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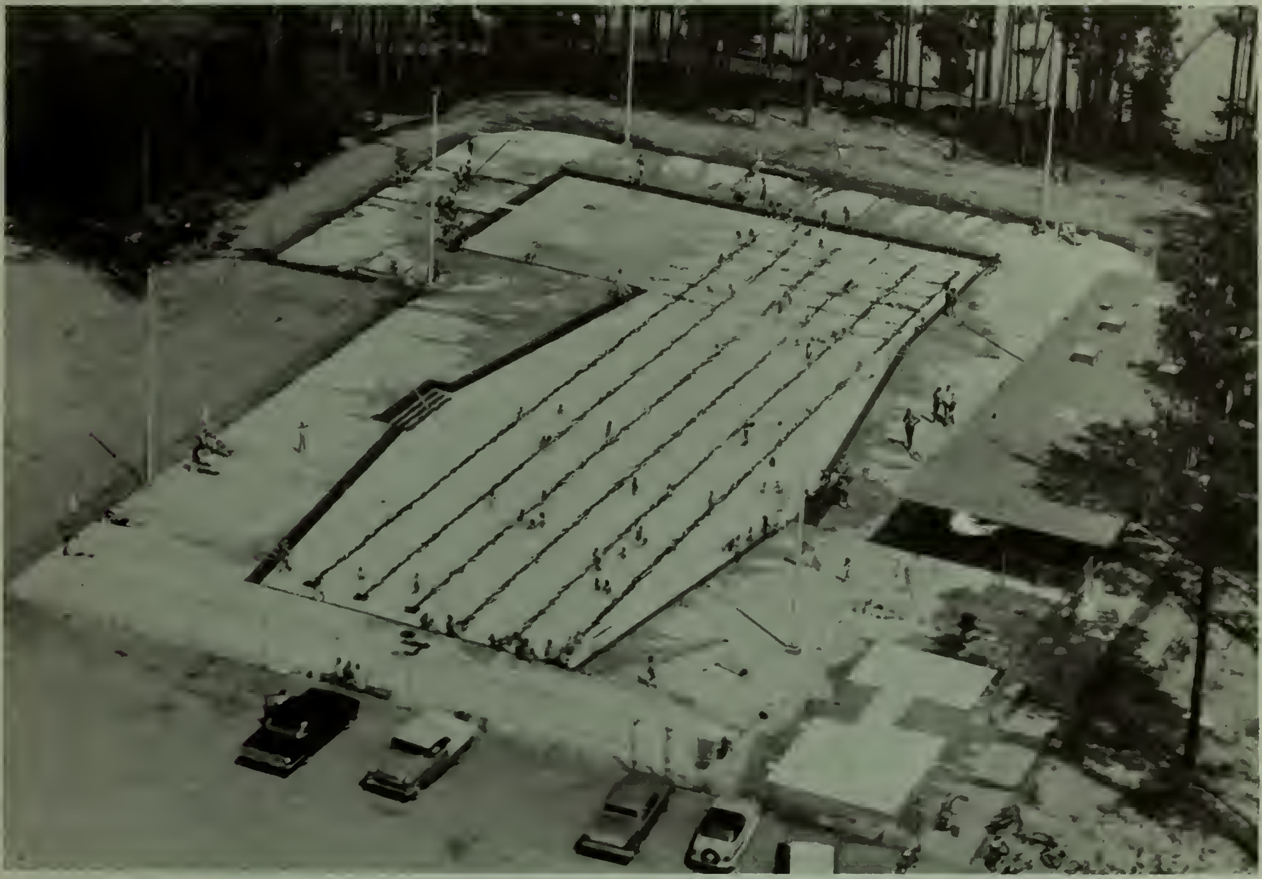
Standards for Design, Operation and Maintenance of Public Swimming Pools



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FOREWORD

THE GEORGIA RECREATION COMMISSION IN COOPERATION WITH THE GEORGIA DEPARTMENT OF PUBLIC HEALTH IS PLEASED TO MAKE AVAILABLE THE LATEST RECOMMENDED STANDARDS OF THE STATE HEALTH DEPARTMENT FOR PUBLIC SWIM POOLS. The Publication should be of significant value to all persons involved with the design, operation and maintenance of public swimming pools.

INTRODUCTION

These recommended Standards for the design, operation and maintenance of public swimming pools are for the purpose of improving swimming pool sanitation and safety. They should be helpful in equipment selection and pool operation to anyone concerned with such matters.

These Standards were prepared by a committee of representatives from health agencies, professional societies and associations, swimming pool contractors and designers.

RECOMMENDED

STANDARDS

OF THE

GEORGIA DEPARTMENT OF PUBLIC HEALTH

DIVISION OF PHYSICAL HEALTH

PUBLIC SWIMMING POOLS

ADOPTED BY THE
STATE BOARD OF HEALTH
NOVEMBER 20, 1969

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SECTION I. DEFINITIONS

The following definitions shall apply in the interpretation of these recommended standards:

1.1 Swimming Pool. Any structure containing an artificial body of water for swimming, diving, or recreational bathing.

1.2 Public Swimming Pool. Any swimming pool, other than a private residential swimming pool, for collective use by numbers of persons for swimming or bathing operated by any person as defined herein, whether he be owner, operator, lessee, licensee, or concessionaire, regardless of whether a fee is charged, and all facilities incident thereto.

1.3 Private Residential Swimming Pool. Any swimming pool, for a single family residence under the control of an individual homeowner, the use of which is limited to swimming or bathing by members of his family or their invited guests.

1.4 Person. Any individual, partnership, corporation, and association and may extend and be applied to bodies, politic and corporate.

1.5 Design Professional. An Architect or Engineer registered to practice in Georgia.

1.6 Prime Design Professional. The Design Professional responsible for the entire project.

1.7 Turnover. The ratio of the volume of water circulated to the capacity of the pool.

SECTION II. GENERAL

These recommended standards are applicable to Public Swimming Pools as defined in paragraph 1.2 above.

SECTION III. PLANS AND SPECIFICATIONS

Plans and specifications for proposed new swimming pools or for substantial alterations or reconstruction of existing pools shall be prepared by Design Professionals and bear the registration of the Design Professional

3.1 The plans shall be drawn to scale and shall be accompanied by complete specifications so as to permit a comprehensive engineering review of the plans including the piping and hydraulic details and shall include:

a. A plan and sectional view with all the necessary dimensions of both the pool and surrounding area.

b. Complete site drainage details including diversion ditches for surface run-off.

c. A piping diagram showing all appurtenances, including treatment facilities in sufficient detail, as well as pertinent elevation data, to permit a hydraulic analysis of the system.

d. Specifications shall contain details of all treatment equipment, including performance characteristics of pumps, chlorinators, chemical feeders, filters, strainers, interceptors and related equipment.

3.2 All public swimming pools shall be provided with a recirculation and filtration system except when there is a flow of water of such quality and quantity through the pool that the pool water will at all times conform to the Water Quality Standards set forth in paragraphs 27.4 and 27.5.

SECTION IV. WATER SUPPLY

The water supply for all pools, showers, lavatories, drinking fountains, and any other uses in conjunction with the pool shall be adequate in quantity and shall comply with all requirements of the Water Supply Quality Control Rules and Regulations Chapter 270-5-15 of the Department of Public Health for potable water.

4.1 The water distribution system serving the swimming pool shall be protected against backflow by means of an air gap, not less than two service pipe diameters in width, between the service pipe and the flood rim of the receiving vessel.

SECTION V. STRUCTURE DESIGN AND MATERIALS

Swimming Pools shall be designed and constructed to withstand all structural stresses including external hydrostatic pressures and flotation.

5.1 Public swimming pools shall be constructed of inert and enduring materials, non-toxic to man, which will provide a smooth and easily cleanable surface with no cracks or open joints, and shall be finished in a light color. Interior corners shall be coved with a minimum radius of 6 inches.

SECTION VI. SHAPE, SLOPE AND DEPTH

The pool shall be designed and constructed so that efficient and safe control of the pool and bathers can be accomplished.

6.1 For water depth less than five feet the slope of the pool bottom shall be uniform and shall not exceed one foot of slope in 12 feet. For depths greater than five feet the slope shall not exceed one foot in three feet.

6.2 The maximum depth at the shallow end of the pool shall not exceed three feet six inches except for competitive or special purpose pools.

6.3 The minimum depth of water in the pool shall be three feet except for special instructional pools or for restricted or recessed areas in general pools which are set aside primarily

for the use of children. Such areas when included as part of the pool shall be separated from the pool proper by means of a safety line supported by buoys and attached to the side walls.

6.4 The depth of the water at the deepest point, at the shallow end and at slope break in the pool bottom between the shallow and deep portions of the pool shall be permanently and conspicuously marked above water at pool sides and deck. Markers shall be visible at night under artificial illumination where night swimming is permitted.

6.5 Walls of a pool shall be either (a) vertical for water depths of at least six feet, or (b) vertical for distance of two feet six inches below the water level, below which the wall may be coved to the bottom with a radius equal to the difference between the depth and two feet six inches.

SECTION VII. INLETS AND OUTLETS

Inlets and outlets to pools shall be arranged so as to get effective and uniform circulation of the incoming water throughout the pool.

7.1 A sufficient number of inlets shall be provided to obtain adequate circulation and prevent dead spots. A maximum spacing of 20 feet shall be provided between inlets.

7.2 Maximum flow rates (in gpm) through various sized inlet branches shall be not more than as listed below:

Size	1"	1¼"	1½"	2"
GPM	10	20	30	50

7.3 All inlets shall be designed as adjustable orifices, or shall be individually valved, and shall be submerged not less than 24" below overflow level to reduce the escape of disinfecting agents. Inlets shall be flush with the pool wall.

7.4 Two or more outlets shall be provided at the deepest point of the pool to permit the pool to be completely drained. Each low point in the pool shall be adequately served by an outlet.

7.5 Outlets shall be spaced not more than 30 feet apart and not more than 15 feet from the side walls.

7.6 The area of all outlet openings shall be covered with gratings or other coverings which are not readily removable by bathers.

7.7 Net openings in each floor outlet covering or grating shall be at least four times the area of the discharge pipe or shall provide sufficient area so that the maximum velocity of the water passing the grate will not exceed 1½ feet per second. The width of openings in grating shall be not less than ½ inch and not more than 1 inch.

7.8 Outlets shall not connect directly to sewers but shall be installed in such manner that any sewage backing up from the sewer will overflow to waste and cannot reach the pool. Pool drainage, valves and pumps shall be sized to prevent surcharge of the sanitary sewer.

SECTION VIII. OVERFLOW FACILITIES

Positive means shall be provided for continuous removal of scum, sputum and floating debris from the pool surface. Drainage from overflow facilities shall be discharged to waste or to a make-up or surge tank.

8.1 Overflow gutters where used shall meet the following standards:

a. Overflow gutters shall extend completely around the swimming pool except at steps or recessed ladders. The lip of the gutter shall be level and shall be designed to serve as a handhold for bathers.

b. Overflow gutters shall be smooth finished and of open, roll-over or semi-recessed type, except overflow gutters for water-level deck type public swimming pools may be countersunk in a deck sloped to drain from the gutter and such gutters shall be covered by a flush mounted grating.

c. Overflow gutters shall be designed to permit ready and effective cleaning and to prevent accidental entrapment of bather's arms or legs.

d. Overflow gutter and outlet design shall provide for continuous removal of not less than 50% of the recirculated water for return to the filter or to waste.

e. Overflow gutters shall be provided with drainage outlets of two inches minimum diameter at intervals of not more than 15 feet. Outlets shall be covered by removable gratings.

8.2 Skimmers where used shall comply in all respects with appropriate standards of the National Sanitation Foundation regarding materials, design, operation and safety and shall meet the following standards:

a. Skimmers may be used in lieu of overflow gutters provided the circulation system is designed to produce substantial circulatory movement to pool water for promotion of skimming and of uniform disinfectant distribution and provided a handhold equivalent to bullnose coping with outer 2 inches not over 2 1/2 inches thick is extended around the pool perimeter not more than 9 inches above the normal water level.

b. Skimmers shall be designed for a flow through rate of at least 30 gallons per minute or 3.75 gallons per minute per lineal inch of weir and the total capacity of all skimmers in any pool shall be at least 80 percent of the required filter flow of the recirculation system. Each skimmer shall be provided with a valve for equalization of flow.

c. Skimmers shall be built into the pool wall and the weir shall be automatically adjustable to water level variations over a range of at least four inches. At least one skimmer shall be located to oppose the prevailing wind.

d. Skimmers shall be designed and located to effectively remove floating materials from the water surface of the entire pool area. At least one skimmer shall be provided for each 500 sq. ft. of water surface area or fraction thereof.

e. Skimmers shall be provided with an easily removable and cleanable screen or basket to trap large solids.

f. Skimmers shall be designed or equipped to prevent air lock in the suction line. Equalizer lines, if used, shall be sized to meet capacity requirements of the filter and pump and in no case shall be less than two inches in diameter. Equalizer lines shall be installed at least one foot below the lowest weir level and equipped with valves or devices to remain closed at normal operating conditions but automatically open when water level drops two inches below the lowest weir level.

SECTION IX. HOSE AND CONNECTIONS

Sufficient hose connections, at least 3/4 inch diameter, shall be provided for cleaning the pool, decks, walks, toilets, dressing rooms and other floored areas used in connection with pools and bathhouses.

SECTION X. STEPS, LADDERS AND HANDRAILS

Steps or ladders shall be provided at the shallow end of pools where the vertical distance from pool bottom to deck level is over two feet. Recessed steps or ladders shall be provided at the deep portion of the pool and if the pool is over 30 feet wide, such steps or ladders shall be installed on each side.

10.1 Steps shall be of non-slip design with minimum tread of 12 inches and maximum rise of 10 inches. Abrupt drops, or submerged projections into the pool shall be guarded by handrails.

10.2 Ladders shall be corrosion-resistant and shall be equipped with non-slip treads. They shall be designed to provide a hand hold and shall be rigidly installed with clearance between the ladder and the pool wall not less than three inches nor more than six inches.

10.3 Steps inserted in the pool wall shall be of easily cleanable construction, designed to drain into the pool, and shall be at least 14 inches wide and five inches deep.

10.4 Ladders within the swimming pool shall be equipped with a handrail at the top of both sides thereof, extending not less than 30" above the coping or edge of the deck.

SECTION XI. WADING POOLS

Wading pools for non-swimming children may be independent auxiliary pools or may be restricted areas of a general swimming pool.

11.1 Restricted areas of swimming pools set aside for use as wading pools shall be separated from the main body of the pool by means of a safety line attached to the side walls and supported by buoys.

11.2 Independent wading pools shall have a maximum depth of not more than 18 inches; the bottom shall be non-abrasive, shall have a non-slip finish and shall be sloped toward a drain at not more than 3 inches in 10 feet nor less than 1 inch in 10 feet. Such wading pools shall be served by a swimming pool recirculation system with turnover rates of once every two hours or less.

SECTION XII. SPRAY POOLS

Spray pools are small independent artificial pools for non-swimming children into which water is sprayed but is not allowed to pond. Spray pools may be served by the swimming pool recirculation system or by water meeting the same quality requirements from other sources.

12.1 Spray pool bottoms shall be non-abrasive, shall have a non-slip finish, and shall be sloped toward a drain at not more than 3 inches in 10 feet nor less than 1 inch in 10 feet.

SECTION XIII. DECK AREAS

A clear and unobstructed paved deck or walkway shall extend completely around the pool; deck width shall be at least five feet measured from the pool side edge, except at the deep end where there is a diving board the width shall be at least 10 feet.

13.1 Deck drainage shall be conducted away from the pool area and shall be pitched to drains designed to conduct drainage from the pool to points of disposal in a manner that will not create insanitary, hazardous, or objectionable conditions.

13.2 Decks shall have a non-slip surface and shall be of a material and finish that can be cleaned by hosing.

13.3 An effective fence or barrier, not less than 4' high, shall be provided on the outer side of the walk area to prevent spectators in street attire from traversing the pool walk and prohibit access of unattended children to the pool. Where pools serve restricted clientele only, as guest of motels or hotels, or where pools serve special purposes, as therapeutic pools, waiver of this requirement may be acceptable.

SECTION XIV. DIVING AREAS AND EQUIPMENT

The dimensions of the swimming pool in the diving area shall conform to the following table:

Official Height of Board in Meters	Minimum Water Depth at end of Board and 12 feet beyond	Minimum Pool Width at end of Board and 12 feet beyond
0.0-2.0	8½ ft.	20 ft.
2.1-3.0	10 ft.	30 ft.
over 3.0	add one foot per meter	30 ft.

14.1 At least 15 feet of free and unobstructed head room shall be provided above diving boards. A horizontal separation of 10 feet shall be provided between diving boards and sidewalks except this may be reduced to 8 feet for surface boards.

14.2 Diving board steps and ladders shall be of corrosion-resistant material, easily cleanable and of non-slip design, and kept in good repair. Handrails shall be provided at all steps and ladders leading to diving boards more than one meter above the water. Platforms and diving boards which are over one meter high shall be protected with guard railings.

SECTION XV. ELECTRICAL

All electrical materials and workmanship shall be in compliance with the electrical code applicable to the area in which the pool is to be constructed and where there is no such local code all electrical materials and workmanship shall be in compliance with the current issue of the National Electrical Code of the National Fire Protection Association.

15.1 In all installations to be used at night, pools, deck areas, dressing rooms, toilets, equipment rooms, chemical rooms, and concessions shall be lighted in accordance with the following minimum standards:

a. Underwater lighting:
Indoor - 100 lamp lumens/square foot of pool surface.
Outdoor - 60 lamp lumens/square foot of pool surface.

b. Deck lighting - foot candles maintained in service:

	Outdoor	Indoor
Exhibition	20 F.C.	50 F.C.
Recreation	10 F.C.	30 F.C.
Minimum mounting height	30 feet	20 feet

15.2 Switches, starters, panelboards and similar electrical equipment shall be located in areas not readily accessible to bathers.

15.3 Each underwater light shall be individually grounded.

15.4 No overhead electrical wiring shall pass within 20 feet of

the swimming pool enclosure.

SECTION XVI. RECIRCULATION AND FILTRATION SYSTEM

The entire recirculation and filtration system shall be designed for continuous operation and shall have sufficient capacity to clarify the entire pool volume in eight hours or less thus providing at least three turnovers daily. Where separate wading pools are provided for children, recirculation capacity shall provide for complete turnover of the wading pool content every two hours or less.

16.1 A rate-of-flow indicator, reading in gallons per minute, and a flow regulating valve shall be installed and located so that the rate of recirculation and backwash rate will be indicated and can be controlled.

16.2 All recirculation and filtration equipment that requires adjustment and maintenance, and sight-glasses, dials or meters that must be recorded, shall be readily accessible and have unobstructed clearance from walls, ceilings and other equipment, and shall be well lighted.

SECTION XVII. PUMPING EQUIPMENT

Pumps and motors shall have sufficient capacity to provide the required number of turnovers specified in Section XVI above and for providing adequate flow and head to backwash filters at rates set forth below.

17.1 Recirculation pumps shall be located below the pool water level to provide positive pressure on the suction side, or positive priming method shall be provided. A check valve shall be installed on the pump discharge line.

17.2 Requirements for filtration shall be based upon the maximum head loss developed immediately prior to backwashing the filters.

SECTION XVIII. HAIR AND LINT STRAINER

A strainer shall be provided on the suction side of the pump to prevent hair, lint, and other matter from reaching the pump and filters. Strainers shall be corrosion resistant with openings not over one-eighth inch in size providing a free flow area at least four times the area of the pump suction line and shall be readily accessible for frequent cleaning.

SECTION XIX. SUCTION CLEANER

A suction cleaner, either built-in or portable type, shall be provided for removing sediment from the pool floor and shall be capable of

reaching all parts of the pool floor. Built-in cleaners shall provide sufficient connections in the pool walls at least eight inches below the water line. Portable or jet-type units shall be provided with backflow protection for the water system.

SECTION XX. PIPING

Pool piping shall be detailed on the plans as to size and material. Buried flexible plastic pipe shall not be used. Piping shall be of non-toxic material, resistant to corrosion, and able to withstand operating pressures.

20.1 Piping shall be designed to carry the required quantity of water at a maximum velocity not to exceed six feet per second.

20.2 Piping shall be positively supported to prevent settlement which may cause air pockets or sediment traps or rupture of lines. Piping shall be provided with uniform slope and with positive means of draining water to prevent damage from freezing.

20.3 Valves shall be provided to cut off flow during cleaning or inspection of strainers and pumps.

SECTION XXI. DISINFECTANT FEEDERS

Equipment and piping used to apply disinfectrant chemicals to the water shall be of such size, design and material that they may be cleaned. Feeders shall not be cross-connected with potable water systems. Materials used for such equipment and piping shall be resistant to the action of chemicals to be used therein.

21.1 A means of disinfecting the pool water which provides a residual of disinfecting agent in the pool water shall be used. The disinfecting agent shall be subject to simple field tests for determination of concentration. Chlorinators or other disinfectant feeders shall be capable of supplying at least the equivalent of one pound of available chlorine per 8 hours per 10,000 gallons of pool capacity; rate of feed shall be adjustable and shall be indicated on the feeder.

21.2 Chlorinators or other disinfectant feeders 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 adjustments or other conditions anticipated in the use of the device. The feeder shall be easily disassembled for cleaning and maintenance and shall be designed and constructed to minimize stoppage from chemicals used. Feeder design shall include fail-safe features to prevent the disinfectant feeding directly to the pool or its components under any type of failures of equipment or maintenance.

21.3 Disinfectant feeders shall have a graduated and clearly marked dosage adjustment to provide flows from full capacity to 10% of such capacity. The device shall be capable of continuous delivery within 10% of the dosage at any setting.

21.4 When the disinfectant is introduced at the suction side of the pump, a device shall be provided to prevent air lock of the pump or recirculation system.

21.5 When chlorine gas is used the following additional features shall be provided:

a. The chlorine and chlorinating equipment including scales and one extra chlorine cylinder, shall be in a separate well-ventilated room. Floors of such rooms shall not be below ground level. The room shall be provided with separate vents at the floor which terminate out-of-doors. Louvers shall be provided at the top of the room for admitting fresh air.

b. The door of the chlorine and chlorinating equipment room shall not open to the swimming pool and shall open to the outside. A viewing window and exterior-controlled artificial illumination shall be provided so that essential performance of the equipment may be observed without entering the room.

c. Facilities shall be provided for anchoring chlorine cylinders to a wall or other support to prevent their falling over.

d. The chlorinator shall be a solution feed type, capable of delivering chlorine at its maximum rate without releasing chlorine gas to the atmosphere.

e. The chlorinator shall be designed to prevent the backflow of water into the chlorine solution container.

f. A closed gas mask cabinet, accessible without a key, shall be located outside of the chlorinator room. The cabinet shall be equipped with a gas mask designed for use in a chlorine atmosphere and of a type approved by the U. S. Bureau of Mines.

g. Installation of chlorinator equipment, and initial operation thereof, shall be under the supervision of personnel experienced with the installation and operation of such equipment.

21.6 When a hypochlorite solution is to be fed through hypochlorinator equipment, such equipment shall also provide the following additional features:

a. Feed shall be positive under all conditions of pressure in the circulation system.

b. A method shall be provided for reducing to a minimum the entry into a swimming pool of free calcium released from calcium hypochlorite.

c. A method shall be provided to prevent siphoning of hypochlorite solution when the recirculation pump and hypochlorinator are both turned off.

SECTION XXII. FILTRATION EQUIPMENT

Filters shall be capable of maintaining water in the pool which meets physical standards set forth in Section XXVII herein. Sufficient filtering area shall be provided to meet the design pump capacity as required by Section XVII herein. Filters shall comply in all respects with appropriate standards of the National Sanitation Foundation regarding materials, design, operation and safety.

22.1 A sight glass shall be installed on the waste discharge line of pressure filters to observe the progress of filter washing. The filter system shall be provided with influent and effluent pressure vacuum or compound gauges as are required to indicate the condition of the filter and gauges shall be provided with shut-off cocks. Air-relief valves shall be provided at the high point of the filter. In vacuum filter installations where the circulating pump is two horsepower or higher an adjustable high vacuum shut-off shall be provided to prevent damage to the pump by cavitation.

22.2 Rapid sand filters shall be designed for a filter rate to the swimming pool of not more than 3 gallons per minute per square foot of bed area at a time of maximum head loss with sufficient area to meet the design rate of flow required by the prescribed turnover.

a. For standard underdrain systems not less than 20 inches of screened sharp filter sand with effective size between 0.4 and 0.55 mm., and a uniformity coefficient not exceeding 1.75 supported by at least 10 inches of graded filter gravel shall be provided. A reduction in this depth or elimination of gravel may be permitted where equivalent performance and service are demonstrated.

b. At least 12 inches of freeboard shall be provided between the upper sand surface and the backwash overflow invert.

c. Each pressure filter unit shall be provided with an access opening of not less than a standard 11" x 15" manhole and cover.

d. Facilities shall be provided for adding chemicals for coagulation and pH control.

e. Filter piping shall be designed and valved to permit individual backwashing of filters to waste at not less than 15 gallons per minute per square foot of filter area, to permit isolation of individual filters for repairs while keeping others in service, to permit complete drainage,

and to permit maintenance, operation and inspection in a convenient manner.

f. Sampling cocks shall be provided to enable sample collection of pool water as it leaves the pool and as it leaves the filters.

22.3 Diatomaceous Earth filters shall be designed for a filter rate to the swimming pool of not more than 2.0 gallons per minute per square foot of effective filtering surface without continuous body feed and not greater than 2.5 gallons per minute per square foot with continuous body feed.

a. Appurtenances shall be provided for precoating with diatomaceous earth slurry. Provisions for recirculating during the precoating operation shall be made where filters permit passage of earth through elements during precoating operations. Sight glass will be required for pressure filters.

b. Where body feed is provided, the device shall be accurate (±10%) and shall be capable of continually feeding within a calibrated range, adjustable from 2 to 6 ppm, at the design capacity of the recirculating pump.

c. Filtering area, where fabric is used, shall be determined on the basis of effective filtering surfaces as created by the septum supports with no allowances for areas of impaired filtration, such as broad supports, folds or portions which may bridge.

d. Filters shall be equipped for cleaning by one or more of the following methods: back-washing, air-bump-assist backwashing, spray wash (mechanical or manual), or agitation.

e. Provision shall be made for completely and rapidly draining the filter.

22.4 High rate sand filters designed for a filter rate to the swimming pool of not more than 20 gallons per minute per square foot of filtering surface shall be acceptable provided appropriate tests and investigations by recognized independent testing laboratories indicate that such filters produce filter cycles, performance, operation, and service equivalent to those produced by filters meeting standards set forth in items 22.1 and 22.2 herein.

SECTION XXIII. MAKE-UP WATER FACILITIES

All pools shall be equipped with provisions for adding make-up water to compensate for water loss through evaporation and to waste so that a constant water level is maintained while the pool is in operation to enable continuous flow into skimmers or overflow gutters.

SECTION XXIV. DRESSING ROOMS

Dressing room floors shall be easily cleanable, non-slip finish, impervious to moisture and sloped to drain. Walls and partitions shall be of easily cleanable construction and junctions of walls and floors shall be coved.

24.1 Where bathhouses are used by both sexes at the same time, separate and clearly labeled dressing rooms separated by a tight partition shall be provided for each sex; entrances and exits shall be screened to break the line of sight.

24.2 Dressing rooms shall be well lighted to a level of at least twenty foot candles and shall be ventilated by natural or artificial means to effectively eliminate odors and condensation.

24.3 Dressing room exits to pool shall be to the non-swimming area of the pool and at least 15 feet shall be provided between the dressing room door and the pool edge.

SECTION XXV. SHOWER, TOILET AND LAVATORY FACILITIES

Shower, toilet and lavatory facilities shall be provided at all public pools in ratios set forth below except where such facilities are readily available in adjacent structures to all persons who may use the swimming pool.

25.1 Shower, toilet and lavatory facilities shall be provided in accordance with the following schedule and shall be based on pool capacity computations set forth in section XXVI herein, or on scheduled use periods as at schools.

	MALES	FEMALES
Water Closets	1/75	1/50
Urinals	1/75	
Lavatories	1/100	1/100
Showers (minimum of 3 each side)	1/50	1/50

Drinking Fountain - minimum of one to be located in swimming pool area

25.2 Toilet and shower room floors shall be constructed of impervious material with no open cracks or joints, have an easily cleanable, non-slip finish and shall pitch toward a drain. Juncture of walls and floors shall be coved.

25.3 The location of dressing rooms shall be arranged so that bathers leaving a dressing room must pass the toilets and showers en route to the swimming pool

25.4 Showers should be supplied with warm water and equipped with adjustable temperature controls to prevent scalding.

SECTION XXVI. USER LOAD COMPUTATION

In computing user loading, those portions of the swimming pool five feet or less in depth shall be designated as "non-swimmer" areas and those portions over five feet in depth shall be designated as "swimmer" areas.

26.1 To compute swimmer and bather capacity, swimming pool areas shall be determined as follows:

a. Ten square feet of pool water surface area shall be provided for each non-swimmer expected at time of maximum load.

b. Twenty-four square feet shall be provided for each swimmer expected at time of maximum load.

c. Three hundred square feet 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 area of the swimming section.

SECTION XXVII. DISINFECTION AND WATER QUALITY

The chemical, physical, and bacteriological quality of pool water shall be such that it is sanitary, clear, and safe for swimming.

27.1 Swimming pools when open or in use shall be continuously disinfected by a chemical which imparts an easily measured free available residual effect. When chlorine is used without a stabilizing chemical such as cyanuric acid and the source of residual chlorine is from elemental chlorine or a hypochlorite solution, a free chlorine residual of at least 0.4 ppm at pool pH shall be maintained throughout the pool. If other halogens are used, residuals of equivalent disinfecting strength shall be maintained. A testing kit for measuring the concentration of the disinfectant, accurate within 0.1 ppm shall be provided at each swimming pool.

Where cyanuric acid is used as a stabilizing agent of residual chlorine, or if the source of residual chlorine is from a chlorinated cyanurate, a chlorine residual of at least 1.0 ppm shall be maintained with cyanuric acid residuals of 25ppm and at least 1.5 ppm chlorine shall be maintained with cyanuric acid residuals of 50 ppm. A testing kit for measuring the concentration of cyanuric acid, accurate within 5.0 ppm shall be provided at each swimming pool using cyanuric acid or chlorinated cyanurates.

27.2 Other disinfecting materials or methods shall be acceptable after they have been adequately demonstrated to provide a satisfactory residual effect which is easily measured and to otherwise be equally as effective under conditions of use as the chlorine concentration required herein, and not be dangerous to public health, create objectionable physiological effects, or impart toxic properties to the water.

27.3 The swimming pool water shall be maintained in an alkaline condition as indicated by a pH of not less than 7.2 and not over 8.2 A pH testing kit accurate within 0.2 pH unit shall be provided at each swimming pool. The total alkalinity of the water shall be at least 50 ppm.

27.4 The water shall have sufficient clarity at all times so that a black disc, three inches in diameter, is readily visible when placed on a white field at the deepest point of the swimming pool.

27.5 Not more than 15% of the samples covering any considerable period of time shall either (a) contain more than 200 bacteria per milliliter, as determined by the standard (35°C), agar plate count, or (b) show positive test (confirmed test) for coliform organisms in any of the five 10 milliliter portions of a sample or more than 1.0 coliform organisms per 50 ml. when the membrane filter test is used. All samples shall be collected, dechlorinated, and examined in accordance with the procedures outlined in the latest edition of Standard Methods for the Examination of Water and Wastewater (APHA).

27.6 Chemicals used for algae control and in the control of water quality shall be demonstrated as imparting no toxic properties to the water.

SECTION XXVIII. OPERATION AND MAINTENANCE

Every public swimming pool shall be under the direct close supervision of a trained pool operator competent to operate the swimming pool in full compliance with all requirements hereof relating to pool operation and maintenance.

28.1 The operator of each pool open for use shall keep daily records of pool operations including total bather load, peak bather load, volume of fresh water, filter influent and effluent pressure gauge readings, rate of flow meter readings, amount of chemicals used, disinfectant residuals, pH readings, algae control measures taken, alkalinity, maintenance and malfunctioning of equipment including cleaning of filters, and such additional

records as may be required. Such records shall be kept available for inspection by the Health Department for a period of at least one year.

28.2 Routine daily and weekly operating procedures shall be posted in a location frequented by the operator. Manufacturer's instructions for operation and maintenance of mechanical and electrical equipment shall be kept on the premises and available for the operators use.

28.3 Pumps, filters, disinfectant and chemical feeders, flow indicators, gauges, and all related parts of the pool water purification system shall be kept in operation whenever the pool is available for use, and at such additional periods as may be necessary to maintain the water in the pool in a clear and disinfected condition.

28.4 Floating scum, sputum and debris shall not be allowed to accumulate in the pool. The sides and bottom of pools, decks, and other surfaces shall be kept free of slime and algae to prevent unnecessary slipperiness and danger of accidents or drownings, and shall be cleaned as often as necessary to keep in a clean condition.

28.5 Where chlorine gas is used, a valve protection hood shall be kept in place on the cylinder except when the cylinder is connected to a chlorinator. A valve stem wrench shall be maintained on chlorine cylinders connected to chlorinators so that the supply can be shut off quickly in emergencies.

28.6 Replacement canisters for the chlorine gas mask shall be provided and a record kept of all gas mask usage to insure that the mask will be serviceable when needed. The gas mask, replacement canisters, and record of usage shall be kept in a closed container located outside the chlorinator room.

28.7 Dressing rooms, showers, toilet rooms and fixtures, equipment rooms and equipment, concession and spectator areas, and all parts of the pool enclosure shall be kept clean and in good repair. Walls, ceilings and equipment shall be painted as often as necessary to minimize deterioration. The entire pool area shall be maintained in a sanitary condition and free of litter and vermin.

28.8 Soap shall be provided at showers and lavatories.

28.9 Bathing suits and towels provided by the pool management shall be laundered and sanitized after each use.

SECTION XXIX. BATHER SUPERVISION

One or more attendants shall be on duty at all times the pool is open for use and shall enforce all rules of safety and sanitation. At least one trained first aider competent in aid and rescue methods and in use of artificial respiration and other resuscitative measures shall be among pool personnel.

29.1 No bather shall be permitted to enter a swimming pool or swimming pool enclosure unless a life guard is present, except where pools serve restricted clientele only, such as motels, apartment houses, or similar installations. In such cases where no life guard service is provided a warning sign shall be placed in clear view and shall state in clearly legible letters at least four inches high "Warning - No Life Guard on Duty". In addition the sign shall also state "Children should not use pool without an Adult in attendance." Unattended solo bathing shall be prohibited at all pools.

29.2 Visitors and spectators shall be kept separated from spaces used by bathers.

29.3 No food, drink, bottles, or wrappers shall be permitted in the immediate area of the swimming pool or on the decks surrounding the pool.

29.4 Bathers shall take a cleaning shower, using warm water and soap, before entering the pool and before returning to the pool following use of the toilet.

29.5 Persons having an infectious or communicable disease shall be excluded from public swimming pools. Persons with open blisters or cuts shall be warned of infection and advised not to use the pool.

29.6 No running, boisterous or rough play, except supervised water sports, shall be permitted in the pool enclosures, dressing rooms, shower rooms, or other areas.

29.7 Spitting, spouting of water, blowing the nose, etc., in the swimming pool shall be strictly prohibited.

29.8 Suitable placards embodying provisions of this Section shall be conspicuously posted in the swimming pool room or enclosure and in the dressing rooms and offices at all swimming pools.

SECTION XXX. SAFETY PRECAUTIONS

Life saving and emergency first aid equipment and facilities shall be provided at all swimming pools. A telephone and list of emergency numbers including physicians, ambulance and hospital should be provided.

30.1 A life line shall be provided at or near the break of grade between the shallow and deep portions of a public swimming pool with its position marked with colored floats at not greater than 5 foot spacing. Life line shall be 3/4" minimum diameter and its terminals shall be securely anchored and of corrosion resistant material and of type which will be recessed or have no projection which will constitute a hazard.

30.2 Every swimming pool shall be equipped for safety and rescue with one or more light but strong poles (bamboo or other), or shepherds' crook, having a blunt end and which is not less than 16 feet of length for making reaching assists or rescues; and

30.3 Every pool shall be equipped with one or more throwing buoys of not more than 18 inches in diameter with 1/4" line attached at least equal in length to the maximum width of the pool plus 10 feet.

30.4 Lifesaving equipment described in paragraphs 30.2 and 30.3 above shall be mounted in conspicuous places near the pool edge, ready of access, its function plainly marked, kept in repair and ready condition, and bathers or others shall not be permitted to tamper with it, use it for any purpose other than its intended use, or remove it from its established location.

30.5 Every swimming pool shall be equipped with a first aid kit which shall include the following: wash cloth, germicidal soap or detergent, sterile gauze, absorbent cotton, triangular bandages, scissors, adhesive plaster, bandages of various widths, aromatic spirits of ammonia, blankets, sterile cotton applicators and four splints 1/8" to 1/4" thick, 3½" wide and 15" to 18" long. The first aid kit shall be kept filled and readily accessible for emergency use. A stretcher or backboard and respirator is advisable for issolated areas and for large pools.

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Youth Serving Agencies
Churches
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Individuals
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Commercial Recreation
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Rural, Town and County Units
Institutional Homes for Children and Adults
Penal and Correctional Institutions

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2. Dance
3. Drama
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