground shall develop, maintain and implement a written safety plan which consists of policies and procedures to be followed by the personnel during normal operation and emergencies for protecting the public from accidents and injuries. The safety plan must include procedures for daily bather supervision, injury prevention, reacting to emergencies, injuries and other incidents, providing first aid and summoning help. The safety plan shall be approved by the department and shall be accessible for use and inspection by the department at all times. The owner or pool operator shall review the plan periodically and update the plan before making any change to operations or the facility or when directed to do so by the department. Changes made to the plan shall be submitted to the department for approval before implementation.

§165.21 Facility Operating Policy.

(a) The operator shall comply with the minimum requirements of this Code governing safety and sanitation and shall enforce such additional policy as may be necessary to protect the health and safety of the public.

(b) Signs required to be posted shall be posted conspicuously pursuant to §165.41(n) and §165.63(h).

(c) *Contagious or infectious disease control.* Any person having any contagious disease shall be excluded from use of the pool. This includes skin disease, sore or inflamed eyes, a cold, ear or nasal discharges and other communicable diseases not readily apparent by a visual inspection.

(d) *Protection against infection.* Persons having any considerable area of exposed subepidermal tissue, open blisters, cuts, boils or other evident skin or other bodily infection shall be excluded from a bathing establishment.

(e) *Wastes and contamination.* Urinating, expectorating or blowing the nose or otherwise introducing human waste or other contaminants into the pool is prohibited. Children's diapers shall be fully enclosed with impervious material so that liquid and solid wastes are contained therein and do not contaminate the pool water.

(f) *Alcohol.* The pool operator shall not permit persons under the influence of alcohol or who are exhibiting erratic behavior in the pool area.

(g) *Patron control.* Patrons shall be showered and dressed in bathing attire before entering the pool or entering upon walks immediately adjacent to pools.

(h) *Conduct.* The pool operator shall not permit patron conduct within the pool facility that is dangerous or compromises the safety of the patron involved or others in the facility. No boisterous or rough play, except supervised water sports, is permitted.

(i) *Diving.* Diving in water less than eight feet deep is prohibited, except for competitive swimming or training activities appropriately supervised by qualified staff.

(j) *Outdoor pools.* Swimming is prohibited at outdoor swimming pools when lightning is present, including a 15-minute period after the last lightning is observed.

(k) *Spa pools.* The use of oils, body lotions and minerals shall be prohibited.

(l) Prolonged or repetitive breath-holding can be deadly. Such activities are permitted only when appropriately supervised by qualified staff, as set forth in the operator's pool safety plan. No intentional hyperventilation or underwater competitive breath-holding should be allowed.

§165.23 Water Chemistry and Testing Requirements.

The chemical quality of water in the pool and/or spray ground shall not cause irritation to the eyes or skin of the bathers or have other objectionable physiological effects on patrons. The water shall be chemically balanced to maintain clarity, proper disinfection, total alkalinity, and pH levels as specified below:

(a) *Disinfectant residual.* All pools and/or spray grounds in use shall be automatically and continuously disinfected by means of equipment that is in compliance with the provisions of this Article and that uses a disinfectant which is approved by the department. Silver/copper ion generators, ozone and other disinfectants may be used only as a supplement to chlorine or bromine.

(1) *Chlorine residual.*

(A) *Pools.* Where chlorine is used as a disinfectant, and the pool water pH is less than or equal to 7.8, the dosage of chlorine or chlorine compound shall be sufficient to maintain a concentration of at least 0.6 mg/l free chlorine throughout the pool. When pH is between 7.8 and 8.2, a concentration of at least 1.5 mg/l free chlorine residual shall be maintained. During use, pool water shall not exceed a free chlorine residual of 5.0 mg/l or a pH of 8.2. The pH of water in the spa pool shall be maintained between 7.2 and 7.8, and a minimum free residual chlorine of 1.5 mg/l shall be provided. Spa pools shall be chlorinated to 10 mg/l (shock treatment) at least once a week at end of daily usage period.

(B) *Spray Grounds.* When calcium hypochlorite or sodium hypochlorite are used to disinfect a spray pad and the spray pad treatment tank, the dose of chlorine or chlorine compound shall be sufficient to maintain a concentration of at least 2.0 mg/l free chlorine throughout the system including the treatment tank and water emanating from the spray features. A free chlorine residual of 10.0 mg/l shall not be exceeded in any spray pad treatment tank during use. Spray pad treatment tank water pH shall be maintained between 7.2 and 7.8.

(2) *Superchlorination and superoxidation.* When combined chlorine (chloramines) in excess of 0.5 mg/l is detected in pool and/or spray ground treatment tank water, the water shall be superchlorinated to attain a free chlorine concentration of at least 10 times the combined chlorine concentration, or oxidized by other means to eliminate the combined chlorine. Hand feeding of chemicals directly into the pool and/or spray ground treatment tank is permitted for purposes of superchlorination or superoxidation when the pool and/or spray ground is closed to the public.

(3) *Bromine.*

(A) When bromine is used as a disinfectant, the pH of water shall be maintained between 7.2 and 7.8, and a minimum bromine residual of 1.5 mg/l shall be provided. Spa pools shall be maintained at a bromine residual between 3 mg/l and 6 mg/l. A maximum of 6 mg/l bromine residual shall be permitted in any pool during use.

(B) The pH of the spray pad treatment tank water and water emanating from the spray features shall be maintained throughout the system between 7.2 and 7.8 and a minimum bromine residual of 4.4 mg/l shall be provided.

(4) *Silver/copper.* When silver/copper or copper ion generators are authorized, the concentration of copper shall not exceed 1.3 mg/l and the concentration of silver shall not exceed 0.05 mg/l.

(5) *Ozone.* When ozone is authorized, ozone concentration in pool water shall not exceed 0.1 mg/l and the ambient air zone concentration shall be less than 0.1 mg/l at all times either in the vicinity of the ozonator or at the pool water surface.

(6) *Ultraviolet Light.* The light intensity meter reading of the ultraviolet unit shall be monitored and recorded at least two times daily. The light intensity shall be maintained at the manufacturer's specified level for the flow rate. When the output intensity falls below the setpoint intensity, conditions causing decreased ultraviolet light intensity at the sensor shall be evaluated and corrected. The ultraviolet lamp(s) shall be replaced when the decreased ultraviolet light intensity is due to lamp failure.

(7) *Other disinfectants.* Use of cyanuric acid-based chlorine (or any other chlorine stabilizer) is prohibited. Pools found using or containing any cyanuric compound shall be closed, drained and refilled prior to continued use. Disinfectants other than those listed in §165.45(l) may be used only if approved by the department and the New York State Department of Health.

(b) *Total alkalinity.* The total alkalinity of the pool water shall be maintained within the range of 80 to 120 mg/l.

(c) *Testing kits.* Each pool or spray ground facility shall have functional colorimetric water testing equipment for free chlorine and combined chlorine, or total bromine; pH; total alkalinity; calcium hardness; copper concentration when silver/copper or copper ion generator is used; and ozone concentration when ozone generating equipment is used. FAS-DPD test kits are acceptable. A supply of appropriate reagents for making each type of test shall be maintained on site, shall be stored in their original labeled containers and shall be replaced every six months or as recommended by the manufacturer. When colorimetric tests are used, color standards shall be furnished for each of the tests, that allow an accurate comparison of the sample to be tested from standpoint of color and density, and shall be reasonably permanent and no fading. Electronic residual and pH monitoring devices may be used in addition to the test kit.

(1) Water testing equipment for the disinfectant used in the water shall be maintained on site. The equipment for determining pH shall include at least five increments with a range of pH 6.8 to 8.2, accurate to the nearest 0.2 pH unit.

(2) Where chlorine is used as a disinfectant, a DPD (Diethyl-P-Phenylene Diamine) test kit with at least ten chlorine color standards with the following increments: 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 3.0, 5.0 and 10 mg/l as minimum. If other halogens are used, an appropriate scale shall be provided.

(3) When bromine is used as a disinfectant, a colorimetric test kit for determining free bromine residual and pH shall be available. The test kit shall include at least seven bromine standards covering a range of 1.0 to 7.0 mg/l.

(4) Standard testing equipment for determining total alkalinity and calcium hardness, and saturation index. [See paragraph (e), Saturation Index, below.]

(5) When silver/copper or copper ion generator is authorized, a test kit for determining the concentration of copper shall be available.

(6) When ozone generating equipment is authorized, a test kit or equipment for determining the concentration of ozone in water shall be available.

(d) *Records and testing.* A bathing establishment operation record including all test results shall be maintained on a daily basis by the establishment. Whenever tests indicate that an inadequate disinfectant level, inadequate ultraviolet light intensity or inappropriate pH value are present, immediate action shall be taken to reestablish an appropriate disinfectant level and pH value. Pool water shall be manually tested and results recorded as indicated below, including pool water systems equipped with an automatic monitoring device to control pH and disinfectant residual in water:

(1) For pH, free chlorine or bromine residual the water shall be tested at least three times. Tests shall be at the beginning of the day, during the day's peak bather load, and at the end of the day; or more frequently, as needed, throughout each day to maintain the standards required by this Article.

(2) For combined chlorine the water shall be tested at least twice a week.

(3) Total alkalinity and calcium hardness or saturation index shall be tested at least once a month. [See paragraph (e), Saturation Index, below.]

(4) Copper concentration (when silver/copper or copper ion generator is used) shall be tested at least once a month.

(5) Ozone concentration (where ozone is used) shall be tested in accordance with the manufacturer's specifications or at least once a day.

(6) The ultraviolet light intensity meter reading of the ultraviolet light unit shall be monitored and recorded at least two times a day.

(e) *Saturation index.* For the purposes of this Article the saturation index shall be used to determine chemical balance of the water, and whether the water is corrosive (undersaturated) or scale forming (oversaturated). The Department may require that the bathing establishment determine the saturation index monthly or at any other frequency required to maintain water clarity, proper disinfection, alkalinity and pH levels.

S.I. = pH + TF + CF + AF - 12.1

Where: pH = actual reading
12.1 = constant

TF = Temperature Factor (Table 1)
CF = Calcium Hardness Factor (Table 1)
AF = Total Alkalinity Factor (Table 1)

When saturation index is between -0.5 and +0.5, the water is balanced and within tolerance limits. The optimum saturation index is zero.

When saturation index is above +0.5, the water is super-saturated with $CaCO_3$ which may deposit a coating or scale in the pipeline, particularly metal filters, valves and pumps.

When saturation index is below -0.5, water will dissolve $CaCO_3$ and may be corrosive.

Table 1: Numerical Values for Saturation Index Formula

Temperature F° (C°)	TF	Calcium Hardness	CF	Total Alkalinity	AF
32 (0)	0.0	5	0.3	5	0.7
37 (3)	0.1	25	1.0	25	1.4
46 (8)	0.2	50	1.3	50	1.7
53 (12)	0.3	75	1.5	75	1.9
60 (16)	0.4	100	1.6	100	2.0
66 (19)	0.5	150	1.8	150	2.2
76 (24)	0.6	200	1.9	200	2.3
84 (29)	0.7	300	2.1	300	2.5
94 (34)	0.8	400	2.2	400	2.6
105 (40)	0.9	800	2.5	800	2.9
128 (53)	1.0	1,000	2.6	1,000	3.0

Example: Given temperature 68 degrees, total hardness 200 mg/l, total alkalinity 20 mg/l, $CaCO_3$ and pH = 7.8

S.I. = pH + TF + CF + AF - 12.1 *(Calcium hardness = 0.70 × 200 = 140 mg/l)
S.I. = 7.8 + 0.52 + 1.76 + 1.22 - 12.1 = (-) 0.8 Therefore, the water is corrosive.

Note: Saturation index is best maintained slightly on the positive side within the tolerance limits.

Normal Control Levels:	pH = 7.4 - 7.8
Temperature:	78 - 80 degrees (indoors)
Total alkalinity:	80 - 120/mg/l
Free chlorine:	0.6 (minimum) saturation index (-) 0.5 - (+)
	0.5 calcium hardness: 180 - 250 mg/l

Alkalinity Control:	To increase—$1\frac{1}{2}$ lb of sodium bicarbonate $NaHCO_3$ baking soda will raise the alkalinity of 10,000 gallons of water by 10 mg/l.
	To lower—add no more than one pint ($\frac{1}{8}$ gallon) of muriatic acid per 5,000 gallons of pool water (or 1.25 lb of sodium bisulfate). Addition of such compounds may be added by hand into the water while the pool is closed. This will lower alkalinity by 12 mg/l.
pH:	To increase—use soda ash.
	To decrease—muriatic acid or sodium bisulfate.
Hardness Control:	Calcium hardness is assumed to be 70% of total hardness. To increase—1 lb of calcium chloride will raise the calcium hardness of 10,000 gallons of water by 11 mg/l. It should be added in small amounts by hand into the water while the pool is closed. To lower, dilute with soft water.

§165.25 Water Quality Standards.

The water in the pool and/or spray pad treatment tank shall meet the following water quality standards:

(a) *Water temperature.* The maximum water temperature for all spa pools shall not exceed 104 degrees Fahrenheit. A thermostatic control for water shall be provided. An audible alarm system shall be installed and maintained to warn of any temperature over 104 degrees Fahrenheit.

(b) *Water clarity and turbidity.*

(1) For pools, the water in a pool shall be sufficiently clear for a black and white object, four inches in diameter (known as Secchi disk), placed at any location on the bottom of the pool, to be readily visible when viewed from the pool deck. The water clarity test shall be performed as frequently as necessary throughout each day to maintain the standards required by this Article.

(2) *Spray Grounds.* The turbidity in the spray pad treatment tank shall not exceed 3 nephelometric turbidity units (NTU) at any time during use. If this turbidity level is exceeded, the spray pad shall be closed for use until the spray pad treatment system reduces the turbidity to less than 3 NTU.

(c) *Water physical quality.* The bottom and sidewalls of pool shall be kept free of sediment and visible soil, and the pool water surface and/or spray pad treatment tank water surface shall be kept free of visible floating matter.

(d) *Water bacteriological quality.* Samples of water may be collected by the department for microbiological analysis by a laboratory approved by the New York State Department of Health, for evaluating pool and spray pad water quality. The coliform bacteria level shall not exceed 4 colonies per 100 milliliters in more than one sample examined each month. When the membrane filter technique is used, or when the fermentation tube method is used, coliform bacteria shall not be present in more than 10 percent of portions analyzed in any month; and total bacteria shall not exceed 200 colonies per milliliter.

§165.27 Sanitation and Safety.

(a) *Pool and pool area.* (1) *General.* The pool shall be maintained free from sediment, lint, dirt and hair. The pool walls and bottom shall be vacuumed or brushed daily or as needed to remove visible material when pool is closed. The walls, floors, ceilings and equipment shall be maintained so that they are protected from deterioration.

(2) Pool and/or spray ground enclosures or fencing and gates shall be maintained in a manner consistent with §§165.41(i)(l) and/or165.42(g)

(3) Depth markings and safety lines for pools shall be provided and maintained in accordance with the provisions of §165.41(o) and be clearly visible and readable.

(4) Safety signs for pools shall be maintained in a manner consistent with §165.41(u).

(5) *Decks, Spray Pad and Features.*

(A) *General.* Pool and/or spray decks shall be rinsed daily to remove any materials or contaminates on the surface of the pool deck and/or surface of the spray pad. The deck shall be kept clean and free of puddled water. Cracks in the spray pad and/or pool decks shall be repaired when they may be a potential for leakage, present a tripping hazard, a potential cause of lacerations, or impact the ability to properly clean and maintain the pool and/or spray pad area.

(B) *Pools.* Indoor pool decks shall be disinfected at least weekly. The walks, overflow gutters, counters, lockers, equipment, furniture, interior partitions and walls shall be kept in good repair, clean and sanitary. The deck shall be kept free of obstructions and tripping hazards for at least a five-foot (5') width walkway around the entire pool.

(C) *Spray Pad and Features.* The water must be flushed to waste and not discharged into the spray pad treatment tank. Flushing may be accomplished by use of a hose supplied with potable water or by operation of the spray features providing it adequately flushes the entire pad surface and is discharged to waste. The spray pad and features shall be kept free of sediment and visible soil.

(6) *Spa pools.* Spa pools shall be drained and cleaned when needed, and not less than once every two weeks. Placement of chairs or other furniture shall be prohibited within three feet of the edge of any spa pool.

(7) *Food and drinks.* Glass and sharp objects are prohibited in the pool and on spray pad and all deck areas.

(8) For pools, ladders, handrails, diving equipment, lifeguard chairs, slides and other deck equipment shall be kept firmly secured to the deck and maintained in good repair.

(9) Floats or tubes not in use shall be removed from pool.

(10) *Safety ropes (for pools).* Safety ropes shall be kept in place except when pool is being used exclusively for lap swimming or competition.

(11) *Starting blocks (for pools).* Starting blocks shall only be used during supervised practices or swim meets, otherwise the starting blocks shall be removed or secured to prevent use by an untrained person.

(12) *Deck slides (for pools).* Deck slides shall be installed and maintained in accordance with the provisions of §165.41(q).

(13) *Rolling bulkheads (for pools).* Rolling bulkheads, when used, shall be provided with traction wheels running on the pool floor or alternatively in the overflow gutter. When not in use these should be stored in a safe manner.

(14) *Hosing.* A minimum length of 50 feet of hosing shall be provided and available to flush the entire deck area. Hose bibbs shall have antisiphonage devices. The hosing unit shall not be used to fill make-up water into the pool.

(15) *Water level for diving (for pools).* The water level in the pool shall be maintained to provide the required depths in areas for diving as provided below:

(A) Swimming pools equipped with diving boards prior to March 30, 1988, shall meet the minimum water depth and swimming pool and diving board dimensions shown in Columns (1)

to (4) in Table 2. The minimum water depth requirement for one meter boards used only for competitive use and training or used in physical education instruction at schools shall meet criteria in Columns 2, 3 and 4 for 26"-30" boards listed in Table 2.

(B) Swimming pools equipped with diving boards after March 30, 1988, shall meet the criteria shown in Table 3. Minimum dimensions for pools with diving equipment are shown in Table 3 of §165.41.

(C) Head-first diving from the pool deck is prohibited in water depths less than eight feet except during competitive swimming or swimmer training activities.

Table 2: Minimum Water Depth Requirement

Board Height above Water	(1) Minimum Board Overhang over Water	(2) Minimum Water Depth in Diving Area	(3) Minimum Diving Area forward of Board Tip		(4) Maximum Slope to 5' Water Depth
			Width	Length	
Up to 24"	2'6"	8' 4'	13'6"		1:3
> 24" - 26"	2'6"	8½'	8'	10'	1:3
> 26" - 30"	3'	9' 16'	10'		1:3
> 30"	4'	11' 16'	20'		1:2
1 meter	4'	11' 16'	16'		1:3
> 1 meter	6'	12' 20'	20'		1:2

(b) *Bather loads.* The number of patrons within a pool enclosure shall not exceed the maximum permissible loading established by §165.41(m). The bather load shall be posted at the entrance or at a location where it can be seen by all patrons. The pool operator shall be responsible for controlling the number of bathers so that the maximum capacity is not exceeded.

(c) *Bathhouse and bather preparation facilities.* All facilities shall be ventilated and maintained. The floors, walls, fixtures, showers, and toilets shall be kept clean, free of dirt and debris and in good condition. Floors shall be maintained in a slip-resistant condition. Soap dispensers shall be filled and operable. A supply of toilet paper shall be provided at each toilet at all times. All lavatories shall be provided with soap, paper towels or electrical-drying units, and covered waste and sanitary napkin receptacles where appropriate. Showers, when provided, shall

be supplied with water at a temperature no more than 110°F Thermostatic, and tempering or mixing valves shall be kept in good operation to prevent scalding of the users. Shower curtains shall be kept clean. Foot showers, if used, shall be kept clean and free of puddled water. The use of foot baths is prohibited.

(d) *Care of suits and towels.* All swimming suits and towels used by the public and maintained for public use shall be washed with a detergent in hot water, rinsed and thoroughly dried after each use.

(e) *Security.* All doors or gates into the bathing area shall be maintained and checked for proper operation. They shall be kept closed and locked when the facility is closed.

(f) *Noise.* If the noise is excessive such that instructions cannot be heard, corrective action shall be taken.

(g) *Pools temporarily out of service or abandoned.* Pools temporarily not in use or not intended for use shall either be covered securely, or emptied, or secured in a manner approved by the department, by the owner of the property upon which the pool is constructed, or the bathing establishment operator or owner. Water shall not be permitted to accumulate around the pool or on pool covers so as to provide a breeding area for mosquitoes or other insects.

(h) *Sauna and steam rooms.* All sauna and steam rooms shall be maintained pursuant to manufacturers' instruction and operated in a safe, clean and sanitary condition which shall include compliance with the following requirements:

(1) Saunas shall be inspected regularly for the required maintenance to heater, controls and benches. Wood surfaces showing any signs of deterioration shall be replaced.

(2) Pouring water on heater or heating elements is prohibited during operating hours.

(3) Flammable materials such as gasoline, thinners, or paints, shall not be kept at the steam generator area.

§165.29 Operation and Maintenance of Mechanical Equipment.

(a) *Manual.* A manual for operation of the pools and/or spray grounds shall be provided, maintained and available to the pool operator. It shall include instructions for each filter, pump or other piece of equipment, drawings, illustrations, charts, operating instructions and parts list, to permit installation, operation, winterization and maintenance. All valve operating procedures and schedules shall be provided in the equipment room for each mode of operation (recirculation, filtration, backwashing) with piping labeling and flow directions. The mechanical equipment shall be inspected and maintained in accordance with the manufacturers' recommendations and to ensure proper operation.

(b) Pumps, filters, ultraviolet disinfection system, disinfectant or chemical feeders, flow meters, gauges, and all related components of the pool water and/or spray pad treatment tank recirculation system shall be kept in continuous operation 24 hours a day to provide water quality consistent with §165.23 and §165.25. The water level in the spray pad treatment tank shall be maintained continuously by an automatic level control system. The spray pad treatment tank shall be completely drained and cleaned at a frequency necessary to maintain water quality. Pool and/or spray ground equipment and appurtenances shall be operated and maintained in accordance with approved plans and specifications. They shall not be altered or modified in any way unless approved by the Department.

(c) *Inlet fittings.* (1) For pools, inlets shall be checked frequently to ensure that the rate of flow through each inlet establishes a uniform circulation of water and facilitates the maintenance of a uniform disinfectant residual throughout the pool.

(2) For spray grounds, inlets shall be adjusted to produce uniform circulation of water and to facilitate the maintenance of a uniform disinfectant residual throughout the spray pad treatment tank.

(d) *Main drains and deck drains.* Main drain and deck drain grates shall be secured in place at all times. Broken or missing main drain grates shall be repaired or replaced before the pool and/or spray pad is used.

(e) *Vacuum cleaners (for pools).* Vacuum cleaning shall not be conducted when pool is in use.

(f) *Filtration.* The filtration flow rate shall not exceed the maximum filtration design flow rate specified by the filter manufacturers' specifications and in accordance with N.S.F. standards.

(1) *Sand filters.*

(A) The flow rate shall not exceed fifteen gallons per minute per square foot (15 gpm/ft^2) of filter area for high-rate sand filters, and shall not exceed three gallons per minute per square foot (3 gpm/ft^2) for other sand filters.

(B) Filter air release valve shall be opened daily or more frequently as necessary to remove air which collects in the filter.

(C) Sand filter shall be backwashed at a flow rate of twelve to fifteen gallons per minute per square foot (12 to 15 gpm/ft^2) or at the design rate specified by the manufacturers.

(2) *Diatomaceous earth filters.* Diatomaceous earth filters shall be properly maintained and operated according to the manufacturers' instructions and at a filter rate not exceeding two gallons per minute per square foot (2 gpm/ft^2) with body feed or 1.5 gpm/ft^2 without body feed. The backwash water should be managed and disposed of as required by §165.33(b) and §165.43(b)(2).

(3) *Cartridge filters.*

(A) Cartridge filters shall be operated at a filter rate not to exceed the design or a maximum of 0.375 gallons per minute per square foot (0.375 gpm/ft^2) for cartridge filters.

(B) Cleaning of the cartridges shall be accomplished according to manufacturers' instruction either in place or by cartridge removal, depending on the type of unit installed.

(C) One complete spare set of cartridges shall be available for replacement at all times to facilitate cleaning.

(g) *Surface skimmer system (for pools).* The perimeter overflow systems or automatic surface skimmers shall be clean and free of debris which would restrict flow. Skimming weirs shall be maintained and operated in accordance with §165.45(h)(2)(D). The strainer baskets for skimmers shall be cleaned daily to prevent clogging of suction line and cavitation. One spare strainer or screen shall be readily available for replacement. Broken or missing strainers or screens shall be replaced. The flow through each skimmer shall be adjusted as often as necessary to maintain a vigorous skimming action which will remove all floating matter from surface of the water. The skimmer covers shall be securely fastened. The pool water shall be maintained at an elevation such that effective surface skimming of entire pool surface is accomplished. For pools with perimeter overflow systems, adequate surge storage capacity shall be maintained so that flooding of the perimeter overflow system does not occur during periods of peak usage. The flow returning from the pool shall be balanced or valved such that the majority of flow is returned through the perimeter overflow or skimmer system.

(h) *Chemical feeders.* All chemical feeders shall be periodically inspected and serviced in accordance with the manufacturers' instructions.

(i) *Flow meters.* All flow meters shall be maintained in accurate operating condition and the glass and connecting tubes shall be kept clean.

(j) *Piping.* All exposed piping and valves shall be properly color coded pursuant to §165.45(c)(3).

(k) *Lighting and electrical equipment.*

(1) All lighting and electrical equipment shall be maintained in good repair and in good operating condition. Defects in the electrical system, including but not limited to wiring, pumps, underwater lights, overhead lights or their respective lenses, shall be immediately repaired.

(2) Portable AC electrical devices, such as announcing systems and radios within the reach of patrons, shall be prohibited.

(3) Windows and lighting equipment shall be adjusted to prevent glare and excessive reflection on the pool surface. Illumination levels shall be maintained in accordance with the provisions in §165.47.

(4) No overhead electrical wiring shall pass within 20 feet of the pool and/or spray pad except where covered and secured in a ceiling.

(5) When underwater lighting is not provided and night swimming is permitted, surface lighting shall be adequate to allow an observer on the deck to clearly see the pool bottom. Emergency lighting shall be maintained as required by §165.47(a)(7).

(6) At all indoor spray pads and spray pads used at night, surface lighting shall be adequate to allow an observer to clearly see the spray pad and deck.

(7) Defects in the electrical system, including overhead lights and the respective lenses, shall be immediately repaired.

(l) *Ventilation and heating.* Ventilation, heating and exhaust equipment shall be maintained and operated to provide air movement and temperature pursuant to §165.47(b) and (c).

(m) *Utraviolet light or equivalent treatment process.* Ultraviolet light disinfection or equivalent treatment process shall be provided and maintained to disinfect water provided to the spray pad in accordance with §165.45(l)(9). The ultraviolet light units shall be cleaned in accordance with the manufacturer's specifications. When the output intensity falls below the setpoint intensity, conditions causing decreased ultraviolet light intensity at the sensor shall be evaluated and corrected. When the decreased ultraviolet light intensity is due to lamp failure, the ultraviolet lamp(s) shall be replaced in accordance with manufacturer's recommendations.

(n) *Sauna.* Installation of the heating unit, maintenance of and other electrical installation shall be performed by a qualified licensed electrician.

§165.31 Chemical Handling and Storage.

(a) *General requirements.* All chemicals used in pools and/or spray grounds shall be handled and stored in accordance with manufacturers' recommendations and applicable law. Only chemicals used by the United States Environmental Protection Agency, specified as food additives by the United States Food and Drug Administration as potable use approved by NSF, or by the State Commissioner of Health, shall be used. Each chemical shall be kept covered and stored in the original, labeled container with the identity of the chemical and appropriate hazard warnings clearly labeled, away from flame and heat sources, and in a clean, dry, well-ventilated place which prevents unauthorized access to the chemicals. The facility shall maintain the manufacturer's instructions for all chemicals in the facility.

(b) *Mixing.* When mixing a chemical solution the pool operator shall mix the chemical in water. Each chemical or chemical solution shall be separately applied. Chemicals shall not be combined or mixed together prior to application. Clean inert materials shall be used for container

and mixing tools, and mixing shall be done by pouring the chemical into water. Mixing shall not be accomplished by pouring water into the chemical.

(c) *Method.* The method for addition of pool water treatment chemicals shall be specified in the pool safety plan. The method of chemical addition shall protect the patron from contact with concentrated chemicals. The method shall provide adequate distribution of the chemical throughout the pool and distribution shall be verified by pool water testing prior to bather exposure.

(d) *Smoking.* Smoking shall be prohibited in the chemical storage area or by anyone who is handling chemicals.

(e) *Carbon dioxide (CO_2).* CO_2 cylinders should be stored in a protective enclosure at the exterior of occupied structures. CO_2 cylinders used in the interior of occupied structures shall be placed only in a ventilated enclosure pursuant to §165.47.

(f) *Hypochlorite.* Hypochlorite shall be used with extreme caution during handling or mixing. When using calcium hypochlorite, the pool operator shall not mix or contaminate the hypochlorite with organic matter or any foreign material (such as household products, soap products, ammonia, paint products, solvents, acids, vinegar, or dirty rags) which may result in fire or decomposition explosion.

§165.33 Water Supply and Waste Water Disposal.

(a) *Water supply.* The water supply serving all plumbing fixtures, including drinking water fountains, lavatories and showers shall meet the provisions of §165.43.

(b) *Waste water disposal.* All waste water from a bathing establishment shall be discharged in such manner that waste water cannot be siphoned, flooded or otherwise discharged into the pool. The sanitary sewer serving the bathing establishment shall be discharged to a municipal sewer system or other approved disposal system. Wash or backwash water shall not be discharged to the ground surface.

(c) *Diatomaceous earth filter wash.* Diatomaceous earth filter wash or backwash water shall first pass through a separation tank designed for removal of the diatomaceous earth and suspended solids before discharging to an approved sanitary sewer system. The separation tank sludge shall be disposed of or treated as a solid waste material in accordance with applicable law.

§165.35 Garbage and Refuse Disposal.

All garbage and refuse produced in connection with the operation of the bathing establishment shall be properly stored, collected, and disposed of in a sanitary manner to prevent harborage of rodents, insect attraction or breeding, odors, environmental pollution and accidents.

§165.37 Drowning and Injury or Illness Incident Notification and Reporting.

(a) *Twenty-four hour notification.* All drownings, injuries, or illness in a bathing establishment shall be reported by the owner or operator to the Department within 24 hours of occurrence. A report as specified in paragraph (b) below shall be made to the Department whenever an incident occurs that:

(1) Results in death
(2) Requires resuscitation
(3) Requires referral to a hospital or other facilities for medical attention
(4) Involves illnesses associated with the water quality

(b) *Reporting.* The written incident report referred to in paragraph (a) above shall be completed and submitted to the department within seven days. The incident shall be recorded in the log book and shall include:

(1) Name of the aquatic supervisory staff or operator
(2) The date, time and type of incident
(3) Cause of the injuries
(4) The extent of injuries, if any
(5) Actions taken by persons at the site
(6) Witnesses statements
(7) Lifesaving and safety equipment used.

§165.39 Record Keeping.

(a) *Pools.* The owner or person in charge of a pool shall maintain daily operational records and log book which shall include the following information: number of bathers; quantity of water added; length of time pumps and filters are in operation; time when each filter is backwashed or cleaned; quantity of each chemical added; time when the bottom and sides of the pool are cleaned; the results of all tests for hydrogen ion and residual chlorine; and other information the Department may require to demonstrate compliance with this Code. A copy of the daily operational records shall be forwarded to the Department at monthly intervals. Copies of the records shall also be kept at the bathing establishment for inspection by the Department for a period of six months from the date of the creation of the record.

(b) *Sauna and steam rooms.* The person in charge of a sauna or steam room shall maintain a daily log of quarter-hour inspections, unless a one-hour timer is provided pursuant to §§165.15(c) and 165.63(c). Copies of the records shall be readily available for inspection by the department at the facility for a period of six months from the date of the creation of the record.

(c) *Spray Grounds.* The owner or person in charge of a spray ground shall maintain a daily operational record and log book which shall include the following information: quantity of water added; length of time pumps and filters are in operation; time when each filter is backwashed or cleaned; quantity of each chemical added; time when the spray pad and treatment tank are cleaned; the results of all tests for hydrogen ion and residual chlorine; dates and type of light cleaning maintenance and lamp replacement work for ultraviolet light system and other information the Department may require to demonstrate compliance with this Code. A copy of the daily operational records shall be forwarded to the Department at monthly intervals. Copies of the records shall also be kept at the bathing establishment for inspection by the Department for a period of twelve months from the date of the creation of the record.

§165.41 General Requirements for Pools.

(a) *General.* All bathing establishments with pools shall be designed and constructed in accordance with the requirements contained in this code. All bathing establishments with pools shall be located at a site conducive to good operation, maintenance, and public safety and free from contamination. The site shall have sufficient drainage and be separated from environmentally sensitive areas (for example, subsurface sewage disposal systems, open bodies of freshwater, groundwater wells).

(b) *Structural stability.* The designing architect or engineer shall certify the structural stability and safety of the bathing establishment. All bathing establishments shall be designed and constructed to withstand all anticipated loading for both full and empty conditions, and hydrostatic and earth pressures involved in each case. The strength of the assembled and installed components and accessories to be used in and around the pools should be such that no structural failure of any component part shall cause the failure of any other component part.

(c) *Construction material finishes.* (1) *Materials.* Pools shall be constructed of materials which are inert, stable, nontoxic, watertight and enduring. Sand or earth bottoms or unlined wooden tubs are prohibited. The materials of components and accessories used in and around the pools shall be compatible with human occupancy and the environment in which they are installed. Materials shall be capable of fulfilling the design, installation, and intended use requirements.

(2) *Finish.* The pool bottom and sides shall be white or a light color with a smooth and easily cleanable surface.

(3) *Corners.* All corners formed by intersection of pool walls and bottom shall be rounded.

(d) *Accessibility.*

(1) *Entrance.* For pools receiving construction authorization from the department after the effective date of this Article, entrance to the pool area shall be at a point adjacent to the shallow end of the pool.

(2) An emergency exit from the pool room shall be provided. All exits should be clearly marked.

(e) *Equipment.* All equipment used or proposed for use in pools shall be tested and listed by N.S.F. or another testing laboratory under standards promulgated by N.S.F. Equipment that is experimental or not N.S.F. approved shall be submitted to the Department for review. The experimental equipment shall be tested as follows:

(1) Use-tested in New York or another state in at least 10 pools of comparable design for a period of at least 60 days, with engineering reports on results of use submitted; or

(2) Pilot-plant testing of at least 90 days, with formal submission of an operational report prepared by the design engineer or architect; or

(3) A combination of use and testing or a trial use period approved by the Department and the New York State Commissioner of Health.

(f) *Size and shape.* Dimensional limits are not specified for the length, width, or shape of pools. The size and shape shall be selected based on competitive requirements, bather demand, and space available for a particular establishment. The shape of any pool shall be such that the circulation of pool water and control of bathers' safety are not impaired. There shall be no underwater or overhead projections or obstructions which would endanger patron safety or interfere with pool operation.

(g) *Minimum water depth.* The minimum depth of water in the pool shall be three feet except for wading pools and wave pools.

(h) *Bottom slope.* The bottom of the pool shall slope downward toward the main drains. The slope in shallow areas (depths less than 5') shall not exceed one foot (1') vertical in twelve feet (12') horizontal. In portions of the pool with depth greater than five feet, the slope shall not be steeper than one foot in three feet.

(i) *Pool walls.* The walls of a pool shall be either:

(1) Vertical for a distance of at least six feet (6'); or

(2) Vertical for a distance of at least three feet (3') below the water level; below which the wall may be curved to the bottom with a radius not greater than the difference between the depth at that point and three feet (3'); provided that vertical is interpreted to permit slopes not greater than one foot (1') horizontal for each five feet (5') of depth of sidewall (11 degrees from vertical).

(j) *Safety ledges.* Ledges shall not extend into the pool unless they are essential for support of the upper wall construction.

(k) *Decks and walkways.* (1) *General.* A continuous deck at least five feet (5') wide shall extend completely around the pool. For spa and wading pools, two contiguous sides of decking equal to fifty percent (50%) or more of the perimeter shall be provided. The deck shall be of a uniform, easily cleaned, impervious material with a slip-resistant surface.

(A) *Deck capacity.* Additional deck space beyond the required five feet wide clear walkway may be constructed based on a minimum ratio of fifty square feet (50 ft^2) of pool deck area per bather.

(B) Where diving boards, slides, or any other deck equipment are installed at the pool, a clear deck of not less than five feet of constructed deck shall be provided behind the diving boards, slides, lifeguard chair or other deck equipment.

(2) *Deck covering.* Porous, non-fibrous deck covering which contains a label indicating it complies with the N.S.F. or other material approved by the department may be used for deck covering. An approved material shall meet the following criteria:

(A) The covering shall allow drainage so that the covering and the deck underneath it do not remain wet or retain moisture.

(B) The covering is inert and will not support bacterial growth.

(C) The covering provides a slip-resistant surface.

(D) The covering is durable and cleanable.

(3) *Slope.* The deck shall be sloped at least one-fourth inch per foot ($^1/_4$ in/ft) to deck drains or grades.

(4) *Drainage.* Deck drains, when used, shall be spaced and arranged so that not more than four hundred square feet (400 ft^2) of area is tributary to each drain, and drains shall not be spaced more than twenty-five feet (25 ft) apart. There shall be no direct connection between the pool deck drains and the pool gutter or recirculation system. The deck of outdoor pools shall be sloped away from the pool or to the deck drains to prevent surface runoff from entering the pool.

(5) *Roll-out and deck level gutters.* If the pool is equipped with deck level gutters, not more than five feet of deck shall be sloped toward the gutters.

(6) *Hose bibbs.* At least one hose bibb shall be provided to facilitate flushing of the deck area and each bibb shall be provided with an anti-siphonage device.

(7) *Rinse showers.* Adjacent recreational areas shall be separated from the bathing area by a suitable fence or barrier. If bathers are permitted free access between the deck and an adjacent recreational area without having to pass through a bathhouse or bather preparation facilities, a rinse shower area shall be installed so that bathers shall pass through the rinse shower area when going from the recreational area to the deck. Minimum requirements for a rinse shower shall include:

(A) water for the rinse shower(s),

(B) have sufficient drainage so that there is no standing water,

(C) a foot surface that is impervious and slip-resistant.

(l) *Pool enclosures.* All pools shall be protected by a fence, wall, building, or other solid barrier, or any combination thereof. A wall of a building may serve as part of the enclosure, provided that there is no direct access from the wall to the pool. Pools located on a roof, where there is no access to the roof except through doors where access can be prevented when the pool is unsupervised, do not require additional enclosure. All pools shall be provided with an enclosure which shall comply with the following:

(1) No external handholds or footholds.

(2) Materials which are durable.

(3) At least six feet (6') in height, except for wading pools at four foot (4') minimum (see §165.51).

(4) Have a maximum vertical clearance above grade of two inches (2").

(5) The entrance into the pool enclosure shall be equipped with a door or gate that is self-closing and has a positive self-latching closure mechanism at least forty inches (40") above grade. Doors and gates at all entrances shall be equipped with hardware that permits secure locking of the entrance and prevents access when the pool is not supervised.

(6) Where a chain-link fence is provided, the openings between links shall not exceed $2^3/_8$ inches and chain link twists shall extend above the upper horizontal bar. The enclosure shall have railings and posts within the enclosure, which shall be capable of resisting a minimum lateral load of one hundred fifty pounds (150 lb) applied midway between posts and at top of posts, respectively. Enclosures, fence material or fabric shall be capable of withstanding a concentrated lateral load of fifty pounds (50 lb) applied anywhere between supports on an area twelve square inches (12 in^2), without failure or permanent deformation.

(7) Where a picket-type fence is provided, space between pickets shall not exceed 4 inches and pickets shall extend above the upper horizontal bar.

(m) *Pool capacities and patron loading.* The maximum permissible number of bathers allowed in the pool at one time is as follows:

(1) *Pools (except spa and wading pools):* Twenty-five square feet (25 ft^2) of water surface area shall be provided for each patron.

(2) *Diving area:* Three hundred square feet (300 ft^2) of pool water surface area shall be reserved around each diving board or diving platform, and this area shall not be included in computing the permissible patron use.

(3) *Spa pools:* Ten square feet (10 ft^2) of pool water surface area shall be provided for each patron.

(4) *Wading pools:* Fifteen square feet (15 ft^2) of pool water surface area shall be provided for each patron.

(n) *Spectator areas and visitor galleries.* There shall be an effective separation between spectator areas and bather areas so as to prevent contamination of the pool. Galleries for spectators shall not overhang any portion of the pool surface. The floor and foot rail of the gallery shall be of tight construction to prevent dirt from being tracked into the pool.

(o) *Depth markings and safety lines.*

(1) *Depth markings.* Depth markings shall be numercial with numbers of four inch (4") minimum height, followed by the words "feet deep" or "foot depth", and with colors contrasting with the background. Depth of water shall be plainly marked at or above the water surface on the vertical pool wall and on the edge of the deck next to the pool. Depth markers shall indicate the actual pool depth. Water depth shall be measured at a point three feet (3') from the pool wall. Depth markers shall be spaced at not more than twenty-five foot (25') intervals along the pool perimeter. Where depth markings cannot be placed on the vertical walls above the water level, other means shall be used so that the markings will be plainly visible to persons in the pool. Markings shall be on both sides and ends of the pool placed at the following locations:

(A) At the points of maximum and minimum depth and at all points of change of slope.

(B) At break between the deep and shallow portions.

(C) At intermediate two foot (2') increments of depth.

(2) *Depth markers of irregularly shaped pools.* Depth markers of irregularly shaped pools shall specify depth at intervals of 25 feet measured along the perimeter of the pool.

(3) *Safety lines.* The boundary line between the shallow and deep areas where it exists, shall be marked at the five foot depth with a four inch stripe of contrasting color on the floor and walls of the pool and by a safety rope and floats equipped with float keepers. Where there is no break in slope the boundary shall be set at the five foot (5') depth, where it is ten feet (10') or more from the nearest end of the pool. Ledges and step edges shall also be marked with a four inch (4") stripe of contrasting color, two inches (2") on the tread and two inches (2") on the riser.

(p) *Diving area.*

(1) The minimum dimensions of the swimming pool and appurtenances in the diving area shall conform to Table 3. The minimum dimensions for diving portion of swimming pools designed for competitive diving, may upon application to, and approval by, the department, utilize nationally recognized competitive design standards. For diving boards in excess of 3 meters in height over water, the design criteria, including pool dimensions shall be adjusted in accordance with good engineering practice.

(2) *Headroom.* There shall be a completely unobstructed clear distance of sixteen feet (16') above the diving board, measured from the center of the front end of the board. This area shall extend at least eight feet (8') behind, eight feet to each side, and sixteen feet (16') ahead of the measuring point.

(3) *Diving boards and platforms.* Diving boards and platforms in excess of three meters in height shall be designed and constructed or selected such that they are adequate to sustain expected static and dynamic loading with appropriate design safety factors.

(4) *Steps and guardrails for diving boards.* Supports, platforms and steps for diving boards shall be of adequate design and construction and of sufficient structural strength with appropriate design safety factors to safely carry the maximum anticipated loads. Steps shall be of corrosion-resistant material, easily cleanable and of nonslip design. Handrails shall be provided at all steps and ladders leading to diving boards one meter or more above the water. The guardrails shall be thirty inches (30") high, extending at least to the edge of the water.

Table 3. Minimum Dimensions for Diving Portion of Swimming Pool

Note: Minimum depth of five feet shall be maintained when a wall terminates at the pool area opposite diving boards. Otherwise, the specified shallow area floor slope may be used to shallow end.

Minimum Dimensions

Max. board height over water	**Max. diving board length**			**D**	**L(1)**	**L(2)**	**Pool width**
26" (2/3 meter)	10'	8'-6"	2'-6"	10'-0"			20'-0"
30" (3/4 meter)	12'	9'-0"	3'-0"	10'-0"			20'-0"

1 meter	16'	11'-0"	4'-0"	20'-0"	20'-0"
3 meters	16'	12'-0"	6'-0"	20'-0"	24'-0"

Board placement shall be in compliance with the following. For multiple-board installations, minimum pool widths shall be increased accordingly.

1 meter or less—Board to pool side 10'0"
3 meters—Board to pool side 12'0"
Distance between adjacent boards 10'0"

(q) *Deck slides.* All deck slides which may be installed at a swimming pool shall be labeled to indicate compliance with the requirements of the U.S. Consumer Product Safety Commission or other generally acceptable standard that provides equivalent and adequate safety. The bottom of any slide shall discharge into a minimum water depth of four feet.

(r) *Rolling bulkheads.* Rolling bulkheads which may be provided at a pool, shall be equipped with traction wheels running on the pool floor or alternatively in the overflow gutter. The design shall be such that the patrons cannot be entrapped under the bulkhead.

(s) *Starting blocks.* Starting blocks when provided, shall be designed according to recognized competitive design standards. Starting blocks shall be installed over a minimum water depth of six feet (6').

(t) *Ladders, recessed steps, stairs and handrails.* Except in a wading pool, physical-therapy pool, wave pool, white-water slide or movable-bottom pool, steps or ladders shall be provided to serve the shallow and deep portion of the pool, and if the pool is over thirty fet wide, such steps or ladders shall be installed on each end and on opposite sides. Stairs, ladders, and recessed steps shall be located so as not to interfere with racing lanes or with diving. If recessed steps are used, at least one additional non-recessed stairway or one conventional ladder shall be provided.

(1) *Ladders.* Pool ladders shall be corrosion-resistant and shall be equipped with nonslip treads. All ladders shall be so designed as to provide a handhold and shall be rigidly installed. There shall be a clearance of not more than six inches (6") nor less than three inches (3") between any ladder and the pool wall.

(2) *Recessed steps.* Recessed steps shall be readily cleanable and shall be arranged to drain into the pool to prevent the accumulation of dirt. Recessed steps shall have a minimum breadth of five inches (5") and a minimum width of fourteen inches (14").

(3) *Stairs.* Where stairs are provided they shall be located diagonally in a corner of the pool or be recessed. They shall be equipped with a handrail. Stairs shall be of nonslip design, have a minimum tread of twelve inches (12") and a maximum rise of ten inches (10").

(4) *Handrails.* Where ladders, recessed steps and stairs are provided within the pool, there shall be a handrail at the top of each side thereof extending over the coping or edge of the deck.

(u) *Safety and warning signs.*

(1) *"No diving" markers.* "No diving" markers at least four inches (4") high shall be located at not more than twenty-five foot (25') intervals around the pool perimeter, where the water depth is less than eight feet deep.

(2) *Warning signs.* A sign or signs shall be securely posted in a conspicuous place or places in the pool area and bather preparation facility and shall provide the following information:

(A) Maximum number of persons permitted in pool at any time.

(B) Maximum number of persons permitted on deck at any time.

(C) Maximum number of persons permitted in the pool area.

(D) The hours that pool is open.

(E) The hours that pool use is prohibited.

(F) "No person having any contagious disease or infectious condition such as sores or inflamed eyes, a cold, nasal or ear discharge, cuts, boils or other evident skin or other bodily infection shall enter the pool."

(G) "Urinating, expectorating or blowing the nose, or allowing human waste in any pool is prohibited."

(H) "Persons not dressed for bathing shall not enter upon walks immediately adjacent to pools, and bathers shall not enter places provided for spectators."

(I) "No person under the influence of alcohol or exhibiting erratic behavior shall enter the pool or the pool deck."

(J) "Emergency telephone number for police, fire, and hospital is 911."

(K) "Prolonged or repetitive breath-holding can be deadly. No intentional hyperventilation or underwater competitive breath-holding."

(i) The Department may require that the sign include a pictogram designed by the Department that conveys these dangers.

(3) *Deck slides.* In pools equipped with a deck slide, the warning sign shall include the words: "No sliding in water less than four feet deep and no sliding exept in a feet-first position."

(4) *Starting platforms and blocks.* In pools equipped with starting blocks, the warning sign shall include: "Starting blocks shall not be used for any purpose other than competitive swimming or swimmer-training activities."

(5) *White-water slides:* In facilities with white water slides, warnings shall be posted on a sign at the entrance to the slide tower containing the following:

(A) "Keep your hands inside of the flume."

(B) "No standing, kneeling, rotating, chain-riding, or stopping in flumes."

(C) "Sliding shall be performed only in a feet-first position."

(6) *Warm water spas:* In addition to the contents of paragraph (2), the following warning sign, with an area of at least three square feet, preceded by the word "CAUTION" shall be conspicuously posted in the vicinity of the pool at eye level:

(A) "Elderly persons and persons suffering from heart disease, diabetes, high or low blood pressure, shall not use the spa pool without medical consultation."

(B) "Unsupervised use by children is prohibited."

(C) "Do not use the spa pool while under the influence of alcohol. Persons using medications such as anticoagulants, antihistamines, vasoconstrictors, vasodilators, stimulants, hypnotics, narcotics or tranquilizers should not use the spa pool without medical consultation."

(D) "Do not use the spa pool if you are alone and the spa pool is unattended by pool staff."

(E) "Observe a reasonable time limit (e.g., 15 minutes), then shower, cool down and, if you wish, return for another brief stay. Long exposure may result in nausea, dizziness or fainting."

(F) "Emergency help can be obtained by using the telephone—dial 911."

(7) Nothing in §165.41(u) prevents the operator from posting any additional sign or adding language to required signs alerting bathers to activities that are limited or prohibited under the operator's safety plan.

(v) *Safety equipment.* The pool shall provide the safety equipment as required by §165.17.

(w) *First aid room.* Pools with a surface area in excess of four thousand square feet (4000 ft^2) shall have a readily accessible room or area designated and equipped for emergency care.

§165.42 General Requirements for Spray Grounds.

(a) *General.* All bathing establishments with a spray ground shall be designed and constructed in accordance with the requirements contained in this Code. All spray grounds shall be located at a site free from contamination and conducive to good operation, maintenance, and public safety. The designing architect or engineer shall certify the structural stability and safety of the spray grounds. The strength of the assembled and installed components and accessories to be used in and around the pools spray grounds should be such that no structural failure of any component part shall cause the failure of any other component part.

All spray grounds shall further comply with all of the following provisions:

(b) *Construction materials and finishes.*

(1) *Construction materials.* Spray pads shall be constructed of materials which are inert, stable, nontoxic, watertight and enduring. Sand or earth bottoms are prohibited.

(2) *Finish.* Spray pad surface must be slip resistant and easily cleanable surface.

(c) *Spray Pad.*

(1) *Slope.* The spray pad shall be sloped to drain. The slope shall be sufficient to prevent water collecting on the pad.

(2) *Drainage.* The size, number and locations of the spray pad drains shall be determined and specified so as to assure water does not accumulate on the spray pads. Flow through the drains to the spray pad treatment tank shall be under gravity; direct suction outlets from the spray pad are prohibited.

(3) *Valves and Piping.* Valves and piping shall be provided in the spray pad drainage system to allow for discharging spray pad water to waste prior to returning to the spray pad treatment tank.

(4) *Grating.* Openings in the grates covering the drains shall not be over one-half inch wide. Gratings shall not be removable without the use of tools.

(d) *Decks.*

(1) A continuous deck at least five feet (5') wide shall extend completely around the entire spray pad perimeter. The deck shall be of a uniform, easily cleaned, impervious material with a slip-resistant surface.

(2) *Slope.* The deck shall be sloped at least one-fourth inch per foot ($^1/_4$ in/ft) to deck drains or grades.

(3) *Drainage.* Deck drains, when used, shall be spaced and arranged so that not more than four hundred square feet (400 ft^2) of area is tributary to each drain, and drains shall not be spaced more than twenty-five feet (25 ft) apart. There shall be no direct connection between the spray pad deck drains and the sanitary sewer system or treatment tank, or between the treatment tank and recirculation system. The deck for outdoor spray ground shall be sloped away from the spray pad or to the deck drains to prevent surface runoff from entering the spray pad.

(4) *Carpeting.* Carpeting shall not be permitted on the spray pad or desk.

(5) *Hose bibbs.* At least one hose bibb shall be provided to facilitate flushing of the spray pad and deck areas and each bibb shall be provided with an anti-siphon device.

(e) *Spray Features.* Spray features should be designed and installed so as not to pose a tripping hazard, a hazard to due water velocity from the spray features, or other possible safety hazards.

(f) *Foot Showers.* Showers shall be provided at the entry to the spray pad to allow for rinsing debris from patrons' feet prior to entering the spray pad, except such showers are not required at indoor spray grounds or those within the enclosure of an aquatic amusement park. The use of foot baths is prohibited. Wastewater from the foot showers shall be discharged to an approved waste disposal system to prevent standing water on the ground surface, and/or contamination of spray ground and adjacent areas. The foot shower area shall be free of puddle water.

(g) *Spray Ground Enclosures.* All spray grounds shall be protected by a fence, wall, building, other solid barrier, or any combination thereof. A wall of a building may serve as part of the enclosure, provided that there is no direct access from the wall to the spray ground. A spray ground located on a roof, where there is no access to the roof except through doors where access can be prevented when the spray ground is unsupervised, does not require additional enclosure. All spray grounds shall be provided with an enclosure which shall have the following characteristics:

(1) No external handholds or footholds.

(2) Made of materials which are durable.

(3) At least four feet (4') in height,

(4) Maximum vertical clearance above grade of two inches (2").

(5) The entrance into the spray ground enclosure shall be equipped with a door or gate that is self-closing and has a positive self-latching closure mechanism at least forty inches (40") above grade. Doors and gates at all entrances shall be equipped with hardware that permits secure locking of the entrance and prevents access when the spray ground is not supervised.

(6) Where a chain-link fence is provided, the openings between links shall not exceed $2^{3}/_{8}$ inches and chain link twists shall extend above the upper horizontal bar. The enclosure shall have railings and posts within the enclosure, which shall be capable of resisting a minimum lateral load of one hundred fifty pounds (150 lb) applied midway between posts and at top of posts, respectively. Enclosures, fence material or fabric shall be capable of withstanding a concentrated lateral load of fifty pounds (50 lb) applied anywhere between supports on an area twelve square inches (12 in^2), without failure or permanent deformation.

(7) Where a picket-type fence is provided, space between pickets shall not exceed 4 inches and pickets shall extend above the upper horizontal bar.

(h) *Warning Signs.* A durable plate bearing the following wording in 24-point type (letters 0.25 inches in height) or more permanently marked thereon in colors contrasting with the background, shall be prominently affixed at spray pad or enclosure/entrance and in the bathhouse or bather preparation facilities at eye level containing the following:

(1) The hours that spray pad is open.

(2) The hours that spray pad use is prohibited.

(3) Individuals with diarrhea shall not use the spray pad.

(4) Spray features use recirculated water—do not drink.

(5) Children who are not toilet trained must wear a swim diaper covered by rubber pants.

(6) No animals allowed on or near spray pad.

(7) Pollution of the spray pad area is prohibited. Urinating, discharge of fecal matter, expectorating or nose blowing in any spray pad area is prohibited.

§165.43 Water Supply, Waste Water, and Sewer Connections.

(a) *Water supply.* (1) The source and quality of the water supplied to the pool and/or spray ground and all plumbing fixtures, including drinking fountains, lavatories and showers, shall be obtained from the municipal water supply or a source of potable water pursuant to §141.01 of this Code.

(2) *Cross-connection control.* The potable water supply shall be protected against inter-connection or cross-connection to any potential source of contamination, including but not limited to backflow and back-siphonage. Water introduced into the pool and/or spray pad, either directly or to the recirculation system, shall be supplied through an air gap of at least 6 inches or two times the pipe diameter, whichever is greater. In pools and/or spray pad where it is not possible to provide an air gap, the pool and/or spray water shall be protected by an approved backflow prevention device.

(3) *Drinking water fountains.* Drinking fountains shall be of a slanting jet-type with a surrounding guard and nonsubmersible opening. They shall be accessible by patrons at the pool and be supplied with adequate water pressure.

(4) *Fill spout.* When a fill spout is used to introduce water into the pool, it shall be covered so as not to create a hazard to the patrons. The open end of the fill spout shall have no sharp edges, shall not protrude more than two inches beyond the edge of the pool and shall be at least six inches above the deck level. The fill spout shall be located under the diving board when the pool is equipped with a diving board.

(b) *Waste water disposal.*

(1) The sanitary sewer system shall have sufficient capacity to serve the facility, including the bathhouse, locker rooms and related accommodations. The building drains and sewer system shall have adequate capacity to carry filter backwash flows without surcharging or flooding. Sanitary sewage and pool and/or spray pad waste water shall be discharged to the municipal sanitary sewer system whenever possible. The establishment shall obtain the waste water discharge permit or approval from the appropriate regulatory agency (for example, the New York City Department of Environmental Protection) prior to discharge. When no such sewer is available, the connection shall be made to a suitable private subsurface disposal system or other system approved by the department and such agencies having jurisdiction.

(2) The pool and/or spray pad waste water shall be discharged to the sanitary sewer system through an air gap of at least six inches (6") or two times the pipe diameter, whichever is greater, so as to preclude the possibility of backup of sewage or waste water into the pool and/or spray pad piping system.

(c) *Potable water treatment and sewage treatment facilities.* Plans for any potable water treatment or sewage treatment facilities to be constructed on-site at the bathing establishment shall be submitted for approval by the department prior to construction of such facilities.

§165.45 Water Treatment System.

(a) *General.* A water treatment system consisting of pumps, piping, filters, water conditioning and disinfection equipment, and other accessory equipment, shall be provided which will clarify, chemically balance and disinfect the pool water and/or spray pad water. The system shall be designed for a recirculation flow rate that will result in a turnover period in each pool and/or spray ground not exceeding those specified below. Construction shall comply with all other provisions of this Code regarding water and waste water.

(1) *Pools.* Each pool shall have a separate water treatment system. Pools with an approved design rate of less than those specified below shall be operated at the design rate. Construction of fill and draw pools is prohibited.

Types of Pool	**Turnover Period Shall Not Exceed**
Swimming Pool	6 hours
Physical-Therapy Pool	4 hours
Moveable Bottom Pool	4 hours
Wading Pool	2 hours
Wave Pool	2 hours
White Water Slides	1 hour
Spa Pool	30 minutes; and shall be capable of returning the spa water to a turbidity of less than 0.50 N.T.U. (Nephelometric Turbidity Units) measured within four hours following the peak bather load.

Pools constructed prior to March 31, 1973 may have an eight-hour turnover rate.

(2) *Spray Grounds.* All water provided to the spray pad shall be treated with ultraviolet light as specified in 165.45(l)(9) during spray pad operation. The spray pad treatment system shall comply with the following requirements:

(A) The water from the spray pad treatment system can only be combined/circulated with water from other pool(s) if:

(1) All the water from the spray pad is treated by ultraviolet (uv) light disinfection prior to combining/circulating with water from the other pool(s) or;

(2) UV light disinfection are provided to treat all of the water in the other pool(s). The larger flow rate resulting from the two calculations below shall be the minimum flow rate used for the treatment system design. All recirculated water must pass through both the ultraviolet light unit(s) and filters. The minimum flow rate through the treatment system shall be calculated using the two methods described below:

(i) Minimum flow rate (For ultraviolet disinfection):

Q: Minimum flow rate through the ultraviolet disinfection/filtration system (in gallons per minute)
V: Pool volume (in gallons).
ln(V): Natural log of the volume.
14.8-ln(V): Number of turnovers

(ii) Minimum filtration flow rate (for combined pool/spray pad system): The minimum filtration rate for a pool that shares water with a spray pad is specified in section 165.45(a)(2)(C)(iii). The minimum filtration flow rate shall be at least the sum of the flow rate for the pool type specified in §165.45(a)(1) and one third of the spray feature flow rate.

(B) When water supplying the spray features is removed from the spray pad treatment tank by a pump separate from the filtration/recirculation pump system, the ratio of the flow

rate of water supplied to the spray features directly from the treatment tank must not exceed 3 times the design filtered water flow rate.

(C) *Turnover Rate.* (i) When water is supplied to the spray features by a pump which removes water directly from the spray pad treatment tank independent from the spray pad treatment tank filter pump, the turnover rate for filtration shall be determined by the feature flow rate. The filtration flow rate for the spray pad treatment tank must be at least one-third of the design spray feature flow rate.

(ii) When all of the water supplied to the spray features is filtered upon removal from the spray pad treatment tank before being supplied to the spray features, a reduced pumping rate for filtration/treatment of the spray pad treatment tank water can be used when the spray features are not in operation. However, a minimum 4-hour turnover rate shall be provided.

(iii) The minimum flow rate through the filtration system for combined pool/spray pad systems shall be equal to or greater than the sum of the flow rate for the specific type pool as required by §165.45(a)(1), plus one third of the spray feature flow rate.

(b) *Equipment and storage area.* All the pumps, filters, chemical feeders and other mechanical equipment and chemicals shall be secured and protected by an appropriate enclosure or room, separate and apart from the pool. The size of the equipment room shall provide working space to perform routine operations. Clearance shall be provided for all equipment as prescribed by the manufacturers to allow normal maintenance operation and removal without disturbing other piping or equipment. Operating instructions and a schematic drawing for all equipment shall be provided in the equipment enclosure room. Adequate storage area shall be provided for chemicals and supplementary equipment. A dry above ground storage area shall be provided for facilities using calcium hypochlorite as a disinfectant. Equipment rooms shall not be used for storage of chemicals emitting corrosive fumes or for storage of other items to the extent that entrance to the room for inspection or operation of the equipment is impaired.

(c) *Hydraulics and piping system.*

(1) Materials. The recirculating piping and fittings shall be of nontoxic material, resistant to corrosion, and able to withstand operating pressures. Acceptable materials for recirculation systems are polyvinylchloride (PVC), copper, stainless steel, aluminum, cast iron or other material suitable for water supply applications.

(2) *Size.* All pipes, fittings and valves of the recirculation system shall be designed to reduce friction losses to a minimum and to carry the required quantity of water at a maximum velocity not to exceed six feet per second (6 ft/s) under suction, ten feet per second (10 ft/s) under pressure and three feet per second (3 ft/s) in gravity flow.

(3) *Plumbing color coding.* All exposed piping and valves should be identified by color code in accordance with Table 4. Where two colors do not have sufficient contrast to easily differentiate between them, a six inch band of contrasting color should be painted on one pipe at approximately thirty inch (30") intervals. The name of the liquid or gas and arrows indicating direction of flow should be shown on the pipe.

Table 4: Plumbing Color Coding Schedule

Category	Color Code
Piping	
Potable water lines	Dark blue
Filtered water	Aqua
Skimmer or gutter return	Olive green
Main drain	Black
Alum	Orange
Chlorine (gas/solution)	Yellow
Soda ash	White
Acid	Pink
Waste lines	
Backwash waste	Dark brown
Sewer	Dark gray
Deck drains	Light brown
Other	
Compressed air	Dark green
Gas	Red

(4) *Installation and draining of pipes.* All equipment and piping shall be designed and fabricated to drain completely by use of drain plugs, drain valves or other means. All piping shall be supported continuously or at sufficiently close intervals to prevent sagging. All suction piping shall be sloped in one direction, preferably toward the pump. All supply and return pipelines to the pool and/or spray pad shall be provided with valves or other means to allow the piping to be drained to a point below the frost line. Provision shall be made for expansion and contraction of pipes.

(d) *Selection of recirculation pumps.* The recirculation pump shall have adequate capacity (flow rate and pressure) to meet the design requirements of the pool and/or spray pad treatment tank, including filter backwashing and turnover rate. It shall be of a self-priming type if installed above the hydraulic gradient. A gauge which indicates both pressure and vacuum shall be installed on the pump suction header and a pressure gauge shall be installed on the pump discharge line. Gauges shall be installed as near to the pump inlet as possible.

(e) *Strainers and screens.* The recirculation system shall include suitable strainer(s) or screen(s) to prevent hair, lint, and other debris from reaching the pump and filters. The strainers shall be of rigid construction, fabricated of corrosion-resistant material and of adequate strength to withstand maximum anticipated loading including pressure. The openings shall be no greater than one-eighth inch in any dimension. The total clear area of all openings shall be at least four times the area of the connecting pipe. The strainer shall have a quick-opening cover. One spare strainer basket shall be provided for each strainer. In systems where the filter is located on the suction side of the pump, strainers are not required.

(f) *Inlets (for pools).* Wall or floor inlets shall be provided for all pools and shall be located and directed to provide distribution of treated water to facilitate the maintenance of a uniform disinfectant residual throughout the entire pool.

(1) *Number.* Wall inlets shall be spaced at a distance of no greater than twenty feet (20') apart, with one inlet within five feet (5') of each corner of the pool and one in each recessed step area or other space where water circulation might be impaired.

(2) *Location.* Wall inlets shall be located at least twelve inches (12") below the design water surface. Bottom inlets shall be uniformly spaced with a separation distance of no greater than twenty feet (20') and with rows of inlets within fifteen feet (15') of each side wall. In any pool over sixty feet (60') in width, floor inlets should be provided. These shall be flush with the floor.

(3) *Type.* Inlet fittings shall be of the adjustable rate-of-flow type. Directional flow inlets shall be used with skimmer type pools. Inlets shall not extend from the floor or wall to create a hazard.

(4) *Testing.* Dye testing (crystal violet or equivalent) should be performed to determine and adjust the recirculation pattern.

(g) *Main drains (for pools).* Every pool constructed after July 15, 1998, shall have at least two hydraulically balanced main drains to the pool filter system installed in the pool floor at the deepest point. The minimum distance between the main drains shall be three feet (3') measured from center to center of the drains. If the floor of a spa pool is insufficient for a separation distance of three feet (3'), then the separation distance shall be as great as possible. The main drains shall be connected to a single main suction pipe by branch lines and the branch lines shall not be valved so as to be capable of operating independently. Pools constructed before July 15, 1998, shall have at least one main drain installed in the pool floor at the deepest point.

(1) *Location.* The main drains shall not be spaced at more than twenty feet (20') on centers and fifteen feet (15') from side walls and shall be connected in parallel.

(2) *Grating.* The main drain shall be protected by gratings or other approved covers having an opening sufficient to restrict water velocity to less than $1^1/_2$ feet per second through the grating. The maximum width of grate opening shall be one-half inch. Gratings or drain covers shall not be removable without the use of tools.

(3) *Piping.* Each main drain shall be connected to the recirculation system. The branch pipe from each main drain shall be designed to carry at least one hundred percent (100%) of the design recirculation flow rate. The single main suction pipe to the pump shall be equipped with a valve to control total main drain flow. The suction velocity in the pipe shall not exceed six feet per second (6 ft/s).

(4) *Minimum flow.* At least thirty percent (30%) of the total recirculation rate should flow through the main drains.

(5) A hydrostatic relief valve shall be provided at each main drain for in-ground pools.

(h) *Surface skimmer systems (for pools).* A surface skimmer system, perimeter overflow system or recessed automatic surface skimmers, shall be provided on all pools and shall be designed and installed to continuously remove all floating material, surface dirt and waste water. A perimeter overflow system shall be required on all pools which have a pool width exceeding thirty feet (30'), or a surface area of over one thousand six hundred square feet (1,600 ft^2). Pools having a width of thirty feet (30') or less, or a surface area of one thousand six hundred square feet (1,600 ft^2) or less shall be provided either with perimeter overflows or skimmers. A combination of perimeter overflow systems and skimmers may also be used when approved by

the department. All overflow systems and skimmers shall be capable of continuously removing all floating material, surface dirt and waste water.

(1) *Perimeter overflow systems.* All pools shall be designed to provide continuous skimming from the pool's surface at a rate of at least one hundred percent (100%) of recirculation rate. In pools where perimeter overflow systems are provided, the following shall be met:

(A) *Design.* The perimeter overflow systems shall extend completely around the pool, except at steps or recessed ladders in the shallow portion and shall be level to a tolerance of one-eighth inch ($^1/_8$"). The gutter shall be capable of continuously removing one hundred percent (100%) of the recirculation water and return it to the filter.

(B) *Size and shape.* The gutters, drains and return piping to the surge tank shall be designed to rapidly remove overflow water caused by recirculation displacement, wave action or other causes produced from the maximum pool bathing load. Make-up water supply equipment shall be provided to maintain continuous skimming.

(C) The gutter shall be designed to serve as a handgrip and to prevent entrapment of bather's arms, legs and feet. It shall permit ready inspection, cleaning and repair.

(D) The overflow gutter outlets shall be provided with outlet pipes at least two inches (2") in diameter. The outlet fittings shall have a clean opening in the grating at least equal to 1.5 times the cross-sectional area of the outlet pipe.

(E) Drainage shall be sufficient to minimize flooding and prevent backflow of skimmed water into the pool.

(F) *Surge capacity.* All overflow systems shall be designed with an effective surge capacity of not less than one gallon for each square foot of pool surface area. Surge shall be provided within a surge tank, in the gutter or filter above the normal flow line, or elsewhere in the system. Surge tanks, gutters and filter tanks should have overflow pipes to convey excess water to waste. Surge tanks shall be provided with means for complete draining.

(2) *Skimmers.* Skimmers shall be designed and installed to prevent electrical hazards or short circuiting. Recessed automatic surface skimmers are permitted on pools where the width does not exceed thirty feet (30') and a water surface area is less than one thousand six hundred square feet (1,600 ft^2). In pools where skimmers are provided, the following shall be met:

(A) *Number.* One skimmer for each four hundred square feet (400 ft^2) of water surface area or fraction thereof shall be provided. Additional skimmers may be required to achieve effective skimming.

(B) *Location.* Skimmers shall be so located to optimize skimming of the entire water surface with minimum interference and placed so as to prevent short circuiting. Prevailing wind direction and the pool outline shall be considered in the selection of skimmer locations and the location of skimmers shall be such that the interference of adjacent inlets and skimmers is minimized.

(C) *Capacity.* The piping and other pertinent components of skimmers shall be designed for a total capacity of one hundred percent (100%) of the required filter flow of the recirculation system and no skimmer shall be designed for a flowthrough rate less than thirty gallons per minute per foot (30 gpm/ft) of weir length.

(D) *Control.* Skimmers shall have weirs that adjust automatically and operate freely and continuously with variations of at least four inches in water level. All skimmed water shall pass through an easily removable and cleanable basket or screen before encountering

control valves or entering the pump suction line. Each skimmer shall be equipped with a device to control flow.

(E) *Relief line.* Skimmers shall include a device to prevent an air lock in the suction line. If equalizer pipes are used, they shall pass an adequate amount of water to meet pump suction requirements should pool water drop below the weir level. The equalizer pipes shall be located at least one foot below the lowest overflow level of the skimmer. A valve or equivalent device that will remain tightly closed under normal operating conditions, but automatically open when the water level drops below the minimum operating level of the skimmer, shall be provided on each equalizer pipe.

(F) *Construction.* Skimmers shall be installed in the pool walls, be sturdy and be constructed of corrosion-resistant materials.

(G) *Handgrips.* Rounded coping not more than two inches (2") thick or other handgrip adjacent to the pool wall shall be provided. The handgrip shall not be more than nine inches above the minimum skimmer operating level. When the handgrip is formed by the pool deck, it shall slope away from the pool with a one-inch (1") drop in a one-foot (1') distance.

(H) *Testing.* Flotation testing should be performed to determine and adjust the recirculation system for optimum skimming.

(i) *Filtration.* The filtration system shall be designed to maintain the required pool and/or spray pad water quality. A water treatment system shall have one or more filters. Filters shall be installed with adequate clearance and facilities for ready and safe inspection, maintenance, disassembly and repair.

(1) *Sand filters.* The design filtration rate of rapid sand filters shall not exceed three gallons per minute per square foot (3 gpm/ft^2) of bed area at time of maximum head loss with sufficient area to meet the design rate of flow by the prescribed turnover rate. High-rate sand filters (pressure or vacuum) shall not exceed a filtration rate of fifteen gallons per minute per square foot (15 gpm/ft^2) of bed area. For multiple-cell rapid sand filters, the rate of filtration shall not exceed three gallons per minute per square foot (3 gpm/ft^2) of filter area. For multi-cell high-rate sand filters, filtration rate shall not exceed five gallons per minute per square foot (5 gpm/ft^2) of filter area. The sand filter system shall be equipped to backwash each filter at a rate of twelve to fifteen gallons per minute per square foot (12 to 15 gpm/ft^2) of filter bed area, or as recommended by the manufacturer. The backwash water shall be discharged to waste through a suitable air gap.

(A) *Filter media.* Sand or other media shall be carefully graded and meet the manufacturers' recommendation for pool use.

(B) *Accessories.* Influent pressure gauge, effluent pressure gauge, backwash sight glass and air relief valve shall be provided on all sand filters. Where multiple filter tanks are used a separate gauge panel shall be provided for each filter tank.

(2) *Diatomaceous earth filters.* The design filtration rate for pressure or vacuum type filters shall be no greater than 1.5 gallons per minute per square foot of effective filter area, except that a maximum filtration rate of two gallons per minute per square foot (2gpm/ft^2) may be allowed where continuous application of filter material is provided ("body slurry feed," see below). The filter and all component parts shall be of such materials, design and construction to withstand normal continuous use without significant deformation, deterioration, corrosion or wear which could adversely affect filter operation.

(A) *Precoating.* Provision shall be made to introduce a precoat of diatomaceous filter aid to evenly cover the filter elements upon placing the equipment into initial operation and

after cleaning. For pressure-type filters, the amount of filter aid shall be selected to provide at least the same protection to the filter element as that afforded by no less than 0.1 pound of diatomaceous earth filter aid per square foot of filter area.

(B) *Backwash and precoating.* Whenever the filter is backwashed or precoated, the filter piping shall be installed to permit continued recirculation of the water from the effluent back to the influent until a satisfactory clear effluent is produced prior to admitting the water into the pool, or to be discharged as waste water as an alternative.

(C) *Body or slurry feeding.* Where provided, the body feeding equipment designed for feed of filter aid to the filter influent shall be capable of applying not less than 0.1 pound of diatomaceous earth per square foot of filter area per 24 hours.

(D) *Regenerative-type filters.* Regenerative type of filters shall meet the same standards as pressure filters. Pumping by air or manual means shall be provided for and provision for visual inspection of elements shall be provided.

(E) *Accessories for pressure-type filters.* Each pressure-type filter requires a backwash sight glass, effluent pressure gauge, influent pressure gauge and air relief valve.

(F) *Accessories for vacuum-type filters.* A compound gauge which will indicate both positive and negative head shall be installed on the suction side of the pump. An adjustable high vacuum switch should be provided to prevent damage to the pump by cavitation.

(3) *Cartridge filters.* The design filtration rate for cartridge filters of depth type shall be less than three gallons per minute per square foot (3 gpm/ft^2) of cartridge cylinder surface area. For surface type, the design filtration rate for cartridge filters shall not exceed 0.375 gallon per minute per square foot (0.375 gpm/ft^2) of the pleated area of the cartridge. Influent pressure gauge, effluent pressure gauge and air relief valve shall be provided on all the filters. One complete extra set of filter cartridges shall be on hand at the facility's location.

(j) *Flow measurement and control.*

(1) *Flow measurement.* A means of continuously measuring rate of flow shall be provided in the recirculation system. For sand filters, the flow-measuring equipment shall be located where the backwash flow rate can also be determined. The indicator shall be capable of measuring at least $1^1/_2$ times the design flow rate and shall be accurate within ten percent (10%) of true flow. The indicator shall have a range of readings appropriate for the anticipated flow rates, and be installed where it is readily accessible for reading and maintenance, and with straight pipe upstream and downstream of any fitting or restriction in accordance with the manufacturer's recommendation.

(2) *Flow regulation.* Where multiple pumps or filters are provided, each unit shall have a flow-regulating device installed. For spray grounds, automatic devices shall be provided for regulating the rate of flow through the filtration system and flow to the spray features.

(k) *Water heater and thermometer (pools).* A water heater shall be installed at all indoor pools. Heaters shall be installed in accordance with the standards contained in the Building Code and the manufacturer's recommendations. Heating coil, pipe or steam hose shall not be installed in a pool. Pools equipped with heaters shall have a fixed thermometer in the recirculation line downstream of the heater and another near the outlet of the pool.

(l) *Disinfection and chemical feeders.* Pools and/or spray pad treatment shall be designed to provide for continuous disinfection of the pool and/or spray pad water with a chemical which is an effective disinfectant and which imparts an easily measured, active residual. The pools and/or spray pad shall be equipped with a chlorinator, hypochlorinator, or other disinfectant feeder or feeders. An automatic controller shall be provided for continuous monitoring and adjusting the

level of free residual disinfectant in the spray pad treatment tank. An automatic device shall be provided to deactivate chemical feeders when there is not flow in the spray pad treatment recirculation system. The feeder shall be automatic, easily disassembled for cleaning and maintenance, and capable of providing the required chemical residuals which meet the following requirements:

(1) *Design specifications.* The feeder shall be of sturdy construction and materials which will withstand wear, corrosion or attack by disinfectant solutions or vapors, and which are not adversely affected by repeated, regular adjustments or other normal use conditions. The feeder shall not allow flow of unintended chemicals or those containing foreign materials into the pool and/or spray pad treatment. The feeders shall incorporate anti-siphon safeguards so that the disinfectant cannot continue to feed into the pool and/or spray pad treatment tank, the pool piping system, the pool enclosure, spray pad treatment tank, the spray piping system or the spray pad enclosure if any type of failure of the equipment occurs.

(2) *Point of addition of disinfectant.* All chemicals shall be fed into the return line after the pump, filter and heater unless the feeder is otherwise designed and specified by the manufacturer, and approved by N.S.F. and the department.

(3) *Equipment capacity.* Feeders shall be capable of supplying disinfectant to the pool and/or spray pad treatment in a range of chlorine demand of up to 10 mg/l or equivalent.

(4) *Disinfection with bromine or solid forms of chlorine.* Where bromine or chlorine in stick or pellet form is used as a disinfectant, equipment shall be provided for feeding on continuous feed.

(5) *Disinfection with ozone.* Ozone generating equipment (OGE) is acceptable only as a supplement to chlorine or bromine disinfection system. OGE and its components shall be listed by N.S.F. or other listings that are approved by the department and meet the following design standards:

(A) The ozone concentration in the pool water shall be less than 0.10 mg/l. Off-gassing of ozone shall not result in ozone levels exceeding 0.10 mg/l in the equipment room or in the pool area. When the OGE is installed and annually thereafter, the air space within six inches (6") of the pool water level and air in the equipment room shall be tested to determine compliance with this requirement.

(B) All corona discharge OGE systems shall be vacuum systems.

(C) Backflow of pool water into OGE shall not occur.

(6) *Hypochlorinators (positive displacement pumps).* Where positive displacement pumps are used to inject the disinfectant solution into the recirculation line, the following requirements shall apply:

(A) *Feed.* Feed shall be continuous at the proper addition rate under all conditions of pressure in the recirculation system without constriction of the recirculation pump suction.

(B) *Solution tanks.* If granular calcium hypochlorite is used, two solution tanks, each with minimum capacity of one-day supply, should be provided. All chemical containers including those used with chemical feeders shall be clearly labeled regarding their contents.

(7) *Gas chlorination.* Gas chlorination is prohibited. Chlorine gas shall not be used or stored except under permit from the Fire Department and in accordance with Building Code reference standards and as approved by the Department.

(8) *Copper/silver and copper ion generators.* All copper/silver and copper ion generators shall be approved by N.S.F. or equivalent which are approved by the department and are acceptable only as a supplement to chlorine or bromine disinfection system.

(9) *Ultraviolet light disinfection units.* All spray pad treatment systems shall provide ultraviolet light disinfection systems unless the provision of an alternative treatment process has been approved by the New York State Department of Health to be capable of providing the equivalent level of reduction of cryptosporidium as the ultraviolet light disinfection system specified in this article. The ultraviolet light unit shall be located between the spray pad treatment tank pump discharge and the spray features or as approved in accordance with §165.45(a)(2)(A). The following requirement for ultraviolet light shall apply:

(A) All ultraviolet light units must be validated with dosage by an independent agency with dosage. The validation process must determine the ultraviolet light unit's disinfection performance by indicating that a dose of 40mJ/cm^2 (at end of lamp life) is achieved at a flow rate equal to or greater than the design flow rate at the setpoint intensity. The validation procedure used must have been determined by the State Department of Health to be capable of demonstrating the disinfection performance described above.

(B) For systems utilizing quartz sleeves to separate the water passing through the chamber from the ultraviolet source, the system shall be designed to permit cleaning of the lamp jackets and the sensor window or lens without mechanical disassembly. For systems utilizing polytetrafluoroethylene (PTFE) surface materials to separate the water that flows through the ultraviolet chamber from the lamps, the ultraviolet unit shall be designed to be readily accessible to the interior and exterior of the PTFE. The ultraviolet unit shall be designed to permit use of either physical or chemical cleaning methods.

(C) An accurately calibrated ultraviolet light intensity meter, properly filtered to restrict its sensitivity to the disinfection spectrum shall be installed in the wall of the disinfection chamber at the point of greatest water depth from the tube or tubes.

(D) An automatic system shall be installed to prevent flow to the features in the event the ultraviolet light intensity decreases below the validated set point.

(E) An automatic, audible alarm shall be installed to warn of ultraviolet light disinfection system malfunction or impending shutdown.

(F) The unit shall be designed to protect the operator against electrical shock or excessive radiation.

(G) Installation of the unit shall be in a protected enclosure not subject to extremes of temperature.

(H) A spare ultraviolet lamp and other necessary equipment to effect prompt repair by qualified personnel properly instructed in the operation and maintenance of the equipment shall be provided on-site.

(m) *pH control.* Mechanical feed equipment for the purpose of adding a chemical for pH adjustment shall be provided for all pools and spray grounds built. An automatic controller shall be provided for continuously monitoring and adjusting the level of pH in the spray pad treatment tank. The method of chemical addition shall protect the bather from contact with concentrated chemicals. Soda ash, caustic soda, sodium bisulfate, carbon dioxide gas, muriatic acid, or other chemicals approved for water supply use by the United States Environmental Protection Agency, as food additives by the United States Food and Drug Administration, or by the Department, shall be used to raise or lower pool water pH. The method shall provide adequate distribution of the chemical throughout the pool and distribution shall be verified by

pool water testing prior to bather exposure. Where carbon dioxide (CO_2) is used as a method of pH control, the following features shall be provided:

(1) CO_2 shall be injected into the recirculation pipe at the same point where pH adjustment solutions (i.e., acid) would normally be added. The recirculation pipe shall be of sufficient size and length to provide a minimum of five seconds contact time prior to bather contact.

(2) CO_2 cylinders shall be anchored to prevent damage. Cylinders shall be inaccessible to the general public.

(3) The manufacturers' instructions shall be followed for installation and operation of cylinders. The units shall be operated by the pool operator as specified in the pool safety plan.

(4) CO_2 cylinders shall be stored in a protective enclosure at the exterior of occupied structures. If CO_2 cylinders are provided in the interior of occupied structures, they shall be placed in a ventilated enclosure.

(n) An automatic device shall be provided to deactivate chemical feeders when there is no flow in the recirculation system.

(o) *Pool vacuum system and cleaning system (for pools).* A cleaning system should be provided to remove sludge, sediment and other accumulations from the bottom of the pool. When a vacuum system is used as an integral part of the recirculation system, hose connections shall be located in the walls of the pool at least eight inches (8") below the waterline, and at such points that the floor of the pool can be cleaned with not more than fifty feet of suction hose.

(p) *Spray Pad Treatment Tank (for spray grounds only).* The spray pad treatment tank that receives the effluent water from the spray pad shall conform to the following specifications:

(1) *Material.* The spray pad treatment tank shall be constructed of materials which are inert, corrosion resistant, nontoxic, and watertight such as concrete, fiberglass, stainless steel, etc., which can withstand all anticipated loadings under full and empty conditions.

(2) *Volume.* The volume of the water in the spray pad treatment tank shall be sufficient to assure continuous operation of the filtration system. The capacity shall be measured from six inches above the uppermost pump inlet to the bottom of the overflow waste outlet.

(3) *Controller.* An automatic water level controller shall be provided for the spray pad treatment tank.

(4) *Ready Access.* The spray pad treatment tank must be designed to provide ready access for cleaning and inspections, and be capable of complete draining. An overflow pipe to convey excess water to waste through a suitable air gap must be provided.

(5) *Backflow Prevention.* The makeup water shall be introduced into the spray pad treatment tank through an air gap or by another method which will prevent back flow and back-siphonage.

(6) *Screen.* A screen or similar device shall be provided through which all water from the spray pad shall pass before entering the spray pad treatment tank or another method/process described to provide for removal of debris on the surface layer of the spray pad treatment tank water.

(7) *Filtered/Treated Water Inlets.* An adequate number of filtered or treated water inlets shall be provided and located for complete mixing and circulation of treated water within the spray pad treatment tank.

(8) *Drain.* At least one main drain suction outlet supplying water to the spray pad treatment tank filtration system shall be provided at the deepest point in the spray pad treatment tank.

§165.47 Lighting and Electrical Installation, Ventilation and Heating Requirements.

(a) *Lighting and electrical installation.* Artificial lighting shall be provided for all bathing establishments which are to be used at night, or which do not have adequate natural lighting. The light and electrical installation shall be provided in accordance with the following:

(1) All new electrical wiring shall conform with Chapter 3 of Title 27 of the Administrative Code of the City of New York, entitled the "Electrical Code" and the National Electrical Code of the National Underwriters Laboratory, or any successor regulation or code.

(2) *Underwater.* When underwater lighting is used, not less than 8.35 lumens or 0.5 watt per square foot of pool water area shall be provided. Such lights shall be spaced to provide illumination so that all portions of the pool including the bottom, may be readily seen without glare. Overhead illumination on the water surface shall be a minimum of 30 foot-candles.

(3) If underwater lights are not provided, a minimum illumination of 50 foot-candles on the water surface and the deck shall be provided.

(4) *Decks.* A minimum of 50 foot-candles should be provided at deck area and/or spray pad.

(5) The illumination level in indoor pools and/or spray grounds shall be so designed to limit glare and excessive reflection.

(6) No overhead electrical wiring, except when secured within a ceiling, shall pass within twenty feet (20') of the pool enclosure and/or spray pad.

(7) *Emergency lighting.* All indoor pools where night swimming is permitted, and indoor pools where no natural light is present shall be provided with an adequate emergency lighting service. For outdoor pools, a portable battery powered light source is acceptable and shall be adequate and maintained to facilitate pool evacuation.

(8) *Electrical outlets.* Lighting or other electrical outlets in the deck, spray pad, shower room, and the water treatment areas shall have properly installed ground fault circuit interrupters (GFCI) at the outlet.

(9) Each underwater light shall be individually grounded by means of an adequate ground-wire with a screwed or bolted connection to the metal junction box from which the branch circuit to the individual light proceeds. Such junction boxes shall not be located in the pool deck within four feet of the pool wall.

(10) *Equipment room and storage area.* All pool equipment and chemical storage rooms shall be provided with artificial lighting sufficient to illuminate all equipment and supplies.

(11) *Sauna and steam rooms.* All electrical installation shall be in accordance with manufacturer's instruction and §165.47(a)(1).

(b) *Ventilation.*

(1) *General.* All indoor pools and/or spray grounds shall be adequately ventilated, either by natural or mechanical means. Indoor portions of a bathing establishment, including indoor pools and/or spray grounds, dressing rooms, mechanical equipment rooms, storage areas, bathhouses, shower rooms and lavatories shall be ventilated pursuant to Article 12 of the Building Code or any successor law or regulation. The ventilation system for indoor pools and dressing rooms shall be designed so the bathers are not subjected to drafts and shall minimize condensation. A minimum of two air changes per hour shall be provided for indoor pool and/or spray ground areas. Any heating units shall be kept from contact with swimmers.

Fuel burning heating equipment shall be installed and vented to the outdoors in accordance with the Building Code.

(2) *Carbon dioxide.* For facilities using carbon dioxide (CO_2) as the method of pH control, where cylinders are provided in the interior of occupied structures they shall be placed in a ventilated enclosure. A louvered fresh air intake shall be provided near the ceiling. Mechanical exhaust ventilation shall be provided at the rate of one air change every three minutes and take suction near the floor as far as practical from the door and fresh air intake. Exhausted air shall be ducted to the exterior of the building through a continuous pipe of at least $1^1/_2$ inches in diameter with the point of discharge so located as not to contaminate air inlets to any rooms or structures.

(c) *Heating.* A heating apparatus of sufficient capacity to heat the rooms to 75 degrees Fahrenheit shall be provided in dressing rooms, shower rooms, lavatories and pool areas used at times other than the summer months and shall be operated so as to maintain a minimum of 70 degrees Fahrenheit whenever the rooms are in use. Any heating apparatus used to heat the air in indoor portions of a bathing establishment shall be equipped with adequate protective guards and venting.

§165.49 Bathhouse and Bather Preparation Facilities.

(a) *General.* All bathing establishments shall have toilet facilities for each gender (as appropriate) within 300 feet and no more than one floor level above or below the bathing facility. Except where the bathing establishment is intended to serve as living units (such as hotel, motel, apartments, condominium and residents' institutions), there shall be a bathhouse and bather preparation facility for each gender provided with lockers, showers and toilets.

(b) *Location.* For all pools, the bather preparation facility shall be located so that the patrons shall pass through the bather preparation facilities to enter the pool. The layout of the preparation facilities shall be such that the patrons on leaving the dressing room pass the toilets and then the showers en route to the pool. For spray grounds, the bather preparation facility shall be conveniently located.

(c) *Materials.* Floors of the facility shall be of smooth-finished material with nonslip surfaces, impervious to moisture, easily cleanable and sloped at least one-fourth inch per foot ($^1/_4$"/ft) to drains. Carpeting shall not be permitted in shower and toilet areas. Junctions between walls and floors shall be curved and of smooth, impervious materials, free from cracks or open joints. Partitions between toilets and in dressing rooms shall be at least ten inches (10") off the floor or shall be placed on continuous raised masonry or concrete bases at least four inches high, and constructed of impervious, easily cleanable material.

(d) *Design requirements.* All bathing establishments shall have an adequate number of toilets in properly ventilated compartments. The number of toilets to be provided shall be based upon the maximum number of persons, both adults and children, who can be accommodated in a bathing establishment at any one time. A bathing establishment shall have at least one toilet for every 40 female bathers, at least one toilet and one urinal for every 60 male bathers and at least one wash basin adjacent to the toilets for every 60 persons. A minimum of two toilets for female bathers shall be provided at every facility.

(e) *Shower room.* The number of shower heads to be provided shall be based upon the maximum number of persons, both adults and children, who can be accommodated in a bathing establishment at any one time. In no case shall there be fewer than two showers. A bathing establishment with indoor bathing facilities shall have at least one shower for every 40 persons of each sex. A bathing establishment with outdoor bathing facilities shall have at least one

shower for every 80 persons of each sex. Showers in all bathing establishments shall have hot and cold running water. Showers shall be supplied with water at a temperature of at least ninety degrees Fahrenheit (90 °F) and no more than one hundred and ten degrees Fahrenheit (110 °F) and at a minimum rate of 1.5 gallons per minute and a maximum rate of 2.5 gallons per minute per shower. If shower curtains are used, they shall be of plastic or other impervious material and shall be kept clean. Heavy duty wall mounted soap dispensers (glass prohibited) shall be provided at each individual shower stall or at a rate of one dispenser per two shower heads in a common shower room containing more than one shower head.

(f) *Lavatories.* All lavatories shall be provided with liquid soap in an acceptable dispenser, paper towels or other individual towels or electrical hand-drying units and covered waste receptacles. Common use of bar soap or cloth towels shall not be permitted. Suitable sanitary napkin receptacles shall be provided in female toilet rooms. For spray grounds, a diaper changing area shall also be provided.

(g) *Lockers.* Lockers shall be set either on solid masonry or concrete bases at least four inches above the floor. Lockers shall be vented.

(h) *Hose bibbs.* Hose bibbs shall be provided within the bathhouse to enable the entire area to be flushed with a fifty foot (50') hose. Hose bibbs shall be provided with an anti-siphonage device.

§165.51 Additional Requirements for Wading Pools.

(a) Wading pools shall comply with the additional provisions of this section:

(1) *Maximum depth.* The maximum water depth for wading pools shall be twenty-four inches (24") at any point.

(2) *Enclosure.* Except for pools constructed before March 24, 1959, a fence or other effective barrier at least four feet (4') in height, to separate the wading pool from other pools, shall totally enclose the wading pool and have a gate or door with a self-closing and self-latching mechanism.

(3) After the effective date of this article, where a wading pool is constructed in proximity to a swimming or wave pool, the wading pool shall be at the shallow end of the adjacent pool.

§165.53 Additional Requirements for Spa Pools.

Spa pools shall comply with the additional provisions of this section:

(a) *Maximum depth.* The maximum water depth shall be four feet (4') measured from the waterline. The maximum submerged depth of any seat or sitting bench shall be two feet measured from the water line.

(b) *Location.* After the effective date of this Article, where a spa pool is constructed in proximity to a swimming or wave pool, the spa pool shall be at the shallow end of the adjacent pool with a minimum distance of five feet (5') between the pools.

(c) *Handholds.* All spas shall have one (1) or more suitable, slip-resistant handhold(s) around the perimeter, located no further than four feet (4') apart and not over twelve inches (12") above the water line. The handhold(s) may consist of rounded coping, ledge or decks along the immediate top edge of the spa; ladders, steps or seat ledges; and ropes or railings.

(d) *Steps.* Design of steps shall conform to the following:

(1) Step treads shall have a minimum unobstructed horizontal tread depth of 10 inches for a minimum continuous width of twelve inches (12").

(2) Riser height shall not be less than seven inches (7") nor greater than twelve inches (12"). When the bottom tread serves as a bench or seat, the bottom riser may be a maximum of fourteen inches (14").

(3) Step treads shall have slip-resistant tread surfaces.

(4) Each set of steps shall be provided with at least one handrail to fully serve all treads and risers.

(5) Seats or benches may be provided as part of the steps.

(e) *Overflow system.* An overflow system shall be provided. It shall be designed and constructed so that the water level of the spa is at the operating level of the rim or weir device during use and non-use of the spa. When surface skimmers are used, one surface skimmer shall be provided for each one hundred square feet (100 ft^2) or fraction thereof of spa surface area. Recirculation through the skimmer shall be at least 30 gpm/skimmer. When two or more skimmers are used in a spa, they shall be located to maintain effective skimming action over the entire surface area of the spa. Skimmers shall conform to §165.45.

(f) *Air induction systems.* An air induction system shall be designed to prevent water backup that could cause electrical shock hazards. Air intake sources shall not permit the introduction of toxic fumes or other contaminants.

(g) *Heater and temperature requirements.* The maximum temperature of the spa water shall not exceed 104 degrees Fahrenheit. A thermostatic control for the water shall be required. An alarm system set to ring a bell or buzzer shall be installed to warn of any temperature over 104 degrees Fahrenheit. The alarm shall ring in the spa area as well as at the attendant's normal work station. The alarm system shall turn off the heat when the alarm sounds, and not allow the heater to be reset until the water temperature has cooled below the maximum level. A manual timer shall be installed that will require resetting after 15 minutes. This timer shall be set to ring a warning bell and may control the agitation pump. The heater shall be designed pursuant to §165.45 (k). Existing pools requiring modification to comply with this paragraph shall be in compliance on and after September 1, 2001.

(h) *Emergency switch.* For all spa pools, a clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be installed readily accessible to the bathers at least five feet away, adjacent to, and within sight of the spa. Existing pools requiring modification to comply with this paragraph shall be in compliance on and after September 1, 2001.

§165.55 Additional Requirements for Physical-Therapy Pools.

Physical-Therapy pools shall comply with the additional provisions of this Section:

(a) *General.* Facilities for persons with physical disabilities shall be designed to provide safe entry and exit from the bathing establishment. Facilities for parking, path of travel, walks, ramps, drinking fountains, telephones, toilets and showers shall comply with the requirements of the Building Code.

(b) *Pool entry.* Access for persons with physical disabilities shall be at the shallow end of the pool. Pool entry shall be an eighteen inch (18") high block of steps followed by a normal set of pool steps. As an alternate, hoists or ramps are acceptable. Where removable ramps or steps are provided, the area beneath the ramp or steps shall be protected to prevent access to swimmers.

(c) *Steps and handrails.* Stair steps should have risers $5^3/_4$ inches high and a tread 12 to 18 inches wide to allow for sitting. A handrail thirty-two inches (32") high, extending eighteen inches (18") beyond top and bottom steps, shall be provided. A twenty-two inch (22") handrail shall be provided for children. A six inch (6") handrail shall aid entry for those who cannot stand.

(d) *Wheelchairs.* Wheelchairs, if immersed in a pool, shall be safe, waterproof and designed for use in the pool environment.

§165.57 Additional Requirements for Movable-Bottom Pools.

Movable-Bottom pools shall comply with the additional provisions of this section:

(a) *Design.* Hydraulic lift swimming pool floors where provided, shall be safe and maintenance-free.

(b) *Inlets.* A jet-water self-cleaning system should be provided so that the entire pool is self-cleaning. Two sets of return inlets located at two different heights should be provided to obtain adequate mixing at all times when the pool is shallow or deep.

(c) *Floor movement.* Floor movement shall be designed to minimize turbulence and provide safe entry and exit by persons with physical disabilities.

(d) *Depth signs.* A sign for pool water depth in use shall be provided and clearly lit and visible. "NO DIVING" sign shall also be provided. The control panel for changing water depth shall be located in a safe place which is accessible only to aquatic supervisory staff or pool operator.

(e) *Diving boards.* For depths other than design diving depth, the diving board shall be in an upright position and chained or secured to prevent use.

§165.59 Additional Requirements for White-Water Slides.

Pools with white-water slides shall comply with the additional provisions of this section:

(a) *General.* All slides shall be designed and constructed in accordance with the manufacturers' instruction to carry the anticipated load. All curves, turns and tunnels on the path of flume shall be designed and constructed in accordance with manufacturers' instruction.

(b) *Water slide landing area.* The landing area for a water slide flume shall comply with the following:

(1) The minimum plunge pool operating water depth shall be three feet (3'). This depth should be maintained in front of the flume for a distance of at least twenty feet (20').

(2) If the water slide flume shall end in a swimming pool, the landing area shall be divided from the rest of the swimming pool by a float line or as approved by the department.

(c) *Slide position.* The slide flume shall be perpendicular to the plunge pool back wall for a distance of at least ten feet (10') from the exit end of slide. The flume shall terminate between a depth six inches below to two inches above the pool water surface level. The distance between the side of a flume exit and a plunge pool side wall should be at least five feet (5'). The distance between sides of adjacent terminuses should be at least six feet (6').

(d) *Pump reservoir.* A pump reservoir shall be provided for the slide pump intakes. It shall be connected to the plunge pool by a weir. The minimum reservoir volume shall be equal to twice the combined flow rate in gallons per minute of all filters and slide pumps.

(e) The flume shall be designed to prevent users from becoming airborne while in the ride.

§165.61 Additional Requirements for Wave Pools.

Wave pools shall comply with the additional provisions of this section:

(a) *Perimeter overflow.* A perimeter overflow gutter system shall be provided. The gutter may be interrupted in the area where the water is less than two feet deep. The total capacity of the gutter shall be designed to carry one hundred percent (100%) of recirculation rate.

(b) *Entrapment prevention.* Any opening or connection between the wave pool and wave generator system shall be designed and constructed to prevent entrapment of bathers.

(c) *Lifeguard chairs.* Two lifeguard chairs shall be located along the deck edge on each side of wave pool where water depth is 3 feet or greater.

(d) *Emergency switches.* Switches which will stop the wave action shall be provided at each lifeguard chair.

§165.63 Sauna and Steam Rooms.

All sauna and steam rooms shall be designed and constructed in accordance with the following requirements:

(a) *Temperature control.* A sauna or steam room temperature shall be thermostatically controlled and shall not exceed 194 degrees Fahrenheit for a sauna room and 120 degrees Fahrenheit for steam room as measured at eye height.

(b) *Doors and windows.* A sauna or steam room shall be equipped with a free swinging type door or a door that swings outward freely and a window to facilitate viewing the interior of the room.

(c) *Safety.* The facility shall provide a one-hour timer to automatically disconnect all heating elements from the supply source at the end of one hour, or an attendant (meeting the definition of responsible person) who inspects the facility at a minimal interval of 15 minutes during all periods of operation of a sauna or steam room pursuant to §165.15(c), if the timer is not provided.

(d) *Timing device and temperature indicator.* A time and temperature indicator shall be provided in each sauna or steam room and shall be so installed as to be clearly visible to the patron in the sauna or steam room.

(e) *Alarm system.* An alarm system acceptable to the department shall be provided to indicate to the attendant and user any malfunction of the automatic temperature regulating control or of an electrical overloading of the equipment. The alarm system shall turn off the heat when the alarm sounds, and not allow it to be reset until the temperature has cooled to below the maximum allowable level. The operator shall be able to demonstrate the functioning of the alarm system to the department during an inspection. The alarm shall be tamper-proof. Patrons shall not be able to prevent the alarm from sounding, nor to prevent the heat from being cut off, nor to change the temperature set-point of the alarm.

(f) *Heater.* (1) The heater unit used in a sauna room shall be approved by Underwriters Laboratories, Inc., or be equipped with equivalent control and safety features acceptable to the department, provided that the installation or any alteration of such unit has been approved by the Department of Buildings.

(2) If the unit is a gas-fired system, no door openings (either metal or otherwise) to the gas heater are to be located within the enclosure of the sauna.

(g) *Steam generator.* The size of the steam generator shall be adequate for the design capacity. There shall be adequate free space for access to the generator for maintenance.

(h) *Warning signs.* A durable plate bearing the following wording, in 24 point type (letters 0.25 inches in height) or more, permanently marked thereon in colors contrasting with the background, shall be prominently affixed outside the doors of the sauna or steam room at eye level containing the following:

"Use of steam room or sauna should not exceed 30 minutes. Excessive exposure can be harmful to health. The Department of Health and Mental Hygiene recommends that persons who:

—have poor health; or

—have high blood pressure or a heart or circulatory disease; or

—are using prescription medication; or

—are pregnant
not use this facility before consulting their physician. Persons under the influence of alcohol or drugs should not use this facility."