

**SOUTHERN
STANDARD
SWIMMING POOL CODE
1999 EDITION**

SBCCI

**STANDARD
SWIMMING POOL CODE
1999 EDITION**



FIRST PRINTING

COPYRIGHT© 1999

**BY
SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC.
900 MONTCLAIR ROAD
BIRMINGHAM, ALABAMA 35213-1206
205-591-1853
PRINTED IN U.S.A.**

NOTE: The SBCCI Standard Codes are designed for adoption by state or local governments by reference only. Jurisdictions adopting them may make necessary additions, deletions and amendments in their adopting document. Incorporation of any part of the SBCCI Standard Codes in codes published by states, local governments, regulatory agencies, individuals or organizations is expressly prohibited. When your jurisdiction has adopted one or more of the SBCCI Standard Codes, please send a copy of the adopting document to the SBCCI headquarters office.

FIRST PRINTING

COPYRIGHT© 1999

**BY
SOUTHERN BUILDING CODE CONGRESS INTERNATIONAL, INC.
900 MONTCLAIR ROAD
BIRMINGHAM, ALABAMA 35213-1206
205-591-1853
PRINTED IN U.S.A.**

All rights reserved. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or by an information storage and retrieval system, without advance permission in writing from the publisher. For information contact: Chief Executive Officer, Southern Building Code Congress International, Inc., 900 Montclair Road, Birmingham, Alabama 35213-1206.

PREFACE

The purpose of the Standard Swimming Pool Code is to provide for the protection of the public health, welfare and safety by prescribing minimum standards for the design, construction or installation, repair or alterations of swimming pools, public or private and equipment related thereto. This code requires a permit and inspection; therefore, it provides for the administration and enforcement of the standards set forth herein.

Broken vertical bars in the margin indicate 1997 edition.

Open stars in the margin indicate deletions from the 1997 edition.



METRIC CONVERSIONS

	MULTIPLY	BY	TO GET
Length	inches ft	25.4 0.3048	mm m
Area	sq in sq ft	645.16 0.0929	mm ² m ²
Volume	cu in cu ft gal	0.01639 28.3169 3.785	L L L
Mass	lb	0.4536	kg
Mass/unit length	plf (lb/ft)	1.4882	kg/m
Mass/unit area	psf (lb/sq ft)	4.882	kg/m ²
Mass density	pcf (lb/cu ft)	16.02	kg/m ³
Force	lb	4.4482	N
Force/unit length	plf (lb/ft)	14.5939	N/m
Pressure, stress modulus of elasticity	psi psf (lb/sq ft)	6.895 47.88	kPa Pa
Second moment of area	in ⁴	416,231	mm ⁴
Section modulus	in ³	16,387.064	mm ³
Temperature	°F-32 °F + 273.15	5/9 5/9	°C K
Energy, work, quantity of heat	kWh Btu ft • lb (force)	3.6 1055 1.3558	MJ J J
Power	ton (refrig) Btu/s hp (electric) Btu/h	3.517 1.0543 745.7 0.2931	kW kW W W
Thermal conductance (U value)	Btu/ft ² • h • °F	5.6783	W/m ² •K
Thermal resistance (R value)	ft ² • h • °F/Btu	0.1761	m ² • K/W
Flow	gpm cfm	0.0631 0.4719	L/s L/s
Illuminance	footcandle (lm/sq ft)	10.76	lx (lux)
Velocity (speed)	mph	0.447	m/s
Plane angle	°(angle)	0.01745	rad

THE STANDARD CODES

Standard Amusement Device Code
Standard Building Code
Standard Existing Buildings Code
Standard Fire Prevention Code
Standard Gas Code
Standard Housing Code
Standard Mechanical Code
Standard Plumbing Code
Standard Swimming Pool Code
Standard Unsafe Building Abatement Code

THE INTERNATIONAL CODES

International Plumbing Code
International Mechanical Code
International Private Sewage Disposal Code
International Energy Conservation Code
International Fuel Gas Code
International One-and Two-Family Dwelling Code
International Property Maintenance Code
International Zoning Code

CODE-RELATED PUBLICATIONS

Standard for Determining Impact Resistance from Windborne Debris
Standard for Proscenium Curtains
Standard for Existing High Rise Buildings
Standard for Floodplain Management
Standard for Soil Expansion
Standard for Sound Control
Test Method for Textile Wall Covering
Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles
Standard for Hurricane Resistant Residential Construction
Standard Building Code Commentary
Standard Gas Code Commentary
Standard Mechanical Code Commentary
International Plumbing Code Commentary
International Mechanical Code Commentary

EDUCATION PUBLICATIONS

Building Official Management
Building Principles and Code Applications
Commercial Electrical Principles and Codes Applications
Hurricane Resistant Residential Construction Principles and Code Applications Manual
Legal Aspects of Code Administration
Mechanical Principles and Code Applications
Plumbing Principles and Code Applications
Rehabilitation and Housing Principles and Code Applications
Residential Building Principles and Code Applications
Residential Electrical Principles and Code Applications
Residential Plumbing Principles and Code Applications
Residential Mechanical Principles and Code Applications

TABLE OF CONTENTS

CHAPTER 1 ADMINISTRATION

101	TITLE AND SCOPE	1
102	ORGANIZATION	1
103	RIGHT OF ENTRY	1
104	DANGEROUS CONSTRUCTION	1
105	PERMITS	2
106	INSPECTIONS	3
107	VIOLATIONS AND PENALTIES	3
108	VALIDITY	3

CHAPTER 2 DEFINITIONS

201	GENERAL	5
202	DEFINITIONS	5

CHAPTER 3 MECHANICAL REQUIREMENTS

301	GENERAL	7
302	APPROVALS	7
303	ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION	7
304	ENGINEERING DESIGN	7
305	PUMPS	7
306	VALVES	8
307	WATER SUPPLY	8
308	WASTE WATER DISPOSAL	8
309	SEPARATION TANK	8
310	TESTS	8
311	DRAIN PIPING	8
312	WATER HEATING EQUIPMENT	9
313	GAS PIPING	9
314	ELECTRICAL	9
315	ENCLOSURE	9
316	LADDERS AND STEPS	10
317	FINAL INSPECTION	10

CHAPTER 4 PRIVATE POOLS

401	GENERAL	11
402	SAND FILTERS	11
403	DIATOMITE TYPE FILTERS	11
404	POOL FITTINGS	11
405	EQUIPMENT FOUNDATIONS AND ENCLOSURES	11
406	ACCESSIBILITY AND CLEARANCES	11

CHAPTER 5 PUBLIC POOLS

501	GENERAL	13
502	INLETS AND OUTLETS	13
503	POOL SKIMMERS AND OVERFLOW GUTTERS	13
504	CIRCULATION AND PURIFICATION SYSTEM	13
505	RAPID SAND PRESSURE FILTERS	14
506	DIATOMACEOUS EARTH FILTERS	14
507	OTHER FILTERS	14
508	WADING POOL	14

CHAPTER 1 ADMINISTRATION

101 TITLE AND SCOPE

101.1 Title

The provisions embraced within the following chapters and sections shall constitute and be known and may be cited as the “Standard Swimming Pool Code” hereinafter referred to as “this code.”

101.2 Scope

101.2.1 The provisions of this code apply to the protection of the public health, safety and welfare by prescribing minimum standards for the design, construction or installation, repair or alterations of swimming pools, public or private, and equipment related thereto; requiring a permit and inspection therefor; providing the administration and enforcement of the standards set forth herein.

101.2.2 The provisions of this code shall not be held to deprive any Federal or state agency, or any applicable governing body having jurisdiction, of any power or authority which it had on the effective date of this act or of any remedy then existing for the enforcement of its orders, nor shall it deprive any individual or corporation of its legal rights as provided by law.

102 ORGANIZATION

102.1 Administrative Authority

Whenever the term “Administrative Authority” is used in this code it shall be construed to mean the building official or his authorized representative.

102.2 Department Having Jurisdiction

Unless otherwise provided for by law, the office of the administrative authority shall be part of the building department.

102.3 Duties Of The Administrative Authority

The administrative authority shall maintain public office hours necessary to efficiently administer the provisions of this code and amendments thereto and shall perform the following duties:

1. Require submission of, examine and check plans, specifications, drawings, descriptions, or diagrams where necessary to show clearly the character, kind and extent of swimming pool work covered by applications for a permit and upon approval thereof shall issue the permit applied therefor.
2. Collect all fees for permits issued as provided by this code.

3. Enforce the provisions of this code and inspect all swimming pool work authorized by permit to assure compliance with provisions of this code or amendments thereto.
4. Issue upon request a Certificate of Approval for any work approved.
5. Reject all work done or materials used or being used which do not comply with the provisions of this code and amendments thereto.
6. Order changes in workmanship or materials or both essential to obtain compliance with all provisions of this code.
7. Investigate any construction or work regulated by this code and issue such notices and orders as provided in 104 and 105.2.
8. Keep a record of all business of the department. The records of the department shall be open to public inspection.
9. Transfer all fees collected by him to the proper authority provided by law to receive such funds.

103 RIGHT OF ENTRY

The administrative authority shall have the right of entry, during business hours, to inspect any and all swimming pools or portion thereof in the performance of his duties.

104 DANGEROUS CONSTRUCTION

104.1 Issuance Of Order

Whenever upon investigation any construction or work regulated by this code is deemed hazardous, dangerous, unsafe or a menace to life, health or property or otherwise in violation of this code, the administrative authority shall order any person, firm or corporation, using or maintaining such condition or responsible use or maintenance thereof to discontinue the use of or maintenance thereof or to repair, alter, or change same as may be necessary for the protection of life, health or property. Such order shall be in writing to the owner, agent or person responsible for the premises on which such condition exists and shall specify a reasonable date or time when such order shall be complied with.

104.2 Compliance With Order

Refusal, failure or neglect to comply with the notice or order specified in 104.1 shall be considered a violation of this code.

105 PERMITS

105.1 Permit Required

105.1.1 No swimming pool installation, alteration or repair work shall be commenced until a permit shall first have been obtained from the administrative authority.

105.1.2 The administrative authority shall act upon an application for a permit with plans as filed, or as amended, without unreasonable or unnecessary delay. A permit issued shall be construed to be a license to proceed with the work and shall not be construed as authority to violate, cancel, alter, or set aside any of the provisions of this code, nor shall such issuance of a permit prevent the building official from thereafter requiring a correction of errors in plans or in construction, or of violations of this code.

105.1.3 Any permit issued shall become invalid unless the work authorized by it shall have been commenced within 60 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 60 days after the time the work is commenced; provided that, for cause, one or more extensions of time, for periods not exceeding 60 days each, may be allowed in writing by the building official. (See fee schedule in 105.6.)

105.1.4 No person shall permit any other person to do or cause or permit to be done any swimming pool work under any permit secured by such persons, except as permitted by state law.

105.2 Authority To Stop Work

Whenever any construction regulated by this code is being, or has been done contrary to the requirements of this code, the administrative authority may order all work stopped on that portion of the installation of which such violation has occurred. Every such order shall be in writing, stating the nature of the violation and fixing a time limit for compliance. No person shall do any work on any portion of the equipment regulated by this code after a stop order has been issued, except in conformance with directions of the administrative authority.

105.3 Application For Permit

105.3.1 Any person who desires a permit to install, alter or repair a swimming pool shall make application on forms provided for that purpose. He shall describe the work to be done and the location, ownership, occupancy and use of the premises in connection therewith. The administrative authority may require plans, specifications or drawings and such other information as he may deem necessary and as prescribed in 105.1.

105.3.2 When required by the building official, two or more copies of specifications, and of drawings drawn to scale with sufficient clarity and detail to indicate the nature and character of the work, shall accompany every application. Such drawings and specifications shall contain information, in the form of notes or otherwise, as to the quality of materials, where quality is essential to conformity with this code. Such information shall be specific, and this code shall not be cited as a whole or in part, nor shall the term "legal" or its equivalent be used, as a substitute for specific information. Such information shall include these items in 105.3.3, 105.3.4, and 105.3.5.

105.3.3 Plot plans with site grades, dimensioned, and drawn to a scale of not less than 1/8 in/ft and showing at least the following:

1. Property lines, easements, right-of-way of record and overhead utilities adjacent to pool area or over the property.
2. Existing structures, fencing, retaining walls, and other relevant characteristics adjacent to pool area.
3. Proposed pool shape, dimensioned and located to show setbacks, side yards, and clearance from existing structures adjacent to pool area.
4. Proposed mechanical equipment pad, dimensions and location as to set backs and side yards.
5. All deck equipment items, if included.
6. Proposed deckwork configuration, showing its anticipated drainage.
7. Anticipated overall drainage of the pool site.

105.3.4 A structural plan showing at least the following:

1. Type of construction, whether gunite, poured concrete, prefabricated, or other.
2. Pool dimensions, including the depth, and adequate cross-sections drawn to scale.
3. Computations, stress diagrams, and other data sufficient to show the correctness of the plans; including the reinforcing steel schedule and detail.
4. A statement by the applicant concerning the anticipated nature of the soil under and around the pool structure.
5. Interior finish details.

105.3.5 A mechanical plan showing at least the following:

1. Volume, system flow rate in gallons per minute, and turnover in hours.
2. Type and size of filtration systems and means of waste disposal.
3. Type and size of pool heater, if included, including the method of venting and provisions for combustion air.

4. Pool piping layout with all sizes shown and types of material to be used, and showing the location of the main outlet, surface skimmers, and inlets.
5. Rated capacity of the pool pump in gpm at the design head with the size and type of motor indicated and identified as self-priming or straight centrifugal.
6. Means of adding makeup water.
7. Size, length from source to heater and routing of the gas line.

105.3.6 All plans submitted shall be on substantial paper and shall show the name and address of the person under whose supervision the plans were prepared.

105.4 Issuance Of Permit

105.4.1 If the administrative authority determines that the plans, specifications, drawings, descriptions, or information furnished by the applicant is in compliance with this code, he shall issue the permit upon payment of the required fee. Permits shall be obtained for all of the electrical, plumbing, related utility connections and heating work prior to issuance of the building permit for the pool structure.

105.4.2 Requirements in 105.3 shall not void any requirements by any other department having jurisdiction.

105.5 Cost Of Permit

105.5.1 Every applicant for a permit to install, alter or repair a swimming pool system or part thereof, shall state in writing on a form furnished for that purpose, the character of work proposed, together with such other information as may be required.

105.5.2 Every applicant shall pay for each permit at the time of making application a fee in accordance with 105.6 and at the rate provided for each classification shown therein.

105.5.3 Any person who shall commence any swimming pool work for which a permit is required by this code without having first obtained a permit therefor shall pay double the permit fee fixed by the section for such work, provided, however, that this provision shall not apply to emergency work required by the administrative authority for the protection of the public health, safety and welfare. In all such cases a permit shall be obtained as soon as it is practical to do so.

105.6 Schedule Of Fees

For each swimming pool:

Public pool	\$40.00
Private pool	25.00
Pool filling system, including back-flow prevention, each	1.50
Each water heater and/or vent	1.50
Gas piping system, each	1.50
Replacing of filter	3.00
Replacing of piping	3.00
Miscellaneous replacements	3.00
Backwash receptor	1.50

106 INSPECTIONS

106.1 Inspection Required

All swimming pool installations or alterations including equipment, piping and appliances shall be subject to inspection by the administrative authority to insure compliance with all the requirements of this code.

106.2 Notification

It shall be the duty of the person doing the work authorized by the permit, to notify the administrative authority, that said work is ready for inspection. The administrative authority shall have 48 hours in which to make such inspection.

107 VIOLATIONS AND PENALTIES

Any person, firm or corporation violating any of the provisions of this code shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punishable within the limits and as provided by state laws.

108 VALIDITY

If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this code.

CHAPTER 2 DEFINITIONS

201 GENERAL

201.1 Tense, Gender And Number

For the purpose of this code, certain abbreviations, terms, phrases, words, and their derivatives, shall be construed as set forth in this section. Words used in the present tense include the future. Words in the masculine gender include the feminine and neuter. Words in the feminine and neuter gender include the masculine. The singular number includes the plural and the plural number includes the singular.

201.2 Words Not Defined

Words not defined herein shall have the meanings stated in the Standard Building Code, Standard Mechanical Code, Standard Plumbing Code, Standard Gas Code or Standard Fire Prevention Code. Words not defined in the Standard Codes shall have the meanings stated in the Webster's Ninth New Collegiate Dictionary, as revised.

202 DEFINITIONS

ABOVEGROUND/ONGROUND POOL—see Swimming Pool.

ADMINISTRATIVE AUTHORITY—the individual official, board, department, or agency established and authorized by a state, county, city or other political subdivision created by law to administer and enforce the provisions of the swimming pool code as adopted or amended.

APPROVED—accepted or acceptable under an applicable specification stated or cited in this code, or accepted as suitable for the proposed use under procedures and power of the administrative authority.

APPROVED TESTING AGENCY—an organization primarily established for the purpose of testing to approved standards and approved by the administrative authority.

BACKWASH PIPING—see Filter Waste Discharge Piping.

BARRIER—a fence, wall, building wall or a combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

BODY FEED—filter aid fed into a diatomite-type filter throughout the filtering cycle.

CARTRIDGE FILTER—a filter using cartridge type filter elements.

CHEMICAL PIPING—piping which conveys concentrated chemical solutions from a feeding apparatus to the circulation piping.

CIRCULATION PIPING SYSTEM—piping between the pool structure and the mechanical equipment. Usually includes suction piping, face piping and return piping.

COMBINATION VALVE—a multipart valve intended to perform more than one function.

DESIGN HEAD—total head requirement of the circulation system at the design rate of flow.

DIATOMITE (DIATOMACEOUS EARTH)—a type of filter aid.

DIATOMITE TYPE FILTER—a filter designed to be used with filter aid.

FACE PIPING—piping, with all valves and fittings, which is used to connect the filter system together as a unit.

FILTER—any apparatus by which water is clarified.

FILTER AID—a non-permanent type of filter media or aid such as diatomite, alum, etc.

FILTER CARTRIDGE—a disposable or renewable filter element which generally employs no filter aid.

FILTER ELEMENT—that part of a filter which retains the filter media.

FILTER MEDIA—fine material which entraps the suspended particles and removes them from the water.

FILTER RATE—average rate of flow per square foot of filter area.

FILTER ROCK—specially graded rock and gravel used to support filter sand.

FILTER SAND—a specially graded type of permanent filter media.

FILTER SEPTUM—that part of the filter element in a diatomite type filter upon which a cake of diatomite or other non-permanent filter aid may be deposited.

FILTER WASTE DISCHARGE PIPING—piping that conducts waste water from a filter to a drainage system.

Connection to drainage system is made through an air gap or other approved methods.

FRESH WATER—those waters having a specific conductivity less than a solution containing 6000 ppm of sodium chloride.

HIGH RATE SAND FILTER—a sand filter designed for flows in excess of 5 gpm per sq ft.

HOT TUB—see Swimming Pool.

INGROUND POOL—see Swimming Pool.

INLET FITTING—fitting or fixture through which circulated water enters the pool.

MAIN OUTLET—outlet at the deep portion of the pool through which the main flow of water leaves the pool when being drained or circulated.

POOL—see Swimming Pool.

POOL DEPTHS—the distance between the floor of pool and the maximum operating water level.

POOL PLUMBING—all chemical, circulation, filter waste discharge piping, deck drainage and water filling system.

PORTABLE POOL—a prefabricated pool which may be erected at the point of intended use and which may be subsequently disassembled and re-erected at a new location. Generally installed on the surface of the ground and without excavation.

PRECOAT—in a diatomite-type filter, the initial coating or filter aid placed on the filter septum at the start of the filter cycle.

RAPID SAND FILTER—a filter designed to be used with sand as the filter media and for flows not to exceed 5 gpm per sq ft.

RECEPTOR—an approved plumbing fixture or device of such material, shape and capacity as to adequately receive the discharge from indirect waste piping, so constructed and located as to be readily cleaned.

RETURN PIPING—that portion of the circulation piping which extends from the outlet side of the filters to the pool.

SALINE WATER—those waters having a specific conductivity in excess of a solution containing 6000 ppm of sodium chloride.

SEPARATION TANK—a device used to clarify filter rinse or waste water. Sometimes called a reclamation tank.

SKIM FILTER—a surface skimmer combined with a vacuum diatomite filter.

SPA, NONPORTABLE—see Swimming Pool.

SPA, PORTABLE—non-permanent structure intended for recreational bathing, in which all controls, water heating, and water circulating equipment are an integral part of the product and which is cord-connected (not permanently electrically wired).

SUCTION PIPING—that portion of the circulation piping located between the pool structure and the inlet side of the pump and usually includes main outlet piping, skimmer piping, vacuum piping and surge tank piping.

SURFACE SKIMMER—a device generally located in the pool wall which skims the pool surface by drawing pool water over a self adjusting weir.

SWIMMING POOL—any structure intended for swimming or recreational bathing that contains water over 24 inches deep. This includes inground, aboveground, and onground swimming pools, hot tubs, and spas.

SWIMMING POOL, INDOOR—a swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR—any swimming pool which is not an indoor pool.

SWIMMING POOL, PUBLIC—any constructed or prefabricated pool used as other than a residential swimming pool.

SWIMMING POOL, RESIDENTIAL—that which is intended for noncommercial use.

TURNOVER TIME—the time in hours required for the circulation system to filter and recirculate a volume of water equal to the pool volume.

VACUUM FITTING—a fitting in the pool which is used as a convenient outlet for connecting the underwater suction cleaning equipment.

VACUUM PIPING—the piping from the suction side of a pump connected to a vacuum fitting located at the pool and below the water level.

WADING POOL—any constructed or prefabricated pool 18 inches or less in depth.

WASTE PIPING—see Filter Waste Discharge Piping.

WIDTH AND/OR LENGTH—actual water dimension taken from wall to wall at the maximum operating water level.

CHAPTER 3 MECHANICAL REQUIREMENTS

301 GENERAL

Unless otherwise specified in this code, all piping, equipment and materials used in the plumbing system of swimming pools that are built in place shall conform to the Standard Plumbing Code.

302 APPROVALS

302.1 Compliance

All materials, piping, valves, equipment or appliances entering into the construction of swimming pools or portions thereof shall be of a type complying with this code or of a type recommended and approved by a nationally recognized testing agency or conforming to other recognized standards acceptable to the administrative authority.

302.2 Items Not Covered

For any items not specifically covered in these requirements, the administrative authority is hereby authorized to require that all equipment, materials, methods of construction and design features shall be proven to function adequately, effectively and without excessive maintenance and operational difficulties.

302.3 Applicant Responsibility

It shall be the responsibility of the applicant to provide such data, tests, or other adequate proof that the device, material or product will satisfactorily perform the function for which it is intended, before such item shall be approved or accepted for tests.

303 ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION

303.1 Approval And Authorization

The provisions of this code are not intended to prevent the use of any alternate material, method of construction, appliance or equipment provided any such alternate has been first approved and its use authorized by the administrative authority.

303.2 Required Tests

When there is insufficient evidence to substantiate claims for alternates, the administrative authority may require tests, as proof of compliance, to be made by an approved agency at the expense of the applicant.

304 ENGINEERING DESIGN

304.1 Conformance Standard

Design, construction and workmanship shall be in conformity with ANSI/NSPI-1 1991, Standard for Public Swimming Pools, ANSI/NSPI-4 1992, Standard for Aboveground/Onground Residential Swimming Pools and NSPI-5, Standard for Residential Swimming Pools, published by the National Spa and Pool Institute, or other accepted engineering practices.

304.2 Required Equipment

Every swimming pool shall be equipped complete with approved mechanical equipment consisting of filter, pump, piping valves and component parts.

Exception: Pools with a supply of fresh water equivalent to the volume of the pool in the specified turnover time will be allowed.

304.3 Water Velocity

Pool piping shall be designed so the water velocity will not exceed 10 ft/s, except that the water velocity shall not exceed 8 ft/s in copper tubing.

Exception: Jet inlet fittings shall not be deemed subject to this requirement.

304.4 Piping To Heater

Water flow through the heater, any bypass plumbing installed, any back-siphoning protection, and the use of heat sinks shall be done in accordance with the manufacturer's recommendations.

304.5 Piping Installation

All piping materials shall be installed in strict accordance with the manufacturer's installation standards.

305 PUMPS

305.1 Strainer

Pool circulating pumps shall be equipped on the inlet side with an approved type hair and lint strainer when used with a pressure filter.

305.2 Mounting

Pumps shall be mounted on a substantial base in a manner that will eliminate strain on piping.

305.3 Capacity

Pumps shall have design capacity at the following heads.

1. Pressure Diatomaceous Earth—At least 60 ft.
2. Vacuum Diatomaceous Earth—20 inch vacuum on the suction side and 40 ft total head.
3. Rapid Sand—At least 45 ft.
4. High Rate Sand—At least 60 ft.

305.4 Materials

Pump impellers, shafts, wear rings and other working parts shall be of corrosion-resistant materials.

306 VALVES

306.1 General

Valves shall be made of materials that are approved in the Standard Plumbing Code. Valves located under concrete slabs shall be set in a pit having a least dimension of five pipe diameters with a minimum of at least 10 inches and fitted with a suitable cover. All valves shall be located where they will be readily accessible for maintenance and removal.

306.2 Full-Way (Gate) Valves

Full-way valves shall be installed to insure proper functioning of the filtration and piping system. When the pump is located below the overflow rim of the pool, a valve shall be installed on the discharge outlet and the suction line.

306.3 Check Valves

Where check valves are installed they shall be of the swing or vertical check patterns.

306.4 Combination Valves

Combination valves shall require approval of the administration authority prior to their installation.

307 WATER SUPPLY

Unless an approved type of filling system is installed, any water supply which in the judgment of the administrative authority may be used to fill the pool, shall be equipped with backflow protection. No over the rim fill spout shall be accepted unless located under a diving board, or properly guarded.

308 WASTE WATER DISPOSAL

308.1 Connection Limitations

Direct or indirect connections shall not be made between any storm drain, sewer, drainage system, seepage pit, underground leaching pit, or sub-soil drainage line, and any line connected to a swimming pool unless approved by the administrative authority.

308.2 Disposal Through Public Sewer

When the waste water from a swimming pool is to be disposed of through a public sewer, a 3-inch P-trap shall be installed on the lower terminus of the building drain and the tall piece from the trap shall extend a minimum of 3 inches above finished grade and below finished floor grade. This trap need not be vented. The connection between the filter waste discharge piping and the P-trap shall be made by means of an indirect connection.

308.3 Deviations

Plans and specifications for any deviation from the above manner of installation shall first be approved by the administrative authority before any portion of any such system is installed. When waste water disposal is to seepage pit installation, it shall be installed in accordance with the approval granted by the administrative authority.

309 SEPARATION TANK

A separation tank of an approved type may be used in lieu of the aforementioned means of waste water disposal when connected as a reclamation system.

310 TESTS

310.1 Pressure Test

All pool piping shall be inspected and approved before being covered or concealed. It shall be tested and proved tight to the satisfaction of the administrative authority, under a static water or air pressure test of not less than 35 psi for 15 minutes.

Exception: Circulating pumps need not be tested as required in this section.

310.2 Drain And Waste Piping

All drain and waste piping shall be tested by filling with water to the point of overflow and all joints shall be tight.

311 DRAIN PIPING

311.1 Slope To Discharge

Drain piping serving gravity overflow gutter drains and deck drains shall be installed to provide continuous grade to point of discharge.

311.2 Joints And Connections

Joints and connections shall be made as required by the Standard Plumbing Code.

312 WATER HEATING EQUIPMENT

312.1 Labels

Swimming pool water heating equipment shall conform to the design, construction and installation requirements in accordance with accepted engineering practices and shall bear the label of a recognized testing agency, and shall include a consideration of combustion air, venting and gas supply requirements for water heaters.

312.2 Water Retention

If heater is not equipped or designed for an approved permanent by-pass or anti-siphon device, an approved permanent by-pass or anti-siphon device shall be installed to provide a positive means of retaining water in the heater when the pump is not in operation.

312.3 Pit Drainage

When the heater is installed in a pit, the pit shall be provided with approved drainage facilities.

312.4 Connections

All water heating equipment shall be installed with flanges or union connection adjacent to the heater.

312.5 Relief Valve

When water heating equipment which is installed in a closed system has a valve between the appliance and the pool, a pressure relief valve shall be installed on the discharge side of the water heating equipment. For units up to and including 200,000 Btu/hour input, the relief valve shall be rated by the American Gas Association.

313 GAS PIPING

Gas piping shall comply with the Standard Gas Code.

314 ELECTRICAL

Electrical wiring and equipment shall comply with the National Electrical Code.

315 ENCLOSURE

315.1 Public Swimming Pools

All public swimming pools shall be completely enclosed by a fence at least 4 ft in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch diameter sphere. The fence or screen enclosure shall be equipped with self-closing and self-latching gates.

315.2 Residential Swimming Pools

Residential swimming pools shall comply with 315.2.1 through 315.2.3.

Exception: A swimming pool with a power safety cover, or a spa with a safety cover complying with ASTM F 1346-91.

315.2.1 Outdoor Swimming Pools. Outdoor swimming pools shall be provided with a barrier complying with 315.2.1.1 through 315.2.1.10.

315.2.1.1 The top of the barrier shall be at least 48 inches above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade the barrier may be at ground level or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches.

315.2.1.2 Openings in the barrier shall not allow passage of a 4-inch diameter sphere.

315.2.1.3 Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

315.2.1.4 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches, the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1 3/4 inches in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 3/4 inches in width.

315.2.1.5 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches or more, spacing between vertical members shall not exceed 4 inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 3/4 inches in width.

315.2.1.6 Maximum mesh size for chain link fences shall be a 2 1/4 inch square.

Exception: A larger mesh size may be used if the fence is provided with slats fastened at the top or bottom which restrict the openings to no more than 1 3/4 inches.

315.2.1.7 Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1 3/4 inches.

CHAPTER 4 PRIVATE POOLS

401 GENERAL

The entire design of matched components shall have sufficient capacity to provide a complete turnover of pool water in 12 hours or less.

402 SAND FILTERS

402.1 Approved Types

Rapid sand filters (flow up to 5 gpm/sq ft) shall be constructed in accordance with approved standards. Where high rate sand filters (flow in excess of 5 gpm/sq ft) are used, they shall be of an approved type. The circulation system and backwash piping shall be adequate for proper backwashing of said filter and shall provide backwash flow rates of at least 12 gpm/sq ft for rapid sand filters or 15 gpm/sq ft for high rate sand filters.

402.2 Instructions

Every filter system shall be provided with written operating instructions.

402.3 Filter System Equipment

On pressure type filters, a means shall be provided to permit the release of internal pressure. A filter incorporating an automatic internal air release as its principal means of air release shall have lids which provide a slow and safe release of pressure as part of its design. A separation tank used in conjunction with a filter tank shall have as part of its design a manual means of air release or a lid which provides a slow and safe release of pressure as it is opened.

403 DIATOMITE TYPE FILTERS

403.1 Design

Diatomite-type filters shall be designed for operation under either pressure or vacuum. The design capacity for both pressure and vacuum filters shall not exceed 2 gpm/sq ft of effective filter area.

403.2 Filter Aid

Provision shall be made to introduce filter aid into the filter in such a way as to evenly precoat the filter septum.

404 POOL FITTINGS

404.1 Approved Type

Pool fittings shall be of an approved type and design as to be appropriate for the specific application.

404.2 Skimmers

Approved surface skimmers are required and shall be installed in strict accordance with the manufacturer's installation instructions. Skimmers shall be installed on the basis of one per 1000 sq ft of surface area, or fraction thereof and shall be designed for a flow rate of at least 25 gpm per skimmer.

404.3 Main Outlet

An approved main outlet shall be provided at the deepest point in every pool for emptying or circulation, or both, of the water in the pool.

404.4 Hydrostatic Relief Device

In areas of anticipated water table an approved hydrostatic relief device shall be installed.

Exception: Plastic liner pools (where there is no structural bottom to the pool).

404.5 Inlet Fittings

Approved manufactured inlet fittings for the return of recirculated pool water shall be provided on the basis of at least one per 15,000 gal of pool capacity. Such inlet fittings shall be designed and constructed to insure an adequate seal to the pool structure and shall incorporate a convenient means of sealing for pressure testing of the pool circulation piping. Where more than one inlet is required, the shortest distance between any two required inlets shall be at least 10 ft.

405 EQUIPMENT FOUNDATIONS AND ENCLOSURES

All mechanical equipment shall be set on a single concrete base or slab. All heating and electrical equipment, unless approved for outdoor installation, shall be adequately protected against the weather or installed within a building.

406 ACCESSIBILITY AND CLEARANCES

Equipment shall be so installed as to provide ready accessibility for cleaning, operating, maintenance and servicing.

CHAPTER 5 PUBLIC POOLS

501 GENERAL

Before commencing the installation of any public or semi-public swimming pool piping, appurtenance, device or equipment, plans in triplicate with specifications and other required pertinent data shall be submitted to the administrative authority, for review and written approval prior to the issuance of a plumbing permit.

502 INLETS AND OUTLETS

Facilities for introducing and removing water from the pool shall be provided and arranged to facilitate a uniform circulation of the water. Every pool shall be provided with an approved outlet for draining the pool. All inlets and outlets shall be provided with strainers or grates attached to the strainer body by screws or bolts. The strainer or grate openings shall not exceed 1/2 inch in one direction. Strainers and grates shall have openings of such size as to be equal to the cross sectional area of the pipe to which they are attached.

503 POOL SKIMMERS AND OVERFLOW GUTTERS

503.1 Design

Every pool shall be provided with approved overflow gutters or skimmers and the design and appurtenances thereto shall be capable of continuously withdrawing at least 50% of the required circulating capacity to provide continuous skimming of the water surface.

503.2 Overflow Gutters

503.2.1 Where pools have overflow gutters, a surge tank shall be provided which will effectively maintain the pool water level so as to produce continuous surface skimming.

503.2.2 Gutter drain piping system shall be designed to provide adequate drainage and facilitate sanitary maintenance and to carry the overflow water to the surge tank. The minimum diameter of gutter drainage piping shall be 2 in.

503.2.3 All inlets to gutter drainage piping shall be provided with corrosion resistant strainer or grates. The openings for each strainer or grate shall be at least 1 1/2 times the cross sectional area of the outlet pipe.

503.3 Skimmers

503.3.1 On pools with a surface area of not over 4000 sq ft approved skimmers may be used as the required overflow devices.

503.3.2 Where skimmers are used in lieu of overflow gutters the circulation system shall be designed to produce sufficient velocity by properly arranged and directed inlets to promote a substantial circulation of the water for skimming.

504 CIRCULATION AND PURIFICATION SYSTEM

504.1 Design

Pumps, filters, chemical feeders and all pipe, connections, fittings and appurtenances thereto shall be of a size or capacity to enable circulating, filtering and disinfecting the entire contents of the pool in not more than 8 hours. The system shall be designed for continuous circulation, filtration and disinfection of the water.

504.2 Accessibility

All valves, pumps, strainers and equipment requiring adjustments shall be readily accessible.

504.3 Valve Identification

All valves shall be identified by appropriate and durable markings on or near such valves.

504.4 Pressure Gages

Pressure gages, easily read and reasonably accurate, shall be provided on filter influent and effluent lines.

504.5 Rate-Of-Flow Indicators

The circulation system shall be provided with an accurate rate-of-flow indicator.

504.6 Traps

Hair and lint traps shall be readily removable and easily cleaned. Such traps shall be so designed to prevent the bypass of material during normal operation and so that material will not drop into the strainer pot when removed for cleaning. Traps shall be of a corrosion resistant material such as stainless steel, brass or plastic and shall have an open area equal to 10 times the area of the suction inlet to the pump. Holes or slots shall have a maximum area equal to 1/8-inch diameter.

504.7 Filter Backwash

Provision shall be made for the required water flow and pressure to adequately backwash the filters, when of a type for which such flow is required.

505 RAPID SAND PRESSURE FILTERS

505.1 Filter Design

The filtration rate shall not exceed 3 gpm/sq ft and provision shall be made to backwash at a rate of not less than 12 gpm/sq ft.

505.2 Pipe Valves

Filter piping shall be valved so that filters can be washed individually and so that each filter can be isolated for repairs while the other units are in service.

505.3 Pump Design

Pumps shall be capable of producing design flow at 45 ft head (both filtering and to backwash).

506 DIATOMACEOUS EARTH FILTERS

506.1 Filter Design

Filters shall be designed on the basis of not more than 2 gpm/sq ft, with maximum rates of 2 1/2 gpm for filters designed for continuous feeding of filter aid.

506.2 Filter Aid

Provision shall be made for precoating with diatomaceous earth filter aid. At municipal, community, public school, athletic or swimming club pools with a surface area of 2000 sq ft or more, equipment shall be provided for the continuous feeding of filter aid to the filter influent, and such equipment shall have a capacity to feed not less than 0.1 lb of this material per square foot of filter area over a 24 hour period.

506.3 Pump Design

For pressure-type units, the pump shall produce not less than 65% of the required flow at maximum anticipated head loss and shall be capable of delivering full required capacity at 60 ft head loss and 60% or more of such capacity at 70 ft head loss.

507 OTHER FILTERS

Other filters may be permitted when performance has been proven as a result of full scale operation of similar units under normal conditions of use or for observation and testing of such other filters.

508 WADING POOL

A circulating system with a minimum 2 hour turnover rate shall be provided for each wading pool.