



City of Lubbock, Texas
Texas Department of State Health Services
Standards for Swimming Pools and Spas

TABLE OF CONTENTS

	Page
Section 1. General Provisions	8
(a) Scope and purpose of rules	8
(b) Application of rules.....	8
(c) Stricter codes and standards.....	9
Section 2. Definitions	9
Section 3. Plans, Permits and Instructions for Post-10/01/99 Pools and Spas	24
(a) Plans and permits for post-10/01/99 pools and spas.....	24
(b) Instructions for post-10/01/99 pools and spas.....	24
Section 4. General Construction and Design for Post-10/01/99 Pools and Spas	24
(a) Structural design and materials for post-10/01/99 pools and spas.....	23
(b) Non-toxic and sound materials for post-10/01/99 pools and spas	23
(c) Accepted practice for post-10/01/99 pools and spas.....	24
(d) NSFI Standard 50 for post-10/01/99 pools and spas.....	24
(e) Prohibition of earth material for post-10/01/99 pools and spas.....	25
(f) Interior color for post-10/01/99 pools and spas	25
(g) Materials to withstand freezing temperatures for post-10/01/99 pools and spas.....	25
(h) Hydrostatic relief valve for post-10/01/99 pools and spas.....	25
(i) Interior surface footing for post-10/01/99 pools and spas	25
(j) General shape for post-10/01/99 pools and spas.....	25
(k) Dimensional variation for post-10/01/99 pools and spas.....	25
(l) Entanglement or entrapment avoidance for post-10/01/99 pools and spas.....	26
(m) Construction tolerances for post-10/01/99 pools and spas	26
(n) Maximum user loading for post-10/01/99 pools and spas	26
(o) Interior walls for post-10/01/99 pools and spas	26
(p) Walls joining floors for post-10/01/99 pools	26
(q) Floor slopes for post-10/01/99 pools	27
(r) Visual separation for post-10/01/99 pools	27
(s) Zero depth entry design for post-10/01/99 pools	27
(t) Offset ledges for post-10/01/99 pools.....	27
(u) Underwater seat benches for post-10/01/99 pools and spas	27
(v) Water lounges in post-10/01/99 pools and spas.....	28
(w) Special requirements for post-10/01/99 Class D wading pools	28
Section 5. General Construction and Design for Pre-10/01/99 Pools and Spas	29
(a) Structural design and materials for pre-10/01/99 pools and spas	29

(b)	Prohibition of earth material for pre-10/01/99 pools and spas.....	29
(c)	Interior color for pre-10/01/99 pools and spas.....	29
(d)	ANSI/NSFI Standard 50 for pre-10/01/99 pools and spas.....	29
(e)	Maximum user loading for pre-10/01/99 pools spas	29

Section 6. Decks, Entry/Exit, Diving Facilities, and Other Deck Equipment at Post-10/01/99 and Pre-10/01/99 Pools and Spas30

(a)	Decks for post-10/01/99 pools and spas	30
(b)	Decks for pre-10/01/99 pools and spas	32
(c)	Entries and exits for post-10/01/99 pools	33
(d)	Entries and exits for pre-10/01/99 pools.....	35
(e)	Diving facilities in post-10/01/99 pools.....	36
(f)	Diving facilities in pre-10/01/99 pools	38
(g)	Platform or diving facilities in post-10/01/99 and pre-10/01/99 pools.....	38
(h)	Starting blocks in post-10/01/99 and pre-10/01/99 pools	38
(i)	Play equipment for post-10/01/99 and pre-10/01/99 pools.....	38
(j)	Slides for post-10/01/99 and pre-10/01/99 pools.....	39
(k)	Exclusion of post-10/01/99 and pre-10/01/99 pools.....	39

Section 7. Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas39

(a)	Suction outlet covers or grates for post-10/01/99 and pre-10/01/99 pools and spas.....	39
(b)	General circulation requirements for post-10/01/99 pools and spas.....	39
(c)	General circulation requirements for pre-10/01/99 pools and spas	41
(d)	Labeling of exposed piping for post-10/01/99 and pre-10/01/99 pools and spas.....	41

Section 8. Filters at Post-10/01/99 and Pre-10/01/99 Pools and Spas42

(a)	Filters for post-10/01/99 pools and spas	41
(b)	Replaced filters for pre-10/01/99 pools and spas.....	41
(c)	Filter design and operation for post-10/01/99 pools and spas	41
(d)	Filter accessibility for post-10/01/99 pools and spas	41
(e)	Filter and separation tank pressure release for post-10/01/99 pools and spas.....	41
(f)	Filter and separation tank instructions for post-10/01/99 pools and spas.....	41
(g)	Observable waste discharge for post-10/01/99 pools and spas.....	41
(h)	Backwashing for post-10/01/99 and pre-10/01/99 pools and spas	42

Section 9. Pumps and Motors at Post-10/01/99 and Pre-10/01/99 Pools and Spas.....42

(a)	Safe pump operation for post-10/01/99 and pre-10/01/99 pools and spas.....	42
(b)	Safe pump design and operation for post-10/01/99 pools and spas.....	43
(c)	Backflow prevention or cross-connection control devices for post-10/01/99 and pre-10/01/99 pools and spas.....	43
(d)	Pump and motor provided for circulation for post-10/01/99 and pre-10/01/99 pools and spas.....	43

(e)	Cleanable strainer for post-10/01/99 pools and spas	43
(f)	Pumps and motors accessible for post-10/01/99 pools and spas	43
(g)	Durable pump seal for post-10/01/99 pools and spas	43
(h)	Pump valves for post-10/01/99 pools and spas.....	43
(i)	Motors for post-10/01/99 pools and spas.....	43

Section 10. Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99

Pools and Spas	44
(a) Suction outlets for post-10/01/99 and pre-10/01/99 pools and spas	44
(b) Closure of post-10/01/99 and pre-10/01/99 pools and spas if the suction outlet is defective.....	44
(c) Approved suction outlet covers and grates in post-10/01/99 and pre-10/01/99 pools and spas.....	44
(d) Suction outlets in post-10/01/99 pools and spas.....	45
(e) Upgrading suction outlet systems on pre-10/01/99 pools and spas	46
(f) Stainless steel or brass fasteners for drain covers and grates in post-10/01/99 and pre-10/01/99 pools and spas.....	47
(g) Vacuum outlets for post-10/01/99 and pre-10/01/99 pools and spas.....	47
(h) Skimmer equalizer lines in post-10/01/99 and pre-10/01/99 pools and spas.....	48
(i) Automatic cleaners not operated while a post-10/01/99 or pre-10/01/99 pool or spa is in use.....	48
(j) Check valves in post-10/01/99 and pre-10/01/99 pools and spas	48
(k) Velocity in suction piping in pre-10/01/99 pools and spas	48
(l) Replacement cover on hand for post-10/01/99 and pre-10/01/99 pools and spas.....	48
(m) Clearance beneath a main drain cover or grate for post-10/01/99 pools and spas.....	48
(n) Clearance beneath a main drain cover or grate for pre-10/01/99 pools and spas.....	49
(o) Return inlets in post-10/01/99 pools and spas	49

Section 11. Surface Skimming and Perimeter Overflow (Gutter) Systems for Post-10/01/99 Pools and Spas

(a) Surface skimming or perimeter overflow system required for post-10/01/99 pools and spas	49
(b) Safe design of surface skimming or perimeter overflow system for post-10/01/99 pools and spas	49
(c) Specific requirements for surface skimmer systems for post-10/01/99 pools and spas	50
(d) Specific requirements for perimeter overflow (gutter) systems for post-10/01/99 pools and spas	50

Section 12. Electrical Requirements for Post-10/01/99 and Pre-10/01/99 Pools, Spas, Pool Yards, and Spa Yards

(a) National Electrical Code (NEC) for post-10/01/99 pools and spas	51
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(b)	National Electrical Code (NEC) for pre-10/01/99 pools and spas.....	51
(c)	National testing for electrical equipment for post-10/01/99 pools and spas.....	51
(d)	Manufacturer’s instructions for proper installation in post-10/01/99 an39 pre-10/01/99 pools and spas.....	51
(e)	Ground fault circuit interrupters in post-10/01/99 and pre-10/01/99 pools & spas.....	52
(f)	Location of ground fault circuit interrupters.....	52
(g)	NEC compliance with ground fault circuit interrupters.....	52
(h)	Bonding and grounding in post-10/01/99 and pre-10/01/99 pools and spas.....	52
(i)	[Plastic coated or epoxy-coated rebar].....	52
(j)	Electrical line clearances for post-10/01/99 and pre-10/01/99 outdoor pools, spas, pool yards, and spa yards.....	52
(k)	Electrical disconnects for service personnel in post-10/01/99 and pre- 10/01/99 pools and spas.....	53
(l)	Location of other electrical equipment for post-10/01/99 and pre-10/01/99 pools and spas.....	54
(m)	Emergency shutoff switch for post-10/01/99 and pre-10/01/99 pools and spas.....	54
(n)	Electrical inspections during construction of post-10/01/99 pools and spas.....	54
(o)	Electrical safety of underwater lights in post-10/01/99 and pre-10/01/99 pools and spas.....	55
Section 13. Heating of Post-10/01/99 and Pre-10/01/99 Pools and Spas.....		55
(a)	Certification of heaters or boilers for post-10/01/99 and pre-10/01/99 poolsand spas.....	55
(b)	Heater installation and testing for post-10/01/99 pools and spas.....	55
(c)	Temperature and thermometer for post-10/01/99 and pre-10/01/99 spas.....	56
(d)	Heating energy source for post-10/01/99 pools and spas.....	56
Section 14. Pool and Spa Water Supply for Post-10/01/99 and Pre-10/01/99 Pools and Spas.....		56
(a)	Initial fill water for post-10/01/99 and pre-10/01/99 pools and spas.....	57
(b)	Make-up water source for post-10/01/99 and pre-10/01/99 pools and spas.....	57
(c)	No direct connection to wastewater system for post-10/01/99 and pre-10/01/99 pools and spas.....	57
(d)	Fill spout for post-10/01/99 pools and spas.....	57
(e)	Fill spout for pre-10/01/99 pools and spas.....	57
Section 15. Drinking Water at Post-10/01/99 and Pre-10/01/99 Pools and Spas.....		57
(a)	Potable water source for post-10/01/99 and pre-10/01/99 pools and spa facilities.....	57
(b)	No cross-connections at post-10/01/99 and pre-10/01/99 pools and spas.....	57
(c)	Drinking water fountain for post-10/01/99 pools and spas.....	58
(d)	Location of waterlines for post-10/01/99 pools and spas.....	58

Section 16. Waste Water Disposal at Post-10/01/99 and Pre-10/01/99	
Pools and Spas	58
(a) Filter backwash disposal for post-10/01/99 and pre-10/01/99 pools and spas.....	58
(b) No direct connection between a wastewater system and a post-10/01/99 or pre-10/01/99 pool or spa	58
(c) Location of on-site sewage facility wastewater disposal lines for post-10/01/99 and pre-10/01/99 pools and spas.....	58
(d) Location of other wastewater disposal facilities or lines for post-10/01/99 and pre-10/01/99 pools and spas	58
Section 17. Disinfectant Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas	58
(a) Disinfectant equipment and practices at post-10/01/99 and pre-10/01/99 pools and spas	59
(b) Chemical feeders at post-10/01/99 and pre-10/01/99 pools and spas	60
Section 18. Gas Chlorination for Post-10/01/99 and Pre-10/01/99 Pools and Spas	61
(a) No gas chlorination to be installed after September 1, 2004	61
(b) Gas chlorination in pools and spas constructed before September 1, 2004	61
(c) Chlorinators on post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas	61
(d) Booster pumps on post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas	61
(e) Housing of chlorinators, cylinders of chlorine and associated equipment at post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas	62
(f) General gas chlorine safety features at post-10/01/99 pools and spas constructed before September 1, 2004 and pre-10/01/99 pools and spas	62
Section 19. Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas	63
(a) Handholds and coping for post-10/01/99 and pre-10/01/99 pools and spas	63
(b) Float lines and floor markings for post-10/01/99 and pre-10/01/99 pools	64
(c) Depth markers for post-10/01/99 pools	64
(d) Depth markers for pre-10/01/99 pools	66
(e) “NO DIVING” wording and international no diving symbol warning signs for post-10/01/99 and pre-10/01/99 pools.....	67
(f) Signs for post-10/01/99 and pre-10/01/99 pools.....	67
(g) Lifeguard personnel standards at post-10/01/99 and pre-10/01/99 pools	68
(h) Lifeguard chairs and lifeguard equipment for post-10/01/99 and pre-10/01/99 pools.....	69
(i) Pool safety equipment for post-10/01/99 and pre-10/01/99 pools	70
(1) Lifesaving equipment at post-10/01/99 and pre-10/01/99 Class A,B, and C pool	70

(2)	Backboards at post-10/01/99 and pre-10/01/99 pools.....	70
(3)	First aid kits at post-10/01/99 and pre-10/01/99 pools.....	70
(j)	Telephones at post-10/01/99 and pre-10/01/99 pools and spas	71
(k)	Lighting for post-10/01/99 and pre-10/01/99 pools and spas	72
(l)	Indoor ventilation for post-10/01/99 pools and spas.....	72
(m)	Safety and sanitation of special aquatic activity devices	72

Section 20. Pool Yard and Spa Yard Enclosures for Post-10/01/99 and Pre-10/01/99 Pools and Spas73

(a)	Enclosures for post-10/01/99 and pre-10/01/99 Class A and B pools and spas and post-10/01/99 and pre-10/01/99 residential youth camp pools and spas.....	73
(b)	Enclosures for post-10/01/99 or pre-10/01/99 Class C pools & spas and Class D pools at a Class C facility that are subject to Health and Safety Code,Chapter 75773.....	74
(c)	Enclosures for all other post-10/01/99 or pre-10/01/99 Class C pools and spas and Class D pools at Class C facilities.....	74
(d)	[Propping open gates prohibited].....	75

Section 21. Dressing and Sanitary Facilities at Post-10/01/99 and Pre-10/01/99 Pools and Spas75

(a)	Fixture design at post-10/01/99 facilities.....	76
(b)	Fixture installation at post-10/01/99 and pre-10/01/99 facilities	76
(c)	Proper cleaning at post-10/01/99 facilities.....	76
(d)	Adequate ventilation at post-10/01/99 facilities	76
(e)	Dressing and sanitary facilities at facilities for post-10/01/99 Class A or B pool	76
(f)	Lavatories, showers, and toilets at post-10/01/99 pools and spas.....	77
(g)	Sanitary facilities serving post-10/01/99 pools or spas in apartments, hotels, motels or condominiums	77
(h)	Additional requirements for sanitary facilities at post-10/01/99 and pre-10/01/99 pools and spas.....	77

Section 22. Food, Beverages, and Containers at Post-10/01/99 and Pre-10/01/99 Pools and Spas78

(a)	Food and beverages while in the water at post-10/01/99 and pre-10/01/99 pools and spas	78
(b)	Non-breakable containers at post-10/01/99 and pre-10/01/99 pools and spas.....	78
(c)	Trash containers at post-10/01/99 and pre-10/01/99 pools and spas	78

Section 23. Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas78

(a)	Required operator certification for certain types of post-10/01/99 and pre-10/01/99 pools and spas	78
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(b)	Water clarity standards for post-10/01/99 and pre-10/01/99 pools and spas	78
(c)	Equipment for water clarity for post-10/01/99 and pre-10/01/99 pools and spas.....	79
(d)	Off season water clarity for post-10/01/99 and pre-10/01/99 outdoor pools and spas	79
(e)	Off season safety for post-10/01/99 and pre-10/01/99 pools and spas	79
(f)	Domestic animals prohibited at post-10/01/99 and pre-10/01/99 pools and spas.....	79
(g)	Actual water level at post-10/01/99 and pre-10/01/99 pools and spas	80
(h)	Protection from chemicals for post-10/01/99 and pre-10/01/99 pools and spas.....	80
(i)	Maximum load limits for post-10/01/99 pools and spas.....	80
(j)	Use of life jackets for post-10/01/99 and pre-10/01/99 pools and spas	80
(k)	Proper use of chemicals at post-10/01/99 and pre-10/01/99 pools and spas	80
(l)	Use of registered products at post-10/01/99 and pre-10/01/99 pools and spas.....	80
Section 24.	Water Quality at Post-10/01/99 and Pre-10/01/99 Pools and Spas.....	80
(a)	Required water quality for post-10/01/99 and pre-10/01/99 pools and spas	80
(b)	Water quality testing at post-10/01/99 and pre-10/01/99 pools and spas	80
(c)	Testing frequency for post-10/01/99 and pre-10/01/99 pools and spas	81
(d)	Other required tests for post-10/01/99 and pre-10/01/99 pools and spas	81
(e)	Operational records for post-10/01/99 and pre-10/01/99 pools and spas	81
Section 25.	Construction, Operation, and Maintenance of Post-10/01/99 and Pre-10/01/99 Spas	81
(a)	General construction standards for pre-10/01/99 spas	81
(b)	General construction standards for post-10/01/99 spas	81
(c)	General standards for circulation equipment in post-10/01/99 spas	81
(d)	General standards for replacement of circulation equipment in pre-10/01/99 spas	81
(e)	Specific construction and operational standards for post-10/01/99 spas	81
(f)	Other safety-related requirements for post-10/01/99 and pre-10/01/99 spas	84
Section 26.	Construction, Operation, and Maintenance of Post-10/01/99 and Pre-10/01/99 Therapeutic Pools and Spas	86
(a)	General construction standards for post-10/01/99 and pre-10/01/99 therapeutic pools and spas	86
(b)	General standards for circulation equipment in post-10/01/99 and pre-10/01/99 therapeutic pools and spas.....	86
(c)	General standards for replacement of circulation equipment in pre-10/01/99 therapeutic pools and spas	86
(d)	Specific construction and operational standards for post-10/01/99 therapeutic pools and spas	86

Section 27. Compliance, Inspections, and Investigations	87
Section 28. Enforcement	87
Figures.	89
Figure Section 4(n)(1)	89
Figure Section 4(o)	89
Figure Section 4(t)(3)	90
Figure Section 6(e)(6)	91
Figure Section 21(f)(1)	92
Figure Section 24(a)	93

CITY OF LUBBOCK, TEXAS
TEXAS DEPARTMENT OF STATE HEALTH SERVICES
POOL AND SPA RULES

Section 1. General Provisions.

(a) *Scope and purpose of rules.* These rules address minimum standards for design and construction of pools and spas. These rules also establish minimum operating standards for pools and spas to assure proper filtration, chemical, and general maintenance of water and safety to users. These standards are based in part on the American National Standards Institute and the National Spa and Pool Institute Standards for Public Swimming Pools (ANSI/NSPI 1 - 1991) and the American National Standards Institute and National Spa and Pool Institute Standards for Public Spas (ANSI/NSPI 2 - 1992). These rules are in addition to any municipal or federal laws applicable to pools and spas. These rules implement Texas Health and Safety Code, Title 5, Subtitle A, §341.064(g), and are considered good public health engineering and safety practices.

(b) *Application of rules.*

(1) A pool or spa constructed prior to October 1, 1999 will be defined as “pre-10/01/99.” A pool or spa constructed on or after October 1, 1999 will be defined as “post-10/01/99.” A pool or spa is considered constructed on the date that a building permit for construction of the pool or spa is issued by the City of Lubbock, Texas or, if no building permit is required, the pool/spa operator/owner must produce adequate written documentation of the date that excavation or electrical service to the pool or spa begins, whichever is first.

(2) A pool or spa serving only one or two dwellings (a single family home or a duplex), regardless of whether the pool or spa is permanently or temporarily installed in or above the ground, is exempt from these rules.

(3) Each section of the rules states the extent to which the rule applies to post-10/01/99 or pre-10/01/99 pools, spas, or facilities.

(4) The standards for pools or spas that apply to pools or spas constructed on or after October 1, 1999, are contained in these rules. Except for rules that specifically apply to pre-10/01/99 pools and spas, the standards for pool or spa design and construction are those standards that were in existence at the time the pool or spa was initially constructed, including then-applicable local, state and federal laws except as otherwise stated in these rules. Owners of pre-10/01/99 pools and spas may follow the rules applicable to post-10/01/99 pools and spas.

(5) The standards for spa design, construction, and operation that apply to post-10/01/99 and pre-10/01/99 spas are contained or referenced in §25 of this title (relating to Construction, Operation, and Maintenance of Post-10/01/99 and Pre-10/01/99 Spas).

(6) The standards for pool or spa operation that apply to pre-10/01/99 pools or spas are the provisions that specifically state that they are applicable to pre-10/01/99 pools or spas.

(7) The standards contained in these rules shall be met notwithstanding minor variations in equipment, materials, or design if:

(A) the variation provides the quality, strength and durability equal to or greater than the standards contained in these rules; and

(B) the operation, maintenance, safety, and sanitation of the pool or spa are not adversely affected by the variation.

(c) ***Stricter codes and standards.*** Whenever a pool or spa owner is in compliance with a more recent code or standard that is stricter than these rules, that standard shall be deemed as in compliance with these rules on a particular subject.

(1) Except as expressly provided in these rules, an owner whose pool or spa was constructed in compliance with a standard applicable on the date of construction is not required to modify construction to comply with a subsequent construction standard for post-10/01/99 pools and spas.

(2) Except as expressly provided in these rules, an owner whose pool or spa equipment was in compliance with a standard applicable at the time installation of equipment is not required to purchase and reinstall equipment complying with a subsequent equipment standard for post-10/01/99 pools and spas in these rules.

(3) Post-10/01/99 and pre-10/01/99 facilities shall be required to meet the operational standard that is most applicable to their use. For example, if a pool is operated as a Class C pool but will be made available for use by the general public, the pool shall meet Class B operational standards for lifeguards, etc.; or if a pool is normally operated as a Class B pool but, is used for a private party and is closed to the general public for the duration of the party the pool shall meet Class C operational standards.

(4) A post-10/01/99 facility shall be required to meet the applicable construction standard that is most restrictive for its intended use. For example, if a pool at a facility that is generally classified as a Class C pool open for use by the general public at any time, it shall be constructed to meet Class B pool standards.

Section 2. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

(1) Above-ground pool or spa - A removable pool or spa of any shape that is located on the surrounding earth or a pool or spa package located in an excavation below the ground level that may be readily disassembled or stored and reassembled.

(2) Actual water level - The water level at any particular point in time, which may vary with specific conditions such as rainfall or number of users. (See definition (47) "Design

water level” and (89) “Operating water level range.”)

(3) Algae - Microscopic plant-like organisms that contain chlorophyll and include green, blue-green or black brown, and yellow-green (mustard) algae.

(4) Algaecide - A natural or synthetic substance used for killing, destroying, or controlling algae.

(5) Alkalinity - The amount of bicarbonate, carbonate or hydroxide compounds present in water solution. (See definition (143) “Total alkalinity.”)

(6) Approved cover or approved drain cover - A suction outlet drain cover that meets the requirements of §10(c)(1) of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(7) Approved grate - A suction outlet grate that meets the requirements of §10(c)(2) of this title.

(8) ACI - American Concrete Institute, P. O. Box 9094, Farmington Hills, Michigan 48333-9094, telephone (248) 848-3800.

(9) ANSI - American National Standards Institute, 25 West 43rd Street (4th Floor), New York, New York 10036, telephone (212) 642-4900.

(10) ANSI/NSPI 1 - 1991 - American National Standards Institute and National Spa and Pool Institute Standards for Public Swimming Pools adopted in 1991.

(11) ANSI/NSPI 2 - 1992 - American National Standards Institute and National Spa and Pool Institute Standards for Public Spas adopted in 1992.

(12) ARC - American Red Cross, 8111 Gatehouse Road, Falls Church, Virginia 22042, telephone (703) 206-6000.

(13) ASHRAE - American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE, Atlanta, Georgia 30329-2305, telephone (800) 527-4723.

(14) ASME - American Society of Mechanical Engineers, 22 Law Drive, P.O. Box 2900, Fairfield, New Jersey 07007-2900, telephone (800) 843-2763.

(15) ASPSA – American Swimming Pool and Spa Association, 1108 Little River Dr., Elizabeth City, North Carolina 27909, telephone (252) 331-2301.

(16) ASTM - American Society of Testing Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959, telephone (610) 832-9500.

(17) Available chlorine - Rating of chlorine containing products for total oxidizing power. (See definition number (62) “Free available chlorine.”)

(18) AVS - An atmospheric vent system, as described in §296.190(d)(3)(A) of Title 25 of the Texas Administrative Code for minimizing risk of entrapment.

(19) Backwash - The process of cleansing the filter medium and/or elements by the reverse flow of water through the filter.

(20) Backflow prevention device - A device that is designed to prevent a physical connection between a potable water system and a non-potable source such as a pool or spa, or a physical connection between a pool or spa and a sanitary sewer or wastewater disposal system. (See definition number (41) "Cross-connection control device.")

(21) Bacteria - Single-celled microorganisms of various forms, some of which cause infections or disease.

(22) Beginner's areas - Water areas that are 3 feet or less in depth in a pool.

(23) Bleeder valve - A device that allows air to be vented from a closed system. (See definition number (154) "Valve.")

(24) Bonded - The permanent joining of metallic parts to form an electrically conductive path that will ensure electrical continuity and the capacity to conduct safely any current likely to be imposed in order to minimize the risk of electrocution. Examples of bonding are the installation of a metal wire from a pool or spa pump to the rebar in the pool or spa wall, or interconnecting all rebar in a pool or spa wall by metal wire prior to pouring concrete in the wall.

(25) Breakpoint - The practice of adding a sufficient amount of chlorinating compound to water to destroy chlorine demand compounds and any combined chlorine, which is present. Generally, the level of chlorine added is 10 times the level of combined chlorine in the water. (See definition number (132) "Super chlorination.")

(26) Breakpoint chlorination - The addition of a sufficient amount of chlorine to water to destroy the chlorine demand compounds and any combined chlorine that is present. (See definition number (132) "Super chlorination.")

(27) Broken stripe - A horizontal stripe that is at least 1 inch wide with uniform breaks in the stripe, with the breaks totaling not more than 75% of the length of the stripe and stripe breaks.

(28) Bromine - A chemical element (Br₂) that exists as a liquid in its elemental form or as part of a chemical compound that is a biocide agent used to disinfect pool or spa water.

(29) Chemical feeder - A mechanical device for applying chemicals to pool or spa water.

(30) Chloramine - A compound formed when chlorine combines with nitrogen or

ammonia that when found in significant amounts in a pool or spa, may cause eye and skin irritation and may have an objectionable odor.

(31) Chlorinator - A device to apply or to deliver a chlorine disinfectant to water at a controlled rate.

(32) Chlorine - A chemical element (Cl₂) that exists as a gas in its elemental form or as a part of chemical compound that is an oxidant. Chlorine is a biocide agent used to disinfect pool or spa water.

(33) Chlorine demand compounds - Organic matter, chloramines, and other such compounds that chlorine reacts with and that depletes chlorine.

(34) Chlorine Institute - Chlorine Institute, 2001 L Street North West, Suite 506, Washington, D.C. 20036-4919, telephone (202) 775-2790.

(35) Circulation equipment - The mechanical components that are a part of a circulation system on a pool or spa. Circulation equipment may include but is not limited to, categories of pumps; hair and lint strainers; filters; valves; gauges; meters; heaters; surface skimmers; inlet/outlet fittings; and chemical feeding devices. The components have separate functions, but when connected to each other by piping, perform as a coordinated system for purposes of maintaining pool or spa water in a clear, sanitary, and desirable condition for use.

(36) Circulation system - An arrangement of mechanical equipment or components, connected by piping to a pool or spa in a closed circuit. The function of a circulation system is to direct water from the pool or spa, causing it to flow through the various system components for purposes of clarifying, heating, purifying, and returning the water back to the original body of water.

(37) Combined chlorine - The portion of the total chlorine pre-10/01/99 in water in chemical combination with ammonia, nitrogen, and/or organic compounds, mostly comprised of chloramines. Combined chlorine plus free chlorine equals total chlorine.

(38) Construction date - The date that a building permit for construction of the pool or spa is issued by a municipality or, if no building permit is required, written documentation of the date that excavation or electrical service to the pool or spa begins, whichever is first.

(39) Coping - The cap on the pool or spa wall that provides a finishing edge around the pool or spa. The coping can be formed, cast in place or pre-cast, or pre-fabricated from metal or plastic materials.

(40) CPSC - United States Consumer Product Safety Commission, Washington, D.C. 20207, telephone (800) 638-2772.

(41) Cross-connection control device - A device that is designed to prevent a physical connection between a potable water system and a non-potable source such as a pool or spa, or a physical connection between a pool or spa and a sanitary sewer or wastewater disposal system.

(See definition number (20) “Backflow prevention device.”)

(42) Cyanuric acid - A chemical that helps reduce the excess loss of chlorine in water due to the ultraviolet rays of the sun.

(43) Decks - Areas immediately adjacent to or attached to a pool or spa that are specifically constructed or installed for sitting, standing, or walking.

(44) Deep areas - Water levels in pools that are over 5 feet deep.

(45) Department - The City of Lubbock, Texas Health Department , telephone (806) 775-2928, 1902 Texas Avenue, Lubbock, TX 79411.

(46) Depth (pool or spa depth) - The vertical distance measured at 3 feet from the pool or spa wall from the bottom of the pool or spa to the design water level.

(47) Design water level - The design water level defined in either of the following ways:

(A) Skimmer system - The design water level shall be at the midpoint of the operating range of the skimmers; or

(B) Overflow system - The design waterline shall be at the top of the overflow rim of the gutter system.

(48) DPD - A chemical testing reagent (N,N-Diethyl-P-Phenylenediamine) used to measure the levels of free chlorine or bromine in water by yielding a series of colors ranging from light pink to dark red.

(49) Disinfectant - Energy or chemicals used to kill undesirable or pathogenic (disease causing) organisms, and having a measurable residual at a level adequate to make the desired kill.

(50) Disinfectant equipment - Equipment designed to apply or deliver a disinfectant (such as chlorine or bromine) at a controlled rate.

(51) Diving board - A recreational mechanism for entering a pool, consisting of semi-rigid board that derives its elasticity through the use of a fulcrum mounted below the board.

(52) Diving equipment for competition - Competitive diving boards and fulcrum-setting diving stands intended to provide adjustment for competitive diving.

(53) Dwelling or rental dwelling - One or more rooms rented to one or more persons where a Class C pool or spa or a Class D pool is located.

(54) Effective filter area - Total surface area through which designed flow rate will be maintained during filtration.

- (55) Effluent - The water that flows out of a filter, pump, or other device.
- (56) Facility(ies) - The pool or spa, restrooms, dressing rooms, equipment rooms, deck, enclosure, and other appurtenances directly serving the pool or spa area.
- (57) Feet of head - A basis for indicating the resistance in a hydraulic system, equivalent to the height of a column of water that would cause the same resistance (100 feet of head equals 43 pounds per square inch). The dynamic head is the sum of all resistances in a complete operating system.
- (58) Filter - A device that removes undissolved particles from water by recirculating the water through a porous substance (filter media or element).
- (59) Filter element - A device within a filter tank designed to entrap solids and conduct water to a manifold, collection header, pipe, or similar conduit and return it to the pool or spa. A filter element usually consists of a septum and septum support, or a cartridge.
- (60) Filter media - A finely graded material (for example, sand, diatomaceous earth, polyester fabric, and anthracite) that removes filterable particles from the water.
- (61) Floor - The interior bottom surface of a pool or spa.
- (62) Free available chlorine - That portion of the total chlorine remaining in chlorinated water that is not combined with ammonia or nitrogen compounds and that will react chemically with undesirable or pathogenic organisms. Combined chlorine plus free chlorine equals total chlorine.
- (63) Handhold - A ledge, coping, rope, railing, deck, or similar construction along the immediate top edge of the pool that provides a slip-resistant surface or grip.
- (64) Handrail - A railing that is intended to be gripped for resting and/or steadying a person while entering or exiting a pool or spa and that is typically part of a ladder, a set of steps, or deck-installed equipment.
- (65) Hardness - The amount of calcium and magnesium dissolved in water measured by a chemical test kit and expressed as parts per million (ppm) of equivalent calcium carbonate.
- (66) Health official – The city health officer or designated representative.
- (67) Heat exchanger - A device with coils, tubes or plates that absorbs heat from any fluid, liquid or air, and transfers that heat to another fluid without intermixing the fluids.
- (68) Heat pump - A refrigeration compressor, usually electrically driven, that is operated in reverse. To obtain heat, the evaporator side (cooling coil) is exposed to warm water, air or ground. The evaporator coil absorbs the heat from this source and transfers it to the condenser coil where it discharges the heat to the pool or spa to be heated.

(69) Hot tub - A spa constructed of wood with sides and bottoms formed separately and joined together by pressure from surrounding hoops, bands, or rods; distinct from spa units formed of plastic, concrete, metal, or other materials.

(70) IESNA - Illuminating Engineering Society of North America, 120 Wall Street, Floor 17, New York, New York 10005-4001, telephone (212) 248-5000.

(71) Influent - The water entering a filter or other device.

(72) Jump board - A recreational mechanism for entering a pool that has a coil spring or comparable device located beneath the board which is activated by the force exerted in jumping on the board.

(73) Labeled - Equipment or material to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

(74) Ladders -

(A) Deck ladder - A ladder ascending from ground level outside the pool or spa to the level of a deck.

(B) In-pool or in-spa ladder - A ladder located in a pool or spa to provide ingress and egress from the deck.

(75) Listed - Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate designated standards or has been tested and found suitable for use in a specified manner.

(76) Local regulatory authority - The local enforcement body or authorized representative having jurisdiction over pools, spas, and associated facilities.

(77) May - An advisory statement or a good practice and is not legally required.

(78) MSHA - Mine Safety and Health Administration, 2002 Thayer Center, Oakland, Maryland 21550, telephone (301) 334-3831.

(79) Multi-port valve - A device that allows the multi-directional control of the passage or flow of water through a system. (See definition number (154) "Valve.")

(80) NEC - National Electric Code, published by NFPA. (See definition number (82) "NFPA.")

(81) NEMA - National Electric Manufacturers Association, 1300 N. 17th Street, Suite 1847, Rosslyn, Virginia 22209, telephone (703) 841-3200.

(82) NFPA - National Fire Protection Association, 11 Tracy Drive, Avon, Massachusetts 02322, telephone (800) 344-3555.

(83) NO_x - (also written no_x) Nitrogen oxides or the sum of the nitric oxide and nitrogen dioxide found in the flue gas or emission point of a source.

(84) NRPA - National Recreation and Park Association, 650 West Higgins Road, Hoffman Estates, Illinois 60195-3402, telephone (847) 843-7529.

(85) NSF_I - National Sanitation Foundation International, 789 N. Dixboro Drive, Ann Arbor, Michigan 48115, telephone (800) 673-6275.

(86) NSPF - National Swimming Pool Foundation, 224 East Cheyenne Mountain Blvd., Colorado Springs, CO 80906, telephone (719) 540-9119.

(87) NSPI - National Swimming Pool Institute, 2111 Eisenhower Avenue, Alexandria, Virginia 22314, telephone (703) 838-0083.

(88) Offset ledge - A horizontal shelf or ledge projecting toward the interior of a pool from the vertical wall that provides a safe footing for a pool user to stand on in deep areas of the pool.

(89) Operating water level range - The operating water level defined in one of the following ways:

(A) Skimmer system - Two inches above to 2 inches below the midpoint of the operating range of the device, or manufacturer's maximum stated operating range; or

(B) Overflow (gutter) system - The manufacturer's maximum stated operating range above the design water level.

(90) Organic matter - Perspiration, urine, fecal matter, saliva, suntan oil, cosmetics, lotions, dead skin, and similar debris introduced to water by users and the environment.

(91) ORP - The potential level of oxidation-reduction produced by strong oxidizing (sanitizing) agents in a water solution. Oxidation level is measured in millivolts by an ORP meter.

(92) OSHA - United States Department of Labor, Occupational Safety and Health Administration, 200 Constitution Avenue N.W., Washington, D.C. 20210, telephone (800) 321-6742.

(93) Outlet - (See definition number (131) "Suction outlet.")

(94) Overflow system - Overflows, surface skimmers, and surface water collection systems of various design and manufacture for removal of pool or spa surface water.

(95) Owner/operator - Fee title holder of the property upon which the pool or spa is located, and/or business manager, complex manager, property owners, association manager, rental agent or other individual who is in charge of the day to day operation or maintenance of the property. The owner/operator is responsible to ensure that the pool or spa and associated facilities comply with state and local pool or spa design, construction, operation, and maintenance standards.

(96) Parts per million (PPM) - A unit of measurement in chemical testing that indicates the parts by weight in relation to one million parts by weight of water. For the purposes of pool or spa water chemistry, ppm is considered to be essentially identical to the term milligrams per liter (mg/L).

(97) pH - A value expressing the relative acidic or basic tendencies of a substance, such as water, as indicated by the hydrogen ion concentration. The pH is expressed as a number on the scale of zero to 14, zero being most acidic, 1 to 7 being acidic, 7 being neutral, 7 to 14 being basic and, 14 being most basic.

(98) Plaster - A type of interior finish (a mixture of cement and aggregate) that is applied to a concrete pool or spa and that is either white or meets the observable "black disk" requirement in §4(f) of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas) and §5(c) of this title (relating to General Construction and Design for Pre-10/01/99 Pools and Spas).

(99) Plummet - A line perpendicular to the water surface and extending vertically to a point located at the front end of the diving board and at the center line directly in front of the diving board.

(100) Pool - Any man-made permanently installed or non-portable structure, basin, chamber, or tank containing an artificial body of water that is used for swimming, diving, aquatic sports, or other aquatic activity other than a residential pool and that is operated by an owner, lessee, operator, licensee or concessionaire, regardless of whether a fee is charged for use. The pool may be either publicly or privately owned. The term does not include a spa or a decorative fountain that is not used as a pool. The term does not include a portable or above ground pool. References within the standard to various types of pools are defined by the following categories:

(A) Class A pool - Any pool used, with or without a fee, for accredited competitive aquatic events such as Federation Internationale De Natation Amateur (FINA), United States Swimming, United States Diving, National Collegiate Athletic Association (NCAA), National Federation of State High School Associations (NFSHSA), events. A Class A pool may also be used for recreation.

(B) Class B pool - Any pool used for public recreation and open to the general public with or without a fee.

(C) Class C pool - Any pool operated for and in conjunction with: (i) lodging such as hotels, motels, apartments, condominiums, or mobile home parks; (ii) property owner associations, private organizations, or clubs; or (iii) a school, college or university while being operated for academic or continuing education classes. The use of such a pool would be open to occupants, members or students, etc., and their guests but not open to the general public.

(D) Class D pool - A wading pool with a maximum water depth of 24 inches at any point.

(101) Pool yard or spa yard - An area that has a pool yard or spa yard enclosure and that contains a pool or spa.

(102) Pool yard or spa yard enclosure - A fence, wall, or combination of fences, walls, gates, windows, or doors that completely surround a pool or spa.

(103) Post-10/01/99 pool or spa - A pool or spa built on or after October 1, 1999, unless otherwise indicated. (See §1(b) of this title, relating to General Provisions.)

(104) Post-10/01/99 pool and/or spa construction - The activity of building or installing a pool and/or spa structure, and its component parts, where no such structure has previously existed or where previously pre-10/01/99 pool or spa structures have been removed.

(105) Potable water - Water that is bacteriologically safe and otherwise suitable for drinking and is regulated by the Texas Commission on Environmental Quality or local regulatory authority as a drinking water system.

(106) Pre-10/01/99 pool or spa - A pool or spa built before October 1, 1999, unless otherwise indicated. (See §1(b) of this title, relating to General Provisions.)

(106) Precipitate - A solid material that is forced out of a solution by some chemical reaction and that settles out or remains as a haze in suspension (turbidity).

(107) Pressure differential - The difference in pressure between two parts of a hydraulic system, such as the influent and effluent of a filter.

(108) PSI - Pounds per square inch.

(109) Pump - A mechanical device, usually powered by an electric motor that causes hydraulic flow and pressure for the purpose of filtration, heating, and circulation of pool and spa water.

(110) Push-pull valve - A device that allows the dual direction control or flow of water through a system. (See definition number (154) "Valve.")

(111) Rate of flow - The quantity of water flowing past a designated point within a specified time, such as the number of gallons flowing in 1 minute (gallons per minute).

(112) Regulatory authority - Any federal, state, or local enforcement body or authorized representative having jurisdiction over pools, spas, and associated facilities.

(113) Residential pool or spa - A pool or spa that is located on private property under the control of the property owner or the owner's tenant and that is intended for use by not more than two resident families and their guests. It includes a pool or spa serving only a single-family home or a duplex.

(114) Return inlet or inlet - The aperture or fitting through which the water under positive pressure returns into a pool or spa.

(115) Ring buoy - A ring-shaped floating buoy capable of supporting a user.

(116) Rope and float line - A continuous line that is not less than 1/4 inch in diameter and that is supported by buoys and attached to opposite sides or ends of a pool to separate the deep and shallow ends or mark exercise or racing lanes.

(117) Scale - The precipitate that forms on surfaces in contact with water when the hardness, pH, or total alkalinity levels are too high.

(118) Self-closing and self-latching device - A device that causes a gate to automatically fully close and latch without human or electrical power.

(119) Separation tank - A tank used in conjunction with a filter to facilitate the separation of filtrate material for disposal.

(120) Service animal - A guide dog, signal dog, or other animal trained to do work or perform tasks for the benefit of an individual with a disability, including but not limited to, guiding individuals with impaired vision, alerting individuals with impaired hearing to intruders or sounds, or providing minimal protection or rescue work, such as pulling a wheelchair, or fetching dropped items.

(121) Shall - Mandatory provisions of these regulations.

(122) Shallow areas - Pool water areas that are 5 feet deep or less.

(123) Shock treatment - The practice of adding significant amounts of an oxidizing chemical to water to destroy ammonia and nitrogenous and organic contaminants in water.

(124) Skimmer weir - Part of a skimmer that adjusts automatically to small changes in water level to assure a continuous flow of water to the skimmer.

(125) Slide - A recreational feature with a flow of water and an inclined flume or channel by which a rider is conveyed downward into a pool.

(126) Slip-resistant - A surface that has been treated or constructed to significantly reduce the chance of slipping.

(127) Spa - A constructed permanent or portable structure that is 2 feet or more in depth and that has a surface area of 250 square feet or less or a volume of 3250 gallons or less and that is intended to be used for bathing or other recreational uses and is not drained and refilled after each use. It may include, but is not limited to, hydrojet circulation, hot water, cold water, mineral baths, air induction bubbles, or any combination thereof. A spa, as is defined in these rules, does not refer to a business establishment such as a day spa or a health spa. Industry terminology for a spa includes, but is not limited to, "hydrotherapy pool," "whirlpool," "hot spa," "hot tub," etc. A spa does not include a residential spa. (See definition number (113) "Residential pool or spa.")

(128) Special aquatic activity device - An interactive play device, such as a slide, spray stream, or similar item, utilizing water that is recirculated.

(129) Stabilizer - A chemical that helps reduce the excess loss of chlorine in water due to the ultraviolet rays of the sun. (See definition number (42) "Cyanuric acid.")

(130) Steps, recessed steps, ladders, and recessed treads - A means of pool and spa ingress and egress that may be used separately or in conjunction with one another.

(A) Steps - A riser/tread or series of risers/treads extending down from the deck and terminating at the pool or spa floor. Included are recessed steps that have the risers located outside of user areas.

(B) Ladders - A series of vertically separated treads or rungs connected by vertical rail members or independently fastened to an adjacent vertical pool or spa wall. (See definition number (74) "Ladders" for particular ladder types.)

(C) Recessed treads - A series of vertically spaced cavities in the pool or spa wall creating tread areas for step holes.

(131) Suction outlet - The aperture or fitting through which the water is drawn from the pool or spa. A skimmer is not considered a suction outlet for purposes of these rules.

(132) Super chlorination - The practice of adding a sufficient amount of chlorinating compound to water to destroy chlorine demand compounds and any combined chlorine that is present. Generally, the level of chlorine added is 10 times the level of combined chlorine in the water. (See also definition number (26) "Breakpoint chlorination.")

(133) Surface skimmer system/Through wall skimmer - A device installed in the wall of an in-ground pool or spa, or above-ground pool or spa that permits the continuous removal of floating debris and surface water to the filters.

(134) Surge pit - A collecting tank or sump that allows the pool drains(s) and surface collection system to flow into it by gravity.

(135) SVRD - A safety vacuum release device, as described in §296.190(d)(3)(B) of

Title 25 of the Texas Administrative Code for minimizing risk of entrapment.

(136) SVRS - A safety vacuum release system that consists of either an SVRD or an AVS, as described in §296.190(d)(3) of Title 25 of the Texas Administrative Code for minimizing risk of entrapment.

(137) Swimout - A recessed area outside of the general perimeter of the pool designed to facilitate the entry and exit of swimmers from a pool.

(138) TCEQ - Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087, telephone (512) 239-1000.

(139) TDLR - Texas Department of Licensing and Regulation, Boiler Division, P. O. Box 12157, Austin, Texas 78711, telephone (800) 803-9202.

(140) TDS - Total dissolved solids, i.e., a measure of the total amount of dissolved matter in water (for example, calcium, magnesium, carbonates, bicarbonates, metallic compounds).

(141) Test kit - A device for monitoring a specific chemical level in pool or spa water.

(142) Therapeutic pool or spa - A pool or spa that is operated exclusively for therapeutic purposes, such as physical therapy, and is under the direct supervision and control of licensed medical personnel.

(143) Total alkalinity - A measure of the ability or capacity of water to resist change in pH; also known as the buffering capacity of water. Measured with a test kit and expressed as ppm; consists mainly of carbonates, bicarbonates and hydroxides.

(144) Total chlorine - The sum of both the free available and combined chlorine.

(145) Toxic - A substance that has an adverse physiological effect on human beings or other living organisms.

(146) Turbidity - Cloudy condition of water due to the presence of fine particulate materials in suspension that interferes with the passage of light.

(147) Turnover rate - The period of time (usually in hours) required to circulate a volume of water equal to the total pool or spa capacity.

(148) UFC - Uniform Fire Code, published by the International Fire Code Institute, 5360 Workman Mill Road, Whittier, California 90601-2298, telephone (800) 423-6587.

(149) Underwater light - A fixture designed to illuminate a pool or spa from beneath the water surface. An underwater light includes either of the following:

(A) Wet niche light - a watertight and water-cooled light unit placed in a

submerged, wet niche in the pool or spa wall and accessible only from the pool or spa; or

(B) Dry niche light - a light unit placed behind a watertight window in the pool or spa wall.

(150) UL - Underwriters Laboratory, 333 Pfingsten Road, Northbrook, Illinois 60062-2096, telephone (847) 272-8800.

(151) User - A person using a pool or spa and adjoining deck area for the purpose of water sports, recreation therapy or related activities.

(152) User load - The number of persons in the pool or spa area at any given moment, or during any stated period of time.

(153) Vacuum - The reduction of atmospheric pressure within a pipe, tank, pump, or other vessel. Vacuum is measured in inches of mercury. Each inch of mercury is equivalent to 1.13 feet of head. The typical maximum vacuum is 30 inches of mercury, or 33.9 feet of head.

(154) Valve - Any device in a pipe that will partially or totally obstruct the flow of water (as in a ball, gate or globe valve) or permit flow in one direction only (as in a check or foot valve). (See definition numbers (23) "Bleeder valve," (79) "Multi-port valve," and (110) "Push-pull valve.")

(155) Velocity - The speed at which a liquid flows between two specified points, expressed in feet per second.

(156) Vortex pool - Circular pools equipped with a method of transporting water in the pool for the purpose of propelling riders at speed dictated by velocity of the moving stream.

(157) Wading pool - A Class D pool that has a maximum depth of 2 feet at any point.

(158) Walls - The interior pool or spa wall surfaces consisting of surfaces from plumb to a slope of 11 degrees from plumb.

(159) Waste water disposal system - A plumbing system used to dispose of backwash or other water from a pool or spa or from dressing rooms and other facilities associated with a pool or spa.

(160) Water action pools - A pool designed to simulate breaking or cyclic waves for the purpose of general play or surfing.

(161) Water lounge - A horizontal area of a pool that adjoins the pool wall at a depth of from 2 inches to 10 inches, is used for seating and play.

(162) Weir - Part of a skimmer that adjusts automatically to small changes in water level to assure a continuous flow of water to the skimmer.

(163) YMCA - Y.M.C.A. of U.S.A. (Y.M.C.A.), 101 North Wacker, Chicago, Illinois 60606, telephone (800) 872-9622.

(164) Zero depth entry pool - A pool in which the pool floor intersects the water surface along at least one side of the pool.

Section 3. Plans, Permits and Instructions for Post-10/01/99 Pools and Spas.

(a) ***Plans and permits for post-10/01/99 pools and spas.*** All pools and spas must have properly stamped engineered plans from a registered professional engineer or registered architect showing that the pool or spa is designed and built in compliance with these rules and any other applicable federal, state, and/or local regulatory requirements. The department shall review plans for post-10/01/99 pools or spas in order to ensure compliance regarding enforcement issues. Such review is required prior to issuance of a permit.

(b) ***Instructions for post-10/01/99 pools and spas.*** Upon completion of construction of a post-10/01/99 pool or spa, the owner shall obtain from the pool or spa builder complete written operational instructions for the pool or spa. Written instructions shall include items such as procedures for filtration, backwash, cleaning, and operation of all chemical feed devices and general maintenance of pool or spa. In addition, the following are required:

- (1) labeling of valves;
- (2) labeling of exposed piping;
- (3) clean filter pressures, normal operating pressures, and pressure differentials that indicate the need for filter cleaning.

Section 4. General Construction and Design for Post-10/01/99 Pools and Spas.

(a) ***Structural design and materials for post-10/01/99 pools and spas.*** Construction design and materials used in construction of post-10/01/99 pools and spas shall comply with the requirements of this section, as well as other requirements expressly stated in these rules.

(b) ***Non-toxic and sound materials for post-10/01/99 pools and spas.*** Post-10/01/99 pools and spas and all appurtenances shall be constructed of materials that are considered to be nontoxic to humans and the environment, are impervious and enduring, and will withstand design stresses; and will provide a water-tight structure with a smooth and easily cleanable surface without cracks or joints, excluding structural joints.

(c) ***Accepted practice for post-10/01/99 pools and spas.*** The structural design and materials used for post-10/01/99 pools or spas shall be in accordance with generally accepted industry engineering practices and methods prevailing at the time of original construction.

(d) ***NSFI Standard 50 for post-10/01/99 pools and spas.*** Where equipment for a

post-10/01/99 pool or spa such as pumps, filters, skimmers, chemical feeders, and other equipment, falls within the scope of ANSI and NSFI Standard 50 - 1996 (ANSI/NSFI 50 - 1996), such equipment shall meet the standard as confirmed by a testing laboratory, except as otherwise noted in §10(h) of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas). Conformity with standards noted above shall be evidenced by the listing or labeling of such equipment by such a laboratory or by separate documentation.

(e) ***Prohibition of earth material for post-10/01/99 pools and spas.*** Earth shall not be permitted as an interior finish in a post-10/01/99 pool or spa. Clean sand or similar material, if used in a beach pool environment shall only be used over an impervious surface and designed to perform in such an environment, and controlled so as not to adversely affect the proper filtration, treatment system, maintenance, safety, sanitation and operation of the overall pool or spa. If sand or similar material is used, positive upflow circulation through the sand shall be provided as necessary to assure that sanitary conditions are maintained at all times.

(f) ***Interior color for post-10/01/99 pools and spas.*** The colors, patterns, or finishes of a post-10/01/99 pool or spa interior shall not obscure the existence or presence of objects or surfaces within the pool or spa. All post-10/01/99 pool and spa interior surfaces shall be a light enough color so that an 8-inch black disk on the pool or spa floor at the deepest point of the pool or spa can be clearly and immediately seen by an observer standing on the pool or spa deck at a point closest to the disk.

(g) ***Materials to withstand freezing temperatures for post-10/01/99 pools and spas.*** In climates subject to freezing temperatures, a post-10/01/99 pool or spa shell and appurtenances, piping, filter system, pump and motor, and other components shall be designed and constructed to facilitate protection from damage due to freezing.

(h) ***Hydrostatic relief for post-10/01/99 pools and spas.*** A hydrostatic relief valve, plug, or a more extensive hydrostatic system shall be installed if necessary to prevent ground water pressure from displacing or otherwise damaging a post-10/01/99 pool or spa.

(i) ***Interior surface footing for post-10/01/99 pools and spas.*** The surfaces within a post-10/01/99 pool or spa intended to provide footing for users shall have a slip-resistant surface to help reduce the chance for a fall. The roughness or irregularity of such surfaces shall not cause injury to feet during normal use.

(j) ***General shape for post-10/01/99 pools and spas.*** This standard is not intended to regulate the perimeter shape of post-10/01/99 pools or spas. It is the designer's responsibility to take into account the effect a given shape will have on the health and safety of the occupants.

(k) ***Dimensional variation for post-10/01/99 pools and spas.*** Dimensions for post-10/01/99 pools and spas may vary in limited areas where access for persons with disabilities has been provided, as long as general safety of all users is maintained. The design shall take into account requirements of the "Americans with Disabilities Act of 1990", 42 U.S.C. §§12101-12213, Disability Act and any other applicable local, state and federal laws relating to such access.

(l) ***Entanglement or entrapment avoidance for post-10/01/99 pools and spas.*** There shall be no protrusions, extensions, means of entanglement, or other obstructions in a post-10/01/99 pool or spa that are likely to cause the entrapment or injury of the user. For specific information regarding entrapment issues, see the CPSC “Handbook for Public Playground Safety, Publication,” No. 325-1997, or the ASTM “Standard Consumer Safety Performance Specification for Playground Equipment for Public Use,” No. F1487-1995.

(m) ***Construction tolerances for post-10/01/99 pools and spas.*** For post-10/01/99 pools and spas, construction tolerances allowed on all dimensional designs for overall length, width, and depth in the deep end may vary plus or minus 3 inches. All other dimensions may vary plus or minus 2 inches, unless otherwise specified (such as in a Class A pool.) The design water level shall have a maximum construction tolerance at the time of completion of the work of plus or minus 1/4 inch for post-10/01/99 pools or spas with adjustable weir surface skimming systems, and of plus or minus 1/8 inch for post-10/01/99 pools or spas with non-adjustable surface skimming systems. Step treads and risers may vary plus or minus 1/2 inch.

(n) ***Maximum user loading for post-10/01/99 pools and spas.*** The maximum number of users to be allowed in a post-10/01/99 pool or spa at one time will depend on a number of factors, such as the type of pool or spa; indoor or outdoor location, surface area, operating characteristics of the water; purification system, quality and clarity of the pool or spa water, etc., the most significant factors are the surface area of the water in the pool or spa and the sanitary and physical condition of the pool or spa water. Based on these factors, pool or spa owners of a post-10/01/99 pool or spa shall reduce the user load if pre-10/01/99 conditions indicate the need. The maximum user load in a post-10/01/99 pool or spa shall be based on the following:

(1) In post-10/01/99 pools, maximum load limit shall be in accordance with the following table:

Figure: Section 4(n)(1). [See page 88]

(2) In post-10/01/99 spas, the maximum user load shall not exceed 1 person per 10 square feet of water surface area.

(o) ***Interior walls for post-10/01/99 pools and spas.*** Post-10/01/99 Class B and C pools and spas shall have walls not greater than 11 degrees from plumb. Maximum allowable wall slope:

Figure: Section 4(o). [See page 88.]

(p) ***Walls joining floors for post-10/01/99 pools.*** Walls for post-10/01/99 Class B and C pools shall be joined to the floor with a radius tangent to the wall at a depth not less than 4 feet 6 inches in water depths 8 feet and greater and not less than 2 feet 6 inches in water depths of 3 feet. The tangent radius point at the wall shall progressively move between these points as the water depth progressively changes. Wall to floor radiuses shall not encroach on the minimum specified floor width, prescribed in §6(c)(7) of this title (relating to Decks, Entry/Exit, Diving Facilities and Other Deck Equipment at Post-10/01/99 and Pre-10/01/99 Pools and Spas). Class

A pools, where racing lanes terminate, shall have walls that are not greater than 1 degree from vertical.

(q) ***Floor slopes for post-10/01/99 pools.*** Floor slopes for post-10/01/99 pools shall, as a minimum meet the following requirements:

(1) All slopes shall drain and be uniform within the different activity areas of the pool.

(2) The slope of the floor from the shallow end wall toward the deep end shall not exceed 1 foot in 10 feet to the point of the first slope change.

(3) The point of the first slope change shall be defined as the point at which the floor slope exceeds 1 foot in 10.

(4) The slope of the floor from the point of the first slope change to the deep end shall not exceed 1 foot in 3 feet.

(5) The slope of the floor may vary in limited areas where access for persons with disabilities has been provided.

(r) ***Visual separation for post-10/01/99 pools.*** Any area of a post-10/01/99 pool that is less than 3 feet in depth shall be visually set apart from deeper areas of the pool by a minimum 4-inch wide tile band, painted line, or similar means of contrasting color across the floor at this point, see also §19(b)(1), (2), and (3) of this title (relating to Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(s) ***Zero depth entry design for post-10/01/99 pools.*** Zero depth entry designs for post-10/01/99 pools shall be allowed where the bottom of the pool in the beginner's area is designed and constructed to meet the pool deck surface at a slope not to exceed 1 in 12 to a water depth of 1-1/2 feet. In such pools where the water depth is less than 1-1/2 feet, floor inlets shall be provided and spaced uniformly with at least 1 inlet per 200 square feet or portion thereof.

(t) ***Offset ledges for post-10/01/99 pools.*** When provided in a post-10/01/99 pool, offset ledges shall:

(1) fall within 11 degrees from plumb starting at the junction of the pool wall and the design water level;

(2) have a slip-resistant surface; and

(3) have a maximum width of 8 inches and shall be in accordance with the following drawing of offset ledges:

Figure: Section 4(t)(3). [See page 89.]

(u) ***Underwater seat benches for post-10/01/99 pools and spas.*** Underwater seat

benches for post-10/01/99 pools and spas shall:

- (1) have a maximum seating width of 18 inches projecting from the wall at a depth not to exceed 24 inches below the design water level;
- (2) be located fully outside of the required minimum diving water envelope if the pool is intended for use with diving equipment;
- (3) be visually set apart and be provided with a solid or broken stripe at least 1 inch wide on the top surface along the front leading edge of the bench. The stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent;
- (4) have a slip-resistant surface; and
- (5) not be used as the required entry/exit access unless they are in conjunction with pool steps.

(v) ***Water lounges in post-10/01/99 pools and spas.*** Water lounges in post-10/01/99 pools and spas must:

- (1) be a minimum of 20 inches wide and provide a minimum of 10 square feet of horizontal surface adjoining on the edge of the pool over a distance of not less than 3 feet;
- (2) be horizontal and at a depth of 2 inches to 10 inches below the water surface;
- (3) be visually set apart with a horizontal solid or broken stripe at least 1 inch wide on the top surface along the leading edge of horizontal surfaces of all edges not adjoining the pool wall. The stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent;
- (4) be located fully outside of the required minimum diving water envelope if the pool is intended for use with diving equipment;
- (5) have a slip-resistant surface; and
- (6) be located in water depths of 4 feet or less.

(w) ***Special requirements for post-10/01/99 Class D wading pools.***

(1) Post-10/01/99 wading pools at a facility having Class A, B, or C pools shall be separate and physically set apart from beginner or shallow water areas by at least 15 feet of deck or a pool yard enclosure meeting the requirements of §20 of this title (relating to Pool Yard and Spa Yard Enclosures for Post-10/01/99 and Pre-10/01/99 Pools and Spas). If a pool yard enclosure is provided, clear visibility through the barrier shall be maintained.

(2) If a post-10/01/99 wading pool at a facility having a Class A, B, or C pool is within 35 feet of any deep-water area, a pool yard enclosure meeting the requirements of §20 of this title shall be provided to physically separate the wading pool from the deep-water area. Clear visibility through the barrier shall also be maintained.

(3) The maximum water depth in a post-10/01/99 wading pool shall be no greater than 24 inches. At the perimeter of the pool the vertical distance from the deck or walk to the bottom of the pool or to perimeter seating bench underwater shall not be greater than 18 inches. The vertical distance from the bottom of the pool to the deck or walk may be reduced and brought to zero at the most shallow point. The slope of zero level deck entries shall not exceed 1 foot in 12 feet.

(4) Floors of post-10/01/99 wading pools shall be uniform, sloped to drain with a maximum slope of 1 foot in 12 feet, and shall be slip-resistant.

Section 5. General Construction and Design for Pre-10/01/99 Pools and Spas.

(a) ***Structural design and materials for pre-10/01/99 pools and spas.*** Construction design and materials used in construction of pre-10/01/99 pools and spas shall comply with good public health engineering practices for construction of newly-built pools and spas prevailing at the time of original construction as required by Health and Safety Code, §341.064(g), and shall comply with these rules except as expressly provided otherwise.

(b) ***Prohibition of earth material for pre-10/01/99 pools and spas.*** Earth shall not be permitted as an interior finish in a pre-10/01/99 pool or spa. Clean sand or similar material, if used in a beach pool environment shall only be used over an impervious surface and designed to perform in such an environment, and controlled so as not to adversely affect the proper filtration, treatment system, maintenance, safety, sanitation and operation of the overall pool or spa. If sand or similar material is used, positive upflow circulation through the sand shall be provided as necessary to assure that sanitary conditions are maintained at all times.

(c) ***Interior color for pre-10/01/99 pools and spas.*** The colors, patterns, or finishes of a pre-10/01/99 pool or spa interior shall not obscure the existence or presence of objects or surfaces within the pool or spa. Surfaces of a pre-10/01/99 pool and spa shall be a light enough color so that an 8 inch black disk on the pool or spa floor at the deepest point of the pool or spa can be clearly and immediately seen by an observer standing on the pool or spa deck at a point closest to the disk.

(d) ***ANSI/NSFI Standard 50 for pre-10/01/99 pools and spas.*** When equipment is replaced on pre-10/01/99 pools and spas, such equipment that falls within the scope of ANSI and NSFI Standard 50 - 1996 (ANSI/NSFI 50 - 1996), shall meet the standard as confirmed by a testing laboratory. Conformity with standards noted above shall be evidenced by the listing or labeling of such equipment by such a laboratory or by separate documentation.

(e) ***Maximum user loading for pre-10/01/99 pools and spas.*** The maximum number of users to be allowed in a pre-10/01/99 pool or spa at one time will depend on a number of

factors, such as the type of pool or spa; indoor or outdoor location; surface area; operating characteristics of the water; purification system; quality and clarity of the pool or spa water, etc., the most significant factors being the surface area of the water in the pool or spa and the sanitary and physical condition of the pool or spa water. Based on these factors, pool or spa owners of a pre-10/01/99 pool or spa shall reduce the user load if pre-10/01/99 conditions indicate the need. The maximum user load in a pre-10/01/99 pool or spa shall be based on the following:

(1) In pre-10/01/99 pools, the maximum load limit shall be in accordance with the table in §4(n)(1) of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas).

(2) In pre-10/01/99 spas, the maximum user load shall not exceed 1 person per 10 square feet of water surface area.

Section 6. Decks, Entry/Exit, Diving Facilities, and Other Deck Equipment at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) *Decks for post-10/01/99 pools and spas.*

(1) Deck(s) for post-10/01/99 pools and spas shall be designed and installed in accordance with the engineering methods required by the department or the applicable local regulatory authority. This includes the design and quality of subbase, concrete mix, reinforcing, joints, etc.

(2) If a concrete deck is installed, in the absence of specific local engineering practices, the work shall be performed in accordance with ACI Standard 302.1R-1998, "Guide for Concrete Floor and Slab Construction."

(3) Decks, ramps, coping, steps, markings, brand insignias and similar surfaces shall be slip-resistant and easily cleanable.

(4) Soils supporting decks shall have adequate load-bearing capacities.

(5) The minimum continuous, unobstructed, usable deck width (which can include flush coping) shall conform with subparagraphs (A)-(G) of this paragraph, except that at a Class B, C, or D pool, as much as 35% of the deck in subparagraphs (A)-(E) of this paragraph may be replaced with other structures; however, in no case shall other structures restrict emergency access or create above deck structures that may be used as diving platforms or create other safety or sanitary hazards.

(A) Class A pool deck widths shall meet standards of the appropriate sanctioning body that regulates the type of competitions to be held.

(B) Class B pool deck widths shall be a minimum of 4 feet if the post-10/01/99 pool was built before September 1, 2004.

(C) Class B pool deck widths shall be a minimum of 6 feet if the post-

10/01/99 pool is built on or after September 1, 2004.

(D) Class C pool deck widths shall be a minimum of 4 feet.

(E) Class D pool deck widths shall be a minimum of 4 feet.

(F) Decks shall be provided surrounding at least 50% or more of the spa. Spa deck widths shall be a minimum of 4 feet, and the decks shall be continuous and unobstructed. Coping that is flush where it meets the deck may be included in determining minimum deck width compliance.

(G) A minimum of 4 feet of deck width shall be provided on the sides and rear of any diving equipment. A deck clearance of 3 feet shall be provided around all other deck equipment

(6) The minimum slope of the deck(s) shall be 1/8 inch per foot for textured, hand-finished concrete decks and 1/4 inch per foot for exposed aggregate concrete decks including decks covered with an epoxy finish and other specialty surfaces installed according to the manufacturer's instructions and good sanitation practices. Wood decks or indoor/outdoor carpeting shall not be located within the distance specified in paragraph (5) of this subsection unless approved by local regulatory authority.

(7) The maximum slope of all decks, other than wood decks, shall be one-half inch per foot, except for ramps. The maximum slope for wood decks shall be 1/8 inch per foot. Gaps shall be required between deck boards consistent with good engineering and safety practices with respect to the type of wood used.

(8) The maximum gaps between pool or spa decks and/or walkways, including joint material, shall be 3/16 inch of horizontal clearance with a maximum difference in vertical elevation of 1/4 inch.

(9) Joints where pool or spa coping meets concrete deck(s) shall be watertight.

(10) Joints where pool or spa coping meets concrete deck shall be installed to protect the coping and its mortar bed from damage as a result of movement of adjoining deck(s).

(11) Joints in deck(s) shall be provided to minimize the potential for cracks due to shrinkage or slight movement of the slab.

(12) The areas where concrete deck(s) join other concrete work shall be protected by expansion joints to protect the pool and spa adequately from the pressures of relative movements.

(13) The edge of deck(s) shall be rounded, tapered or otherwise shaped to eliminate sharp corners.

(14) Deck(s) shall be sloped to effectively drain to perimeter areas or to deck

drains. Drainage shall remove pool and spa splash water, deck cleaning water, and rainwater without leaving standing water deeper than 1/8 inch. Water from deck drainage shall not be mixed with pool or spa water.

(15) Site drainage shall direct all perimeter deck drainage, general site and roof drainage away from the pool area. Yard drains shall be installed, as needed, to prevent the accumulation or puddling of site water in the general area of the deck(s) and related improvements.

(16) Valves installed in or under any deck(s) shall be accessible through an access cover at least 10 inches in diameter and installed in a valve pit at least 10 inches in diameter to facilitate operation, service, and maintenance. Access covers shall be provided for valve pits for post-10/01/99 pools and spas.

(17) An adequate number of hose bibs and adequate hose shall be provided for washing down all areas of the deck. Cross-connection control device(s) as approved by the TCEQ or local regulatory authority shall be provided. When not in use, hoses shall be stored in such a manner to prevent a hazard from tripping.

(b) ***Decks for pre-10/01/99 pools and spas.***

(1) Decks for pre-10/01/99 pools and spas shall comply with the construction and design requirements in existence at the time the pool was originally built.

(2) In decks of pre-10/01/99 pools and spas, access covers shall be provided for any valve pits in the decks.

(3) In pre-10/01/99 pools and spas, the usable pool deck (which can include flush coping) must be continuous and unobstructed and shall conform to the applicable minimum width in subparagraphs (A)-(E) of this paragraph. However, at a Class B, C, or D pool, as much as 35% of the deck in subparagraphs (A)-(E) of this paragraph may be replaced with other structures. Other structures must not restrict emergency access or create above-deck structures that may be used as diving platforms or create other safety or sanitary hazards.

(A) Class A pool deck widths shall meet standards of the appropriate sanctioning body that regulates the type of competitions to be held.

(B) Class B pool deck widths shall be a minimum of 4 feet.

(C) Class C pool deck widths shall be a minimum of 4 feet.

(D) Class D pool deck widths shall be a minimum of 4 feet.

(E) A minimum of 4 feet of deck width shall be provided on the sides and rear of any diving equipment. A deck clearance of 3 feet shall be provided around all other deck equipment.

(c) ***Entries and exits for post-10/01/99 pools.*** Post-10/01/99 pools shall have a minimum of two entry/exits, e.g., one serving the shallow end and one serving the deep end. Entry/exits may consist of ladders, steps, recessed treads, zero depth entries or combinations thereof. Ladders, steps, and recessed treads shall conform to the following:

(1) In post-10/01/99 pools, areas where the vertical distance from the bottom of the pool to the deck or walk is 18 inches or less at the pool wall may be considered as an entry/exit.

(2) In post-10/01/99 pools, if the deep portion of the pool is more than 30 feet wide, opposite sides of the deep portion must each have an entry/exit.

(3) A means of entry/exit for the shallow end of a post-10/01/99 pool shall be located between the shallow end wall and the cross section at Point C, while a means of entry/exit for the deep end shall be between the deep end wall and the cross section at Point B, refer to pool dimensions at paragraph (e)(6) of this subsection, or if not a diving pool, they shall be so located as to reasonably serve the respective areas.

(4) A means of entry/exit shall be provided at a minimum of every 75 linear feet of wall or fraction thereof, in a post-10/01/99 pool.

(5) Steps, ladders, and recessed treads in a post-10/01/99 pool shall be located so as not to interfere with racing lanes if applicable.

(6) Steps, ladders, and recessed treads in a post-10/01/99 pool shall have slip-resistant surfaces.

(7) Steps in a post-10/01/99 pool shall comply with the following:

(A) Steps shall have a minimum unobstructed horizontal depth (i.e., horizontal run) of 12 inches and a minimum width of 20 inches.

(B) Risers for steps shall have a maximum uniform height of 10 inches, with the bottom riser height allowed to taper to zero.

(C) Underwater steps shall be provided with a horizontal solid or broken stripe at least 1 inch wide on the top surface along the front leading edge of each step. This stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent in nature and shall be a slip-resistant surface.

(D) The pool shall comply with applicable requirements for disability access for pools under federal, state, and local fair housing and handicap access laws. A handrail shall be provided in pools for which a lifeguard is required under these rules. When provided, handrails shall comply with the following requirements:

(i) Handrails, if removable, shall be installed in such a way

that they cannot be removed without the use of tools.

(ii) The leading edge of handrails for steps shall be no more than plus or minus 8 inches horizontally from the vertical plane of the bottom riser or extend into the pool to a water depth of 36 inches as measured from the horizontal step surface to the design water level.

(iii) The outside diameter of handrails shall range from 1.25 inches to 2 inches.

(8) Pool ladder(s) with ladder treads in post-10/01/99 pools shall comply with the following:

(A) The handrails and treads of the ladders shall be made entirely of corrosion-resistant materials.

(B) Two handrails shall be provided for each ladder, one on each side of the ladder.

(C) The clear horizontal distance between ladder handrails shall be a minimum of 17 inches and a maximum of 24 inches.

(D) There shall be a uniform vertical distance between ladder treads of not less than 7 inches or more than 12 inches.

(E) The vertical distance between the pool coping edge, deck, or step surface and the uppermost ladder tread shall be a maximum of 12 inches.

(F) The ladder treads shall have a minimum horizontal depth of 1.5 inches.

(G) Below the water level of the pool, the inside edge of the ladder hand rails shall not be further than 5 inches and the ladder treads shall not be further than 3.5 inches from the pool wall. See §4(l) of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas).

(9) Pool ladder(s) with recessed treads in walls of post-10/01/99 pools shall comply with the following:

(A) The handrails of the ladders shall be made entirely of corrosion-resistant materials.

(B) Two handrails shall be provided for each ladder, one on each side of the ladder.

(C) The clear horizontal distance between ladder handrails shall be a minimum of 17 inches and a maximum of 24 inches.

(D) There shall be a uniform vertical distance between recessed treads of not less than 7-inches or more than 12 inches.

(E) The vertical distance between the pool coping edge, deck, or step surface and the uppermost recessed tread shall be a maximum of 12 inches.

(F) The recessed treads shall have a minimum depth of 4.5 inches and a minimum width of 12 inches.

(G) The recessed treads shall drain into the pool but not be sloped more than 1/2 inch per foot, to prevent the accumulation of dirt and debris.

(10) Swimouts in the pool walls of post-10/01/99 pools shall comply with the following:

(A) Swimouts shall be completely outside the perimeter shape of the pool.

(B) When used as an entry/exit access, swimouts shall be provided with step(s) to meet the pool step requirements as stated in paragraph (7) of this subsection.

(C) When steps are used in swimouts, they shall be visually set apart with a horizontal solid or broken stripe at least 1 inch wide on the top surface along the leading edge of horizontal surfaces of each step. The stripe shall be plainly visible to persons on the pool deck. The stripe shall be a contrasting color to the background on which it is applied, and the color shall be permanent.

(D) Swimouts are allowed in the deep or shallow areas of the pool.

(E) The horizontal surface shall be a maximum of 20 inches below the design water level unless steps are provided in the swimout.

(F) Pools that do not utilize a perimeter overflow system shall provide a wall return inlet or outlet in the swimout to maintain sufficient circulation.

(d) ***Entries and exits for pre-10/01/99 pools.***

(1) Entries and exits in pre-10/01/99 pools shall comply with good public health engineering practices for construction of newly-built pools and spas prevailing at the time of original construction as required by Health and Safety Code, §341.064(g), and shall comply with these rules except as expressly provided otherwise.

(2) Pre-10/01/99 pools shall have a minimum of two entry/exits, one serving the shallow end if the vertical distance from the bottom of the pool to the deck is over 2 feet and one serving the deep end. Two entry/exits, one on each side of the deep end, shall be installed in the deep end if the pool is over 30 feet wide. Entry/exits may consist of ladders, steps, recessed

treads, zero depth entries or combinations thereof.

(3) Pre-10/01/99 pools shall comply with applicable requirements for disability access for pools under federal, state, and local fair housing and handicap access laws. A handrail serving all treads of stepped entry shall be provided in pools for which a lifeguard is required under these rules. When provided, handrails shall be installed in such a way that they cannot be removed without the use of tools.

(e) ***Diving facilities in post-10/01/99 pools.*** Except for diving facilities in pools covered by subsection (g) of this section, diving facilities in post-10/01/99 pools shall comply with the following:

(1) Post-10/01/99 pools with diving facilities in excess of 3 meters in height or pools designed for platform diving, shall comply with the pool dimension design requirements of one of the organizations listed in subsection (g) of this section.

(2) Post-10/01/99 Class B and C pools with diving areas shall conform to the minimum water depths, areas, slopes, and other dimensions shown in paragraph (6) of this subsection. Diving equipment on post-10/01/99 Class B and C pools shall have a fixed fulcrum unless the design and construction of the pools meets

Figure: Section 6(e)(6). [See page 90.]

the standards for a Class A pool as stated in subsection (g) of this section.

(3) At post-10/01/99 pools, there shall be a completely unobstructed clear vertical distance of 16 feet above any diving board measured from the center of the front end of the board. This area shall extend horizontally at least 12 feet behind, 12 feet to each side and 16 feet ahead of Point A, as described in paragraph (6) of this section.

(4) The tip of the diving board at a post-10/01/99 pool shall be located at directly above Point A, as described in paragraph (6) of this section, which is the reference point of all other dimensions. If the board is given more over hang, other dimensions shall move further outward by the same amount respectively.

(5) When other types of equipment or devices are provided for water entry at post-10/01/99 pools, installation of the equipment or devices shall be in accordance with the manufacturer's instructions regarding location, size, and depths of the required water envelope. At post-10/01/99 pools, a label shall be permanently affixed to the equipment or device and shall include the applicable items found in paragraph (9) of this subsection.

(6) Minimum dimensions for diving areas of post-10/01/99 Class B and C pools are contained in the table:

(7) At post-10/01/99 pools, supports, platforms, steps, and ladders for diving equipment shall be designed to carry the anticipated loads. Steps and ladders shall be of corrosion-resistant material, easily cleanable and with slip-resistant tread.

(8) In post-10/01/99 pools, diving equipment shall be installed according to manufacturer's instructions supplied with each unit.

(9) On post-10/01/99 pools, a label shall be permanently affixed to the diving equipment or diving board and shall include the following:

(A) manufacturer's name and address;

(B) board equipment length;

(C) identification as to diving or jump board;

(D) fixed fulcrum setting;

(E) reference to the applicable article(s) in the American National Standards Institute/National Swimming Pool Institute 1 - 1991 (ANSI/NSPI 1 - 1991), "Standards for Public Swimming Pools";

(F) weight limitations as specified by the board manufacturer, if available; and

(G) date of installation.

(10) In post-10/01/99 pools, post-10/01/99 diving stands higher than 21 inches measured from the deck to the top butt end of the board shall have steps or a ladder and handrails. Step treads shall be self-draining.

(11) On post-10/01/99 pools, platforms and diving equipment of 1/2 to 1 meter in height shall be protected with guardrail(s) that shall be at least 30 inches above the diving board and extend from the butt end of the equipment to the edge of the pool wall. All platforms or diving equipment higher than 1 meter shall have dual guardrails that are approximately 18 inches and 36 inches above the diving board. A means shall be provided on platforms or diving equipment higher than 1 meter to prevent slips or falls through the equipment onto the deck surface.

(12) On post-10/01/99 pools, diving equipment shall have slip-resistant tread surfaces.

(13) On post-10/01/99 pools, diving equipment shall be permanently anchored to the pool deck.

(14) At post-10/01/99 pools, the top of the diving board from the deck end to the tip shall be level or have an upward slope of 5/8 inch per foot maximum, provided elevation difference shall not exceed 6 inches from the deck end to the tip of the board.

(15) At post-10/01/99 pools, the maximum construction tolerances for the

installation of diving equipment shall be plus or minus 2 inches to allow for construction variances only on Class B and C pools.

(f) ***Diving facilities in pre-10/01/99 pools.*** Except for diving facilities in pools covered by subsection (g) of this section, diving facilities in pre-10/01/99 pools shall comply with the following:

(1) Diving areas for pre-10/01/99 Class A, B, and C pools shall conform to the minimum water depths, areas, slopes, and other dimensions in Figure: Section 6(e)(6), (page 90).

(2) In pre-10/01/99 pools, new diving stands higher than 21 inches measured from the deck to the top butt end of the board shall have steps or a ladder and handrails. Step treads shall be self-draining.

(3) When other types of equipment or devices are provided for water entry at pre-10/01/99 pools, installation of the equipment or devices shall be in accordance with the manufacturer's instructions regarding location, size, and depths of the required water envelope.

(g) ***Platform or diving facilities in post-10/01/99 and pre-10/01/99 pools.*** Post-10/01/99 Class A, B, and C pools containing platform or diving facilities shall be designed and constructed according to dimensions specified by either the Federation Internationale De Natation Amateur - 2002, the United States Swimming Association - 2002, the United States Diving Association - 2002, the National Federation of State High School Association - 2002, or the National Collegiate Athletic Association - 2003. Pre-10/01/99 Class A, B, and C pools containing platform or deck diving facilities shall conform to one of the above standards.

(h) ***Starting blocks in post-10/01/99 and pre-10/01/99 pools.*** In post-10/01/99 and pre-10/01/99 pools:

(1) Starting blocks shall be installed to meet the standards, depth specifications and other requirements of the national competitive pool organization having jurisdiction over the competition.

(2) Starting blocks shall only be used during official competition or when there is direct supervision by the team coach or another qualified instructor.

(3) Starting blocks shall be removed or secured to prevent inadvertent use when use of the starting blocks is not directly supervised.

(i) ***Play equipment for post-10/01/99 and pre-10/01/99 pools.*** Playground equipment that is installed on or after October 1, 1999 in a post-10/01/99 and pre-10/01/99 pool yard or spa yard and that is not covered by the Amusement Ride Safety Inspection and Insurance Act, Chapter 2151, Texas Occupations Code, shall be designed and installed according to the CPSC "Handbook for Public Playground Safety," No. 325-1997, or the ASTM "Standard Consumer Safety Performance Specification for Playground Equipment for Public Use," No. F1487-1995. (See subsection (k) of this section.)

(j) ***Slides for post-10/01/99 and pre-10/01/99 pools.*** Slides at post-10/01/99 and pre-10/01/99 pools that are of the slide configuration and type covered by the CPSC “Standard for Swimming Pool Slides” as published in the Code of Federal Regulations, 16 CFR, Part 1207, shall comply with those standards.

(k) ***Exclusion of post-10/01/99 and pre-10/01/99 pools.*** This section is not intended to cover amusement rides as defined in the Occupations Code, §2151.002 (relating to the Amusement Ride Safety Inspection and Insurance Act) and 28 TAC §§5.9001–5.9014, Subchapter J, Rules to Implement the Amusement Ride Safety Inspection and Insurance Act (that regulates large slides and other such types of amusement devices used at post-10/01/99 and pre-10/01/99 pool facilities).

Section 7. Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Suction outlet covers or grates for post-10/01/99 and pre-10/01/99 pools and spas.*** Suction outlet covers or grates must be provided for post-10/01/99 and pre-10/01/99 pools and spas in accordance with §10(c) of this title (relating to Suction Outlets and Return Inlets in Post-10/01/99 and Pre-10/01/99 Pools and Spas). If the owner or operator of a post-10/01/99 or pre-10/01/99 pool or spa knows or should have known in the exercise of ordinary care that a suction outlet cover or grate is missing, broken, or loose, the pool or spa must be closed immediately and the pump(s) must be shut off. The pool or spa must remain closed until a proper repair or replacement has been accomplished.

(b) ***General circulation requirements for post-10/01/99 pools and spas.*** In post-10/01/99 pools and spas, a circulation system consisting of pumps, piping, return inlets and suction outlets, filters, and other necessary equipment shall provide complete and uniform circulation of water and be designed to accommodate 100% of the turnover flow rate and maintain the distribution of disinfectant residual through all parts of the pool or spa.

(1) The system shall be designed to give the proper turnover rate based on the manufacturer's specified maximum pressure and flow through of the filter. (Also refer to §23(c) of this title (relating to Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas.) The equipment shall be of adequate size to turn over the entire pool or spa water capacity as follows:

(A) A turnover rate of 6 hours is required for post-10/01/99 pools with average depths of 4 feet or greater.

(B) Turnover rates in pools with shallower average depths shall be calculated based upon the formula: average depth in feet times 1.5 shall be the required turnover rate; for example, a pool with an average depth of 3 feet will require a 4.5 hour turnover rate.

(C) A spa recirculation system shall turn over the entire spa water capacity at a minimum of once every 30 minutes based on the manufacturer's recommended rate of the filter, with a clean filter.

(D) The turnover rate for a wading pool shall be at least once per hour.

(2) Circulation system components that require replacement or servicing shall be accessible for inspection, repair, or replacement, and shall be installed according to manufacturer's instructions.

(3) Pool and spa equipment and related plumbing shall be supported to prevent damage from misalignment, settlement, or similar activities. The equipment shall be mounted to minimize the potential for the accumulation of debris and moisture, following manufacturer's instructions.

(4) The water velocity in the pool and spa piping shall not exceed 10 feet per second for discharge piping (except for copper pipe where the velocity shall not exceed 8 feet per second), and 6 feet per second for suction piping, and 1.5 feet per second velocity through suction grates unless the suction outlet meets the requirements of ASME/ANSI A112.19.8M and is rated under such standard at a higher flow rate. Pool and spa piping shall be sized to permit the rated flows for filtering and cleaning without exceeding the maximum head of the pump.

(5) Circulation system piping, other than that integrally included in the manufacture of the maximum design operating pressure of the system or 25 pounds per square inch, whichever is less. This test shall be performed before the deck is poured, and the pressure shall be maintained throughout the deck pour.

(6) The circulation system piping and fittings shall be non-toxic, and shall be of material(s) able to withstand operating pressures and operating conditions. Polyvinyl chloride pipe shall bear the NSFI seal for potable water and be schedule 40 or stronger.

(7) Pool or spa piping subject to damage by freezing shall have a uniform slope in one direction and equipped with valves for adequate drainage or shall be capable of evacuating water to prevent freezing and possible damage. Pool or spa piping shall be adequately supported and designed to prevent entrapment of air, water or dirt. Provision shall be made for expansion or contraction of pipes.

(8) Equipment shall be designed and fabricated to drain the pool or spa water from the equipment, by removal of drain plugs and manipulating valves, or by other methods.

(9) Post-10/01/99 pools and spas shall be equipped with the following:

(A) a pump suction (vacuum) gauge installed as close to the suction side of the pump as possible without sacrificing accuracy;

(B) a filter inlet pressure gauge installed in the area of greatest pressure;

(C) a filter outlet gauge; and

(D) a flow meter that is located to show the rate of flow through the filter in gallons per minute and that is represented by the manufacturer to be accurate within 10%

of true flow and capable of measuring flow of at least 1.5 times the design flow rate of the circulation system.

(c) **General circulation requirements for pre-10/01/99 pools and spas.** In pre-10/01/99 pools and spas, a circulation system consisting of pumps, piping, return inlets, suction outlets, filters, and other necessary equipment shall provide complete and uniform circulation of water and be designed to maintain distribution of disinfectant through all parts of the pool or spa.

(1) Equipment in pre-10/01/99 pools shall be designed to provide a turnover rate of 8 hours or less, providing a minimum turnover of at least 3 times in 24 hours. Water quality as required in §23(b) of this title must be maintained at all times.

(2) Equipment in pre-10/01/99 spas shall be designed to provide a turnover rate of 30 minutes or less.

(3) Equipment in pre-10/01/99 wading pools shall be designed to provide a turnover rate of 1 hour or less unless the wading pool flows by gravity to a pool, in which case the turnover requirements for the pool shall apply to the wading pool.

(4) Piping in pre-10/01/99 pools and spas shall be of non-toxic material, resistant to corrosion and able to withstand operating pressures.

(5) In pre-10/01/99 pools, a vacuum cleaning system shall be provided. Any vacuum outlets in pre-10/01/99 pools and spas must comply with §10(g) of this title.

(6) Pumps on pre-10/01/99 pools and spas should be located so as to eliminate the need for priming whenever possible. If the pump or suction piping is located above the water level, the pump should be self-priming. Under normal conditions, the pump or pumps should supply the circulation flow rate at a dynamic head of at least 40 feet.

(7) Pre-10/01/99 pools and spas shall be equipped with the following:

(A) a pump suction (vacuum) gauge installed as close to the suction side of the pump as possible without sacrificing accuracy;

(B) a filter inlet pressure gauge installed in the area of greatest pressure;

(C) a filter outlet gauge; and

(D) a flow meter that is located to show the rate of flow through the filter in gallons per minute and that is represented by the manufacturer to be accurate within 10% of true flow and capable of measuring flow of at least 1.5 times the design flow rate of the circulation system.

(d) **Labeling of exposed piping for post-10/01/99 and pre-10/01/99 pools and spas.** Exposed piping in post-10/01/99 and pre-10/01/99 pools and spas shall be labeled to identify the

pipng function and direction of flow. The name of the liquid or gas and arrows indicating direction of flow, shall be permanently indicated on the pipe.

Section 8. Filters at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Filters for post-10/01/99 pools and spas.*** Filters for post-10/01/99 pools and spas shall meet ANSI/NSFI 50 - 1996.

(b) ***Replaced filters for pre-10/01/99 pools and spas.*** When equipment is replaced on pre-10/01/99 pools and spas, equipment falling within the scope of ANSI/NSFI 50 - 1996 shall meet that standard.

(c) ***Filter design and operation for post-10/01/99 pools and spas.*** Filters for post-10/01/99 pools and spas shall be designed so that after cleaning according to the manufacturer's instructions the system provides the water clarity noted in §23(b) of this title (relating to Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(d) ***Filter accessibility for post-10/01/99 pools and spas.*** Filters for post-10/01/99 pools and spas shall be installed so that filtration surfaces are accessible for inspection and service in accordance with manufacturer's instructions.

(e) ***Filter and separation tank pressure release for post-10/01/99 pools and spas.*** Filters or separation tanks for post-10/01/99 pools or spas shall have both manual and automatic means of air release that provide a slow, safe release of pressure as a part of their design.

(f) ***Filter and separation tank instructions for post-10/01/99 pools and spas.*** Filters and separation tanks for post-10/01/99 pools and spas shall have operation and maintenance instructions permanently installed on the filter or separation tank and shall include a warning statement not to start up the system after maintenance without first opening the air release and properly reassembling the filter and separation tank. The statement shall be readily visible from the area of the air release and the start-up controls.

(g) ***Observable waste discharge for post-10/01/99 pools and spas.*** Filters for post-10/01/99 pools and spas shall be provided with a readily observable free fall or sight glass installed on the waste discharge line in order that the filter washing progress may be observed. Sight glasses shall be readily removable for cleaning.

(h) ***Backwashing for post-10/01/99 and pre-10/01/99 pools and spas.*** Filters for post-10/01/99 and pre-10/01/99 pools and spas shall be backwashed and maintained according to manufacturer's instructions.

Section 9. Pumps and Motors at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Safe pump operation for post-10/01/99 and pre-10/01/99 pools and spas.*** A pump for a post-10/01/99 or pre-10/01/99 pool or spa shall not be operated if the owner or operator of the pool or spa knows or should have known in the exercise of ordinary care the main drain grate, suction outlet, or any suction outlet cover is missing, broken, or loose. If such a condition exists the pool or spa shall be closed immediately and remain closed until a proper repair or replacement has been

accomplished.

(b) ***Safe pump design and operation for post-10/01/99 pools and spas.*** The design, construction and installation of the pump(s) and component parts for post-10/01/99 pools and spas shall provide safe operation in accordance with manufacturer's instructions. Pumps for post-10/01/99 pools and spas shall comply with UL and/or NEMA requirements.

(c) ***Backflow prevention or cross-connection control devices for post-10/01/99 and pre-10/01/99 pools and spas.*** Any priming device for a post-10/01/99 or pre-10/01/99 pool or spa pump receiving piped water from a potable water supply shall be isolated from the potable supply by means of a cross-connection control device (backflow prevention device) approved by the TCEQ, the department, or state or local regulatory authority.

(d) ***Pump and motor provided for circulation for post-10/01/99 and pre-10/01/99 pools and spas.*** A pump and motor shall be provided for circulation of water in post-10/01/99 and pre-10/01/99 pools and spas. Performance of all pumps for post-10/01/99 pools and spas shall meet the filter design range of flow required for filtering as stated in §7(b)(1) of this title (relating to Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas) and cleaning the filters (if applicable) against the total dynamic head developed by the complete system and to meet the clarity as required in §23(b) of this title (relating to Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(e) ***Cleanable strainer for post-10/01/99 pools and spas.*** Post-10/01/99 pools and spas, except those with a vacuum filter, shall have a cleanable strainer or screen upstream of the circulation pump(s) to remove solids, such as debris, hair, and lint, and shall be readily accessible and cleaned routinely.

(f) ***Pumps and motors accessible for post-10/01/99 pools and spas.*** Pumps and motors for post-10/01/99 pools and spas shall be accessible for inspection and service in accordance with manufacturer's instructions.

(g) ***Durable pump seal for post-10/01/99 pools and spas.*** Components of mechanical pump seals for post-10/01/99 pools and spas shall be corrosion resisting and capable of operating under conditions normally encountered in pool or spa operation.

(h) ***Pump valves for post-10/01/99 pools and spas.*** If the pump for a post-10/01/99 pool or spa is below the design water level, valves shall be installed on suction and discharge lines to enable maintenance and removal of the pump without draining the pool or spa.

(i) ***Motors for post-10/01/99 pools and spas.*** Motors for post-10/01/99 pools and spas shall comply with the following:

(1) Motors shall have as a minimum an open, drip-proof enclosure as defined by the National Electrical Manufacturers Association (NEMA) Standard NEMA, MG1-1993, and be constructed electrically and mechanically to perform satisfactorily and safely under the conditions of load and environment normally encountered in pool or spa installations. Motors shall comply with UL requirements.

(2) Motors shall be capable of operating the pump under full load with a voltage variation of plus or minus 10% from the nameplate rating.

(3) Motors shall have thermal or current overload protection, either built in or in the line starter, to provide locked rotor and running protection.

Section 10. Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Suction outlets for post-10/01/99 and pre-10/01/99 pools and spas.*** Any suction outlet system for a post-10/01/99 or pre-10/01/99 pool or spa circulation or filtration system, booster system, automatic cleaning system, solar system, water feature, etc., must be designed to protect against a suction entrapment, evisceration or hair entrapment/entanglement hazard and must comply with this section. Drain covers and grates do not need to be flush with the floor. For the purpose of this section, skimmers are not considered to be suction outlets.

(b) ***Closure of post-10/01/99 and pre-10/01/99 pools and spas if the suction outlet is defective.*** If the owner or operator of a post-10/01/99 or pre-10/01/99 pool or spa knows or should have known in the exercise of ordinary care that a cover or grate of a suction outlet (including a vacuum outlet) is missing, broken, or loose, the pool or spa must be closed immediately and the pump(s) must be shut off. The pool or spa must remain closed until a proper repair or replacement has been accomplished. The pool or spa shall not be opened unless all covers or grates are securely installed according to subsection (c)(5) and subsection (g) of this section. Suction outlets must have cover(s) complying with subsection (c)(1) of this section or grate(s) complying with (c)(2) of this section, as well as covers for vacuum outlets complying with subsection (g) of this section.

(c) ***Approved suction outlet covers and grates in post-10/01/99 and pre-10/01/99 pools and spas.*** In post-10/01/99 and pre-10/01/99 pools and spas, a suction outlet must be provided with an approved cover or approved grate, as described below.

(1) An approved cover is a suction outlet drain cover that:

(A) is stamped showing that it has been certified by a nationally recognized testing laboratory as being in compliance with ASME/ANSI A112.19.8M;

(B) is stamped showing the gallons per minute approved by the testing laboratory for the cover and the designation ASME/ANSI A112.19.8M;

(C) does not have water flow through the cover that exceeds the maximum gallons per minute approved for the drain cover under ASME/ANSI A112.19.8M testing; and

(D) complies with paragraph (5) of this subsection.

(2) An approved grate is a suction outlet grate that:

(A) has a minimum diagonal measurement of 24 inches;

(B) has a flow velocity through the open area that does not exceed 1.5 feet per second; and

(C) complies with paragraph (5) of this subsection.

(3) In a post-10/01/99 pool that has hydraulically balanced main drains and meet all of the other requirements of this subsection, grates that are 12 inches by 12 inches or greater may be used if no approved cover is manufactured in that size, as long as the velocity through the open area of the grate does not exceed 1.5 feet per second.

(4) If a pre-10/01/99 pool has a drain cover or grate with a minimum diagonal measurement less than 24 inches and no approved cover is manufactured and available, a cover or grate that is not approved may be used as long as the velocity through the open area of the cover or grate does not exceed 1.5 feet per second.

(5) The installation of all approved covers or grates must be according to manufacturer's instructions. If the manufacturer specifies fasteners, they must be stainless steel or brass.

(d) ***Suction outlets in post-10/01/99 pools and spas.*** All post-10/01/99 pools and spas built after September 1, 2004, must comply with the following:

(1) In post-10/01/99 pools and spas, at least two hydraulically balanced suction outlets (suction fittings) with approved covers or approved grates per pump suction line, must be provided for each suction line. Multiple sets of pump suction lines are permitted in two or more suction outlets as long as they are hydraulically balanced and meet the requirements of subsection (c) of this section. The distance between the drain covers or grates of the suction outlet fittings must be no less than 3 feet and no more than 20 feet apart. Suction outlets that are main drains shall be located at the lowest point of the pool or spa floor. No means of isolating hydraulically balanced suction outlets is permitted that could allow one suction outlet to serve as the sole source of water to a pump. A single pipe to a pump suction inlet that serves two or more suction outlets may have a valve to shut off the flow to the pump.

(2) In post-10/01/99 pools and spas, water velocity in pipes in a pump-suction hydraulic system must not exceed 6 feet per second when 100% of the pump flow comes from the main drain system and any suction fitting in the main drain system is completely blocked. When 100% of the pump flow comes from the main drain system and one fitting is completely blocked, water velocity and flow rate at the remaining suction fittings must comply with the following:

(A) If the fitting is a grate with at least a 24-inch diagonal measurement, the velocity of the water at the grate shall not exceed 1.5 feet per second; and

(B) If the fitting does not have at least a 24-inch diagonal

measurement, it must have an approved cover and the flow rate shall not exceed the approved flow rate for that cover.

(3) Post-10/01/99 spas and pools that are 4 feet deep or less measured from the normal water level to the suction outlet and that have covers or grates that measure less than 24 inches diagonally, must also have a Safety Vacuum Release System (SVRS). No SVRS shall be installed to create an additional hazard (such as chlorine gas release, electrical danger, etc.) in the event of the deployment of the device. An SVRS is either an AVS or an SVRD, as defined below.

(A) An AVS is a system that provides indirect suction and a break to the atmosphere and that is limited to 5 feet of head. An AVS is described in the United States CPSC "Guideline for Addressing Potential Entrapment Hazards Associated with Pools and Spas," Publication No. 363-009801. The vent of an AVS must be at least 2 inches in diameter and if vented by pipe, it must have a vent cover that may be removed only with a tool. Vent systems, other than surge pits that do not have direct suction between the pool drain(s) and pump and that are installed after September 1, 2004, must be:

(i) a complete assembly that is engineered and manufactured offsite;

(ii) designed so that a 1/2-inch ball will not pass through any vent opening; and

(iii) installed and maintained so that the vent function will not be impaired by accumulation of vegetation or soil or by improper installation or maintenance of the vent system.

(B) An SVRD is a vacuum safety valve or pump shut-off device that has been specifically designed and manufactured to help prevent entrapment hazards, according to the manufacturer's description of the device, by either cutting off electricity to the pump or allowing air to enter the main drain line, or both after the main drain or other suction line becomes blocked.

(e) ***Upgrading suction outlet systems on pre-10/01/99 pools and spas.*** No later than April 1, 2006, a pre-10/01/99 pool or spa shall have an approved cover or approved grate on each suction outlet, except that a vacuum outlet shall be permanently sealed or have a cover that closes automatically and can be opened only with a tool. If the manufacturer's installation instructions require the use of nuts or bolts they must be stainless steel or brass. A pre-10/01/99 pool or spa is required to be upgraded to comply with all other provisions of either subsection (d) of this section or subsection (e)(1) or (e)(2) of this section, as applicable no later than April 1, 2006.

(1) In a pre-10/01/99 pool or spa, suction outlets that are 4 feet deep or less, as measured from the normal water level to the suction outlet, must have for each suction system:

(A) dual hydraulically balanced suction outlets with approved covers as described in subsection (c)(1) or approved grates as described in subsection (c)(4) of this section

with a distance between the suction outlet fittings no less than 3 feet and no more than 20 feet, and either an AVS or SVRD as described in subsection (d)(3) of this section;

(B) a single suction outlet with an approved grate with a minimum diagonal measurement of 24 inches and a flow velocity of 1.5 fps as described in subsection (c)(2) or (c)(4) of this section, and either an AVS or an SVRD as described in subsection (d)(3) of this section; or

(C) dual hydraulically-balanced, suction outlets with a distance between the suction outlet fittings no less than 3 feet and no more than 20 feet, each with a minimum diagonal measurement of 24 inches and a flow velocity through the open area of the grate that does not exceed 1.5 feet per second.

(2) In a pre-10/01/99 shallow pool or spa with water 3 feet deep or less that has no main drains or other suction outlets and the water turnover rate and the water quality required by these rules is maintained by gravity drainage from the shallow pool or spa to another deeper pool or spa that has a main drain, the shallow pool or spa is not required to have a main drain, other suction outlet or an SVRS, provided the deeper pool complies with these rules.

(3) In a pre-10/01/99 pool or spa, suction outlets that are more than 4 feet deep, as measured from the normal water level to the suction outlets, must have, for each suction system:

(A) two or more hydraulically-balanced suction outlets with a distance between the suction outlet fittings no less than 3 feet and no more than 20 feet, and with approved covers or grates as described in subsection (c)(1), (c)(2) or (c)(4) of this section; or

(B) a single suction outlet with an approved cover or approved grate as described in subsection (c)(1), (c)(2) or (c)(4) of this section, and either an AVS or an SVRD as described in subsection (d)(3) of this section.

(f) ***Stainless steel or brass fasteners for drain covers and grates in post-10/01/99 and pre-10/01/99 pools and spas.*** On a post-10/01/99 or pre-10/01/99 pool or spa, all suction outlet covers or grates must be designed to be opened only with the use of a tool. If the manufacturer of the cover or grate specifies that it should be installed with fasteners (e.g. screws or bolts), the fasteners must be stainless steel or brass.

(g) ***Vacuum outlets in post-10/01/99 and pre-10/01/99 pools and spas.*** If a post-10/01/99 or pre-10/01/99 pool or spa has a vacuum outlet, the outlet must be provided with a cover that automatically closes and automatically latches and that is designed to be opened only with the use of a tool. The cover must be installed according to manufacturer instructions and subsection (f) of this section. The cover must be securely closed and latched when the pool or spa is open for use. When a vacuum outlet is internally located in a skimmer that has a cover, a separate cover for the vacuum outlet is not required. If a vacuum outlet is provided in a post-10/01/99 pool or spa, it must be located in an accessible position at least 12 inches and no greater than 18 inches below the design water level or as an attachment to a skimmer. If a vacuum outlet is provided in a post-10/01/99 or pre-10/01/99 pool or spa, it must be permanently sealed in lieu

of having a cover.

(h) ***Skimmer equalizer lines in post-10/01/99 and pre-10/01/99 pools and spas.*** If skimmer equalizer lines are installed in post-10/01/99 pools or spas they must be installed with an approved equalizer wall or drain cover as described in subsection (c) of this section. Skimmer equalizer lines in pre-10/01/99 pools and spas shall either be permanently sealed or fitted with an approved equalizer wall or drain cover as described in subsection (c) of this section.

(i) ***Automatic cleaners not operated while a post-10/01/99 or pre-10/01/99 pool or spa is in use.*** In a post-10/01/99 or pre-10/01/99 pool or spa, an automatic bottom or side cleaner that could provide a means of entanglement or entrapment must not be in the pool or operated while the facility is open for use.

(j) ***Check valves in post-10/01/99 and pre-10/01/99 pools and spas.*** Check valves shall not be used in a post-10/01/99 or pre-10/01/99 pool or spa except as provided in this subsection. Check valves may be used only when there is no other manual or practical way of preventing drainage from elevated pools or sections of pools. When check valves are used, they shall not be on the suction side of the pump, on any system that has single source suction (excluding skimmers), or where the manufacturer of an SVRS that is used on the system does not allow check valves.

(k) ***Velocity in suction piping in pre-10/01/99 pools and spas.*** In pre-10/01/99 pools and spas where the suction piping is not accessible, water velocities in the piping may exceed 6 feet per second if:

(1) the water velocity through a grate on any suction outlet does not exceed 1.5 feet per second; and

(2) the gallons per minute rating of an ANSI/ASME-approved cover on any suction outlet is not exceeded by the gpm flow of the pool as measured by the flow meter.

(l) ***Replacement cover on hand for post-10/01/99 and pre-10/01/99 pools and spas.*** For post-10/01/99 and pre-10/01/99 pools and spas, a replacement cover with stainless steel or brass fasteners (if fasteners are specified by the manufacturer) must be kept on site. This subsection does not apply to grates that are 24 inches or larger, measured diagonally.

(m) ***Clearance beneath a main drain cover or grate for post-10/01/99 pools and spas.*** Post-10/01/99 pools and spas must have a sump below the open area of a drain cover or grate that meets the following:

(1) Clearance between the cover or grate and the closest part of the suction pipe must be at least one and one half times the diameter of the suction pipe or 8 inches, whichever is less; and the sump must be below all of the open area of a drain cover or grate; or

(2) Cover assemblies that do not connect directly to the circulation piping must have either the manufacturer's recommended sump below the outlet cover, or a field built sump of the design specified by the manufacturer. Post-10/01/99 pools and spas constructed prior

to the effective date of these rules may comply with clearance standards in subsection (n) of this section in lieu of this subsection.

(n) ***Clearance beneath a main drain cover or grate for pre-10/01/99 pools and spas.*** Pre-10/01/99 pools and spas must have clearance below the open area of a drain cover or grate that meets the following:

(1) Clearance between the cover or grate and the closest part of the suction pipe must be equivalent to at least the diameter of the suction pipe serving the suction outlet or 8 inches, whichever is less; or

(2) Cover assemblies that do not connect directly to the circulation piping must have either the manufacturer's recommended sump below the approved suction outlet cover or grate, or a field built sump of the design specified by the manufacturer of the approved suction outlet cover or grate.

(o) ***Return inlets in post-10/01/99 pools and spas.*** Return inlets from the circulation system in post-10/01/99 and pre-10/01/99 pools and spas must be designed to not constitute a hazard to the user. Return inlets in post-10/01/99 pools and spas must comply with the following:

(1) A post-10/01/99 pool must have one return inlet for each 300 square feet of surface area or portion thereof with a minimum of two return inlets per pool. A spa must have one return inlet for each 150 square feet of surface area or portion thereof with a minimum of two return inlets per spa; and

(2) Return inlets in a post-10/01/99 pool or spas must not project more than 1 inch beyond the pool or spa wall surface and must be submerged at least 12 inches below the design water level. Return inlets in the pool or spa bottom must be flush with the floor. Bottom inlets will be considered to have an area of influence within a radius of 15 feet.

Section 11. Surface Skimming and Perimeter Overflow (Gutter) Systems for Post-10/01/99 Pools and Spas.

(a) ***Surface skimming or perimeter overflow system required for post-10/01/99 pools and spas.*** A surface skimming system or perimeter overflow (gutter) system shall be designed and constructed to skim the surface of a post-10/01/99 pool or spa when the water level is maintained within the operating water level range of the system's rim or weir device.

(b) ***Safe design of surface skimming or perimeter overflow system for post-10/01/99 pools and spas.*** Surface skimmers and perimeter overflow systems in post-10/01/99 pools and spas shall be designed and installed to prevent body or limb entrapment. See §4(d) of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas) regarding equipment meeting any applicable NSF International Standard 50 standards.

(c) ***Specific requirements for surface skimmer systems for post-10/01/99 pools and spas.*** Surface skimmer systems for post-10/01/99 pools and spas shall comply with the following:

(1) The return inlet(s) shall be located so as to help bring floating particles within range of the skimmers.

(2) If surface skimmers are used, they shall be located to maintain effective skimming action throughout the pool or spa.

(3) If surface skimmers are used in a pool as the sole overflow system, at least one surface skimmer shall be provided for each 500 square feet or fraction thereof of the water surface area (recessed areas such as steps, and swimouts shall not be considered in the calculation).

(4) If surface skimmers are used on a spa, one surface skimmer shall be provided for each 150 square feet of the water surface area, or fraction thereof.

(5) The circulation system shall be designed to handle 100% of water flow through surface skimmers.

(6) Flow rate shall be no less than 3 gallons per minute per skimmer per weir inch.

(7) Skimmer covers located on a walking surface shall be securely seated, slip-resistant, of sufficient strength to withstand normal deck use, and not constitute a tripping hazard.

(d) ***Specific requirements for perimeter overflow (gutter) systems for post-10/01/99 pools and spas.*** Perimeter overflow (gutter) surface skimming systems for post-10/01/99 pools and spas shall comply with the following:

(1) If a perimeter overflow (gutter) surface-skimming system is used as the sole surface skimmer system, the system shall extend around a minimum of 50% of the perimeter of the pool or spa.

(2) If a perimeter overflow (gutter) surface skimming system is used, it shall be connected to the circulation system with a system surge capacity not less than 1 gallon for each square foot of pool surface; gutter as well as gutter piping capacity may be counted as surge capacity.

(3) If a perimeter overflow (gutter) surface skimming system is used in a spa, it shall be connected to the circulation system with a system surge capacity not less than 2 gallons for each square foot of spa surface.

(4) The hydraulic capacity of a perimeter overflow (gutter) surface skimming system shall be capable of handling 100% of the circulation flow.

(5) The operating water level for a perimeter overflow (gutter) surface skimming system shall be slightly over the overflow (gutter) lip or, in the case of surface skimmers, within the vertical operating range of the skimmers.

Section 12. Electrical Requirements for Post-10/01/99 and Pre-10/01/99 Pools, Spas, Pool Yards, and Spa Yards.

(a) ***National Electrical Code (NEC) for post-10/01/99 pools and spas.*** Electrical equipment and lines at post-10/01/99 pools and spas and at restrooms, equipment rooms and other facilities serving post-10/01/99 pools or spas shall:

(1) comply with the 1996 NEC if the pool or spa was constructed between October 1, 1999 and September 1, 2004;

(2) comply with applicable provisions of this section, applicable local electrical codes, and the 2002 NEC if the pool or spa was constructed on or after September 1, 2004; or

(3) comply with the local electrical code to the extent the local electrical code is more restrictive than the NEC.

(b) ***National Electrical Code (NEC) for pre-10/01/99 pools and spas.*** Electrical equipment and lines at pre-10/01/99 pools and spas and at restrooms, equipment rooms and other facilities serving pre-10/01/99 pools and spas shall comply with applicable provisions of this section, local electrical codes, and the NEC in effect on the original construction date of the pool or spa. If a pool or spa was built before June 13, 1965, the pool shall comply with good public health engineering and safety practices in effect at the time, applicable local electrical codes, and subsections (d), (e), (f), (g), (h), (j), (k), (l), and (m) of this section to the extent they are applicable to pre-10/01/99 pools.

(c) ***National testing for electrical equipment for post-10/01/99 pools and spas.*** Electrical equipment for post-10/01/99 pools and spas shall be approved by a nationally recognized electrical testing laboratory, such as UL, at the time of installation, evidenced by the listing or labeling on the equipment. Junction boxes shall comply with applicable provisions of UL-1241 regarding Junction Boxes for Swimming Pool Fixtures at the time of installation. Pumps, filters, and chlorinators shall comply with UL-1081, "Swimming Pool Pumps, Filters and Chlorinators," at the time of installation.

(d) ***Manufacturer's instructions for proper installation in post-10/01/99 and pre-10/01/99 pools and spas.*** Electrical equipment and related electrical components for post-10/01/99 and pre-10/01/99 pools and spas shall comply with the manufacturer's installation instructions for such equipment and components.

(e) **Ground fault circuit interrupters in post-10/01/99 and pre-10/01/99 pools and spas.** Each electrical outlet in the pool yard or spa yard of a post-10/01/99 or pre-10/01/99 pool or spa and in a dressing or sanitary facility serving a post-10/01/99 or pre-10/01/99 pool or spa shall be protected with a ground fault circuit interrupter (commonly referred to as a “GFI” or “GFCI”). Each electrical line to an underwater light in a post-10/01/99 or pre-10/01/99 pool and spa shall be protected with a ground fault circuit interrupter that is located in the circuit breaker for the light at the breaker box or in an outlet through which the power for the light passes.

(f) **Location of ground fault circuit interrupters.** If a switch that serves lights or equipment (other than pumps and underwater lights) in a post-10/01/99 or pre-10/01/99 pool or spa is between 5 and 10 feet from the wall of the pool or wall of the spa, each electrical line to such switch shall be grounded and shall have a ground fault circuit interrupter located:

- (1) in the circuit breaker for the light;
- (2) in the equipment circuit that powers the switch at the breaker box; or
- (3) in an outlet through which the power for the switch passes.

(g) **NEC compliance with ground fault interrupters.** All ground fault circuit interrupters and circuit breakers shall comply with 2002 NEC requirements. Other electrical equipment, including pumps, must be grounded in accordance with subsection (h) of this section.

(h) **Bonding and grounding in post-10/01/99 and pre-10/01/99 pools and spas.** To reduce electrical shock, electrical equipment serving a post-10/01/99 or pre-10/01/99 pool or spa shall be grounded according to ANSI/UL 1563 - 1995, “Standard for Electric Hot Tubs, Spas and Associated Equipment”, and the 2002 NEC. All post-10/01/99 pools shall comply with applicable bonding and grounding requirements of the 2002 NEC. All post-10/01/99 spas and hot tubs shall comply with bonding and grounding requirements of ANSI/UL 1563 - 1995 “Standard for Electric Hot Tubs, Spas and Associated Equipment.” Pumps in post-10/01/99 and pre-10/01/99 pools and spas shall be both internally and externally grounded. If a pool or spa was built between October 1, 1999 and September 1, 2004, and if the 2002 NEC requirements referred to in this subsection are more restrictive than the 1996 NEC, the 1996 NEC requirements shall apply.

(i) **[Plastic-coated or epoxy-coated rebar.]** Plastic-coated or epoxy-coated rebar in pools or spas constructed on or after September 1, 2004, shall not be used.

(j) **Electrical line clearances for post-10/01/99 and pre-10/01/99 outdoor pools, spas, pool yards, and spa yards.** For outdoor post-10/01/99 and pre-10/01/99 pools, spas, pool yards and spa yards, electrical line clearances shall comply with the following:

(1) **Overhead lines above outdoor post-10/01/99 pools and spas.** Insulated overhead electrical lines above a post-10/01/99 pool or spa shall pass no closer than 22.5 feet to the water surface, deck, or permanently-anchored raft of the pool or spa as required in the 2002 NEC and shall pass no closer than 14.5 feet to the top of an observation stand, tower, diving platform, or diving board as required in the 2002 NEC. However, such lines may pass as low as

20 feet above the water surface, deck, or permanently anchored raft of the post-10/01/99 pool or spa if the pool or spa was built between October 1, 1999 and September 1, 2004. Non-insulated overhead electrical lines shall pass no closer to the pool or spa than the distances required in the 2002 NEC. A neutral wire for residential-type service is not considered a line for purposes of this subsection.

(2) *Overhead lines above outdoor post-10/01/99 pool yards and spa yards.* Insulated overhead electrical lines shall pass no closer than 20 feet to other surfaces of a pool yard or spa yard of an outdoor post-10/01/99 pool or spa. Non-insulated overhead electrical lines above such other surfaces shall pass no closer than the distances required in the 2002 NEC. A neutral wire for residential-type service is not considered a line for purposes of this subsection.

(3) *Overhead lines above outdoor pre-10/01/99 pools and spas.* Insulated overhead electrical lines above an outdoor pre-10/01/99 pool or spa shall pass no closer than 20 feet to the deck, water surface, or permanently-anchored raft of the pool or spa and shall pass no closer than 14.5 feet to the top of an observation stand, tower, diving platform or diving board. Non-insulated overhead electrical lines shall pass no closer to the pool or spa than the distances required in the 2002 NEC, unless the NEC in effect at the time of original construction of the pool or spa expressly allowed for a closer distance. A neutral wire for residential-type service is not considered a line for purposes of this subsection.

(4) *Overhead lines above outdoor pre-10/01/99 pool yards and spa yards.* Insulated overhead electrical lines shall pass no closer than 20 feet to other surfaces of an outdoor pool yard or spa yard of a pre-10/01/99 pool or spa. Non-insulated overhead electrical lines above such other surfaces shall pass no closer than the distances required in the 2002 NEC, unless the NEC in effect at the time of original construction of the pool or spa expressly allowed a closer distance. A neutral wire for residential-type service is not considered a line for purposes of this subsection.

(5) *Non-overhead lines.* Non-overhead electrical lines that are inside a pool yard or spa yard or within 20 feet outside the perimeter of the pool yard or spa yard:

(A) shall be at least 5 feet from the edge of the water in the pool or spa (except for lines serving underwater or overhead lighting); and

(B) shall, to the point of connection with an overhead lines, be either underground, encased in concrete, or completely inside a wall, building or conduit.

(k) ***Electrical disconnects for service personnel in post-10/01/99 and pre-10/01/99 pools and spas.*** Electrical disconnecting means for the protection of service personnel for post-10/01/99 and pre-10/01/99 pool and spa equipment shall be accessible for service personnel, located within sight from the pool or spa equipment, and located at least 5 feet from the inside walls of the pool or spa as required by the 2002 NEC, Chapter 6, §680.12 - Disconnecting Means. Each disconnecting means (i.e., turn-off switch) shall disconnect all ungrounded conductors (hot wires) to the equipment it serves. For example, a switch serving a 220-volt pump motor shall be able to turn off both hot wires at the same time. If electricity to equipment is supplied through a line that plugs into an outlet and if the line may be disconnected by

removing the plug from the outlet, a separate disconnect switch is not required for that equipment.

(l) ***Location of other electrical equipment for post-10/01/99 and pre-10/01/99 pools and spas.*** Electrical equipment, including switches, outlets, deck lights, pumps, and other electrical equipment at post-10/01/99 and pre-10/01/99 pools and spas, shall be located at least 10 feet from the inside wall of a post-10/01/99 or pre-10/01/99 pool or spa unless:

(1) the electrical equipment is at least 5 feet from the wall of the pool or spa and is separated from the pool or spa by a solid fence, wall or other permanent barrier at least 4 feet in height; or

(2) the electrical equipment is at least 5 feet from the wall of the pool or spa and:

(A) consists of only one outlet for an electrical line that is grounded, has a ground fault circuit interrupter, and has a locking mechanism covering the outlet;

(B) consists of one or more switches serving electrical lines that are grounded and that have ground fault circuit interrupter protection that is located in the circuit breaker for the equipment at the breaker box or in an outlet through which the power for the equipment passes; or

(C) consists of an electrical device other than an outlet or switch and complies with applicable NEC requirements at the time of installation.

(m) ***Emergency shutoff switch for post-10/01/99 and pre-10/01/99 pools and spas.*** On post-10/01/99 and pre-10/01/99 pools, a pump shutoff switch for use by pool users is not required. On post-10/01/99 and pre-10/01/99 spas, a pump shutoff switch for use by spa users is required and shall be:

(1) clearly labeled as “Emergency Spa Shutoff”;

(2) located within sight of the spa, or, there shall be a sign visible from the spa, in letters at least 1 inch tall, stating the location of the emergency shutoff switch;

(3) readily accessible to spa users;

(4) not behind a locked door or gate; and

(5) located no closer than 5 feet from the spa unless the switch is a non-electrical air switch.

(n) ***Electrical inspections during construction of post-10/01/99 pools and spas.*** The owner of a post-10/01/99 pool or spa constructed after September 1, 2004, shall have an electrician licensed in this state conduct a minimum of two inspections during and after the construction of a pool or spa to ensure that all electrical facilities serving the pool or spa are

constructed in compliance with this section. The first inspection shall be conducted to assure proper bonding of the pool or spa shell prior to the concrete pour and another inspection shall be conducted after all electrical equipment is installed and operating and prior to opening the facility to users. The inspections shall be done by the licensed electrician who installs the bonding and grounding equipment or by a governmental inspector who is a licensed electrician.

(o) ***Electrical safety of underwater lights in post-10/01/99 and pre-10/01/99 pools and spas.*** Underwater lights are not required in post-10/01/99 and pre-10/01/99 pools and spas. If the lights have no epoxy insulation, have cracked insulation, have spliced connection cords, or have been modified in violation of an applicable electrical code, they shall be replaced with lights complying with this section.

Section 13. Heating of Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Certification of heaters or boilers for post-10/01/99 and pre-10/01/99 pools and spas.*** If required by TDLR, both post-10/01/99 and pre-10/01/99 pool and spa heaters or boilers shall have a current certificate of operations from the TDLR. In addition, all pool and spa heater installation and energy sources for post-10/01/99 pools and spas shall be designed, constructed and operated to comply with applicable local, state, or federal codes or standards as well as the manufacturer's instructions.

(b) ***Heater installation and testing for post-10/01/99 pools and spas.*** Heaters using fossil fuels, such as natural gas, liquid petroleum gas, No. 2 fuel oil, or electricity for heating water for post-10/01/99 pools and spas and shall comply with the following:

(1) Heaters shall comply with: ANSI Z21.56 - 1994 "Standards for Gas-Fired Heaters" for gas-fired heaters, UL 1261-1992 for electrical heaters, or UL 559-1985 for heat pumps. They shall also comply with 30 TAC, TCEQ Chapter 117, Control of Air Pollution from Nitrogen Compounds, Subchapter D, Small Combustion Sources, at the time of construction of the pool or spa, including requirements related to ASME ratings and low NO_x emissions.

(2) Heaters shall be installed on a surface with sufficient structural strength to support the heater when it is full of water and operating. The heater shall be level and stationary after plumbing, gas and/or electrical connections are completed.

(3) Heaters requiring a non-combustible surface per the manufacturer, shall be placed on a concrete or other accepted surface in accordance with ANSI Z21.56 - 1994, "Gas-Fired Heaters."

(4) Heaters shall be installed and maintained with at least the minimum clearances to combustibles for which the heater has been tested as specified by the manufacturer.

(5) Heaters shall have adequate ventilation in order to ensure proper operation.

(6) Heaters shall be grounded and bonded to reduce electrical shock hazard.

(7) Heaters shall be wired to ensure they will not turn on when the pump is off.

(8) Water flow through heaters, bypass plumbing installed, cross-connection protection, and heat sinks shall be installed in accordance with manufacturer and TCEQ specifications or the department or other state or local regulatory authority.

(c) ***Temperature and thermometer for post-10/01/99 and pre-10/01/99 spas.*** The following shall apply to post-10/01/99 and pre-10/01/99 spas:

(1) The maximum temperature of the water shall not exceed 104 degrees Fahrenheit (40 degrees Centigrade).

(2) A break-resistant thermometer (plus or minus 1 degree Fahrenheit tolerance) that is designed for use in spas shall be available for spa users and staff to monitor spa temperature.

(3) The control for the temperature of the water in the spa shall not be accessible to the spa user.

(d) ***Heating energy source for post-10/01/99 pools and spas.*** The heating energy source for post-10/01/99 pools and spas shall comply with the following:

(1) Pool and spa heater energy sources shall be designed, constructed and operated to comply with applicable local, state, or federal codes or standards as well as the manufacturer's instructions.

(2) The natural gas energy supply piping shall comply with manufacturer's instructions and ANSI Z223.1 - 1996, "National Fuel Gas Code."

(3) Gas lines shall have a gas cock, properly sized and readily accessible outside the jacket, to stop the flow of natural gas for heater service or emergency shutdown.

(4) Where liquid petroleum gas appliances are used, they shall be installed in accordance with ANSI/NFPA 58 - 1998, "Storage and Handling of Liquefied Petroleum Gases."

(5) The storage tank, supply piping and regulator shall be adequately sized to ensure operating fuel pressures as specified by the appliance manufacturer.

(6) Propane appliances located in a pit or enclosed area shall be installed in accordance with ANSI/NFPA 58 - 1998 standards.

Section 14. Pool or Spa Water Supply for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Initial fill water for post-10/01/99 and pre-10/01/99 pools and spas.*** The water supply used to fill a post-10/01/99 or pre-10/01/99 pool or spa shall be from a potable water system that: (i) meets applicable standards of 30 TAC, Chapter 290, "Public Drinking Water,"

Subchapter D, “Rules and Regulations for Public Water Systems”; (ii) meets the approval of the department or local regulatory authority; or (iii) is from a pre-10/01/99 pool’s water that meets or exceeds all relevant conditions in this standard.

(b) ***Make-up water source for post-10/01/99 and pre-10/01/99 pools and spas.*** In a post-10/01/99 or pre-10/01/99 pool or spa, water added to maintain the pool or spa water level, water used as vehicle for disinfectants or chemicals, and water used for pump priming shall be: (i) potable water from a water system meeting applicable standards of 30 TAC, Chapter 290, “Public Drinking Water,” Subchapter D, “Rules and Regulations for Public Water Systems,” or local regulatory authority; or (ii) water from the pool or spa itself.

(c) ***No direct connection to wastewater system for post-10/01/99 and pre-10/01/99 pools and spas.*** In a post-10/01/99 or pre-10/01/99 pool or spa, no direct mechanical (hard) connection shall be made between the pool or spa, chlorinating equipment, or the system of piping for the pool or spa and between the sanitary sewer system, septic system, or other wastewater disposal system.

(d) ***Fill spout for post-10/01/99 pools and spas.*** An over-the-rim spout, if used in a post-10/01/99 pool or spa, shall be located under a diving board, adjacent to a ladder, or otherwise properly shielded so as not to create a trip or other hazard. Its open end shall have a secured soft pliable end (for example, a short section of a rubber hose) to prevent injury to patrons and shall not protrude more than 2 inches beyond the edge of the pool or spa. The end of the soft pliable outlet shall be separated from the maximum possible pool or spa water level by an air gap at least two times the diameter of the pipe. Other methods for addition of water to the pool may be used as long as cross-connections control and other safety considerations are adequately addressed.

(e) ***Fill spout for pre-10/01/99 pools and spas.*** An over-the-rim spout, if used in a pre-10/01/99 pool or spa, shall have a secure soft pliable end (for example, a short section of rubber hose) to prevent injury to patrons and shall not protrude more than 2 inches beyond the edge of the pool or spa. The end of the soft pliable outlet shall be separated from the maximum possible pool or spa water level by an air gap at least two times the diameter of the pipe.

Section 15. Drinking Water at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Potable water source for post-10/01/99 and pre-10/01/99 pools and spa facilities.*** The water supply serving a post-10/01/99 or pre-10/01/99 pool or spa facility, such as drinking water fountains, plumbing fixtures, lavatories and showers shall be a potable water system and shall meet applicable standards of 30 TAC, Chapter 290, Public Drinking Water, Subchapter D, Rules and Regulations for Public Water Systems.

(b) ***No cross-connections at post-10/01/99 and pre-10/01/99 pools and spas.*** At a post-10/01/99 or pre-10/01/99 pool or spa, no direct mechanical connection shall be made between the potable water supply and the pool or spa, chlorinating equipment, or the system of piping for the pool or spa, unless it is protected against cross-connection in a manner in compliance with 30 TAC, Chapter 290, Public Drinking Water, Subchapter D, Rules and Regulations for Public Water Systems, 25 TAC§290.44(h) (relating to Water Distribution)

concerning back siphonage or local regulatory authority.

(c) ***Drinking water fountain for post-10/01/99 pools and spas.*** At least one drinking fountain shall be provided and available to users at a post-10/01/99 pool or spa. The drinking water may be tap water or chilled water.

(d) ***Location of waterlines for post-10/01/99 pools and spas.*** Location of water lines, in relation to wastewater lines, at a post-10/01/99 pool or spa facility shall be in compliance with 30 TAC, Chapter 290, Public Drinking Water, Subchapter D, Rules and Regulations for Public Water Systems, 25 TAC§290.44(e) concerning location of waterlines or local regulatory authority.

Section 16. Waste Water Disposal at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Filter backwash disposal for post-10/01/99 and pre-10/01/99 pools and spas.*** Filter backwash water and pool or spa drainage water from post-10/01/99 and pre-10/01/99 pools and spas shall be discharged or disposed of in accordance with the requirements of TCEQ or local regulatory authority.

(b) ***No direct connection between a wastewater system and a post-10/01/99 or pre-10/01/99 pool or spa.*** There shall be no direct physical connection between a wastewater disposal system and a drain or recirculation system of a post-10/01/99 or pre-10/01/99 pool or spa. Backwash water or pool and spa draining water, shall be discharged through an air gap formed by positioning the discharge pipe opening at least two pipe diameters above the overflow level of any confining barriers that could cause flooding and submergence of the discharge opening, in the event that the disposal system should fail or by other means in accordance with TCEQ or other local regulatory requirements. Splash screening barriers are permitted as long as they do not destroy air gap effectiveness.

(c) ***Location of on-site sewage facility wastewater disposal lines for post-10/01/99 and pre-10/01/99 pools and spas.*** The location of on-site sewage facility wastewater disposal lines at a post-10/01/99 or pre-10/01/99 pool or spa shall be in compliance with 30 TAC, Chapter 285, On-site Sewage Facilities, Subchapter D, Planning, Construction and Installation Standards for OSSF's, §285.31 (relating to Selection Criteria for Treatment and Disposal Systems) or local regulatory requirements.

(d) ***Location of other wastewater disposal facilities or lines for post-10/01/99 and pre-10/01/99 pools and spas.*** The location of other wastewater disposal facilities or lines at a post-10/01/99 or pre-10/01/99 pool or spa shall meet applicable standards of the 30 TAC, Chapter 307, Texas Surface Water Quality Standards, Chapter 308, Criteria and Standards for the National Pollutant Discharge Elimination System, Chapter 311, Watershed Protection, and Chapter 315, Pretreatment Regulations for Post-10/01/99 and Pre-10/01/99 Sources of Pollution or local regulatory authority if local regulations are more strict.

Section 17. Disinfectant Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Disinfectant equipment and practices at post-10/01/99 and pre-10/01/99 pools and spas.*** Disinfectant equipment and practices at post-10/01/99 and pre-10/01/99 pools and spas shall comply with the following:

(1) Disinfectant equipment, installation, and use shall comply with ANSI/NSFI 50 - 1996, "Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs".

(2) Disinfectant feed systems shall have the capacity to maintain up to 5 parts per million chlorine or approved equivalent for outdoor pools and up to 3 parts per million chlorine or approved equivalent for indoor pools, under all conditions of intended use. The disinfectant feed system at a post-10/01/99 outdoor spa shall have the capacity to maintain up to 8 parts per million chlorine or approved equivalent and up to 5 parts per million chlorine or approved equivalent in a post-10/01/99 indoor spa.

(3) Chlorine or bromine residual or other method of disinfectant approved by the department shall be maintained in the pool or spa water to meet the requirements of §24(a) of this title (relating to Water Quality at Post-10/01/99 and Pre-10/01/99 Pools and Spas). Disinfection equipment shall be selected and installed so that continuous and effective disinfection can be achieved under all conditions. The use of elemental gas chlorine shall be in compliance with §18 of this title (relating to Gas Chlorination at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(4) The pool or spa water shall be continuously disinfected by a disinfecting agent whose residual can be easily measured by simple and accurate field tests.

(5) Personnel responsible for the operation of the disinfection agent and other potentially hazardous chemicals shall be properly trained. Protective equipment and clothing, including rubber gloves and goggles, and any other protective gear and safety information shall be provided.

(6) Disinfection agents or other chemicals and feed equipment shall be stored in such a manner that pool and spa users shall not have access to such facilities and/or chemicals. Dry chemicals shall be stored off the floor in a dry, above ground level room and protected against flooding or wetting from floors, walls, and ceiling.

(7) All chemical bulk and day tanks shall be clearly labeled to indicate the tank's contents.

(8) Solution containers shall be provided with a cover to prevent the entrance of dust, insects, and other contaminants.

(9) Chlorine compounds shall not be stored in the same area as petroleum products as required in 25 TAC §§295.1-295.8 and §295.10 (relating to Hazardous communications).

(10) Chlorine, pH or other chemical control equipment that automatically

adjusts chemical feed based on demand, shall be provided if needed in order to meet §24(a) of this title.

(11) If ancillary non-chlorine or non-bromine disinfectants are used, they shall be used in addition to chlorine or bromine or other approved equivalent, see §24(a) of this title.

(12) Disinfectant agents for pools and spa shall be registered for use by the United States Environmental Protection Agency.

(13) Supplemental hand feeding of disinfectant or other chemicals directly into the pool or spa must not be done when the pool or spa is occupied by users.

(14) Pool and spa skimmer baskets shall not be used as chemical feeders.

(b) ***Chemical feeders at post-10/01/99 and pre-10/01/99 pools and spas.*** Chemical feeders at post-10/01/99 and pre-10/01/99 pools and spas shall:

(1) be installed, maintained and operated in accordance with the manufacturer's instructions;

(2) be installed so that the gas or solution is introduced downstream from the filter and heater and, if possible, at a point lower than the heater outlet fitting or according to manufacturer's instructions;

(3) incorporate failure-proof features so that the chemical cannot feed into the pool or spa, the pool or spa piping system, water supply system, or the pool and spa enclosure if equipment or power fails; and chemical feed pumps shall be wired so they cannot operate unless there is adequate return flow to properly disburse the chemical throughout the pool or spa as designed;

(4) be regulated to ensure constant feed with varying supply or back pressure;

(5) be designed to prevent siphoning from the recirculation system to the solution container and to prevent the siphoning of the chemical solution into the pool or spa;

(6) have a graduated and clearly marked dosage adjustment to provide flows from full capacity to 10% of such capacity and be capable of continuous delivery within 10% of the dosage at any setting;

(7) be provided with make-up water supply lines to chemical feeder solution containers that have an air gap or other acceptable cross-connection control; and

(8) comply with ANSI/NSFI 50 - 1996, "Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs" except as otherwise noted in §10(h) of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas). Chemicals used in a disinfection system for a post-10/01/99 or pre-10/01/99 pool or spa should be those complying with the instructions of the system's manufacturer and shall not

be of a type or used in a manner that would invalidate the ANSI/NSFI 50 - 1996 rating for the system equipment.

Section 18. Gas Chlorination for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***No gas chlorination to be installed after September 1, 2004.*** Gas chlorination equipment shall not be installed on post-10/01/99 pools or spas constructed after September 1, 2004.

(b) ***Gas chlorination in pools and spas constructed before September 1, 2004.*** Post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas using gas chlorination shall comply with the following:

(1) Trained personnel shall be provided to comply with §17(b)(3) of this title (relating to Disinfecting Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(2) Two persons trained in the performance of routine chlorination operation and emergency procedures shall be readily available during normal operating hours.

(3) Pool personnel shall be informed about leak control procedures.

(4) Only trained designated personnel shall operate the chlorinator and change chlorine cylinders.

(5) Chlorination equipment shall be located so that failure or malfunction will have minimum effect on evacuation of pool users in an emergency.

(c) ***Chlorinators on post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas.*** On post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and the spas the chlorinator's regulator shall attach to the gas cylinder so that the injector is located at the point of injection. The vacuum line taking suction at the regulator shall deliver gas to the vacuum injector. They shall be designed to prevent the suction of water into the chlorination system if the booster pump fails to operate.

(d) ***Booster pumps on post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas.*** The booster pump water supply for the gas chlorinator injector on post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas shall be capable of producing the flow rate and pressure required by the manufacturer's instructions for proper operation of the equipment.

(1) Elemental chlorine feeders (chlorinators) shall be activated by a booster pump using recirculated water supplied via the recirculation system.

(2) The booster pump shall be interlocked to the filter pump to prevent feeding of chlorine when the recirculation pump is not running.

(e) ***Housing of chlorinators, cylinders of chlorine and associated equipment at post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas.*** The chlorinator, cylinders of chlorine, and associated equipment at post-10/01/99 pools and spas constructed before September 1, 2004, and pre-10/01/99 pools and spas shall be housed in a separate corrosion-resistant reasonably gas-tight room with a floor area adequate to the purpose. The following shall apply to housing structures:

(1) All enclosures shall be located at or above ground level.

(2) The enclosure shall:

(A) have ducts from the bottom of the enclosure to the atmosphere in an unrestricted area, and a motor-driven louvered exhaust fan capable of producing at least one air change per minute near the top of the enclosure for admitting fresh air; or

(B) have negative pressure ventilation as long as the facility also has gas containment and treatment equipment and procedures as prescribed by the Uniform Fire Code (UFC).

(3) A warning sign shall be posted on the exterior side of the doors that states in 4-inch letters, "DANGER CHLORINE."

(4) The doors to the chlorine room shall open away from the pool and open outward and have panic hardware.

(5) Electrical switches for the control of artificial lighting and ventilation shall be on the outside of the enclosure adjacent to the door. Adequate lighting shall be provided.

(6) At least one door shall have a view port to permit the operators to look into the room before entering.

(7) The door shall be kept locked when the chlorine room is not being serviced.

(f) ***General gas chlorine safety features at post-10/01/99 pools and spas constructed before September 1, 2004 and pre-10/01/99 pools and spas.*** The following gas chlorination safety features shall be required at post-10/01/99 pools and spas constructed before September 1, 2004 and pre-10/01/99 pools and spas:

(1) Two full-face self-contained breathing apparatus (SCBA) or supplied air respirators that meets Occupational Safety and Health Administration (OSHA) or Mine Safety Health Administration (MSHA) standards shall be provided for protection against chlorine in the event of a leak. This equipment shall have sufficient capacity for the purpose intended. All applicable local, state, or federal requirements concerning the proper handling of chlorine shall be followed.

(2) Containers may be stored indoors or outdoors. Full and empty cylinders

shall be segregated and appropriately tagged. Cylinders, empty or full, shall always be stored in an upright position and properly secured. Cylinders shall be chained to a wall or scale support. Storage conditions shall:

- (A) minimize external corrosion;
- (B) be clean and free of trash;
- (C) be away from elevator shafts or intake vents; and
- (D) be away from elevated temperatures or heat sources.

(3) Chlorine cylinders shall be handled with care. Valve protection and outlet caps shall be in place at all times except when the cylinder is connected for use. Cylinders shall be used on a first-in, first-out basis. Post-10/01/99, approved washers shall be used each time a cylinder is connected.

(4) As soon as a container is empty, the valve shall be closed and the lines disconnected. The outlet cap shall be applied promptly and the valve protection hood attached. The open end of the disconnected line shall be plugged or capped promptly to keep atmospheric moisture out of the system. A chlorine valve shut off wrench shall be kept on the cylinder valve stem of the cylinder that is in use.

(5) Contents of a chlorine cylinder can be determined only by weight; therefore, facilities shall include a scale suitable for weighing the cylinders. Changing cylinder(s) shall be accomplished only after weighing proves contents of cylinder to be exhausted. Care shall be taken to prevent water suck-back into the cylinder by closing the cylinder valve.

(6) The telephone number of the chlorine supplier, and the fire department or agency trained in the handling of chlorine spills shall be posted on the outside of the chlorine room door. In the event of a chlorine leak, the fire department or an agency trained in the handling of chlorine spills shall be immediately contacted.

(7) The chlorinator and all line and tank fittings shall be checked for leaks at regular intervals and after every tank exchange. A small bottle of fresh ammonia solution (or approved equivalent) for testing for chlorine leakage shall be provided and accessible outside the chlorinator room when chlorine gas is used.

(8) Tanks and cylinders shall be secured as necessary to prevent spills.

Section 19. Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) *Handholds and coping for post-10/01/99 and pre-10/01/99 pools and spas.* A post-10/01/99 pool or spa shall be provided with a handhold around its perimeter in areas where depths exceed 42 inches and there is no seat bench, swimout, or lounge area below the perimeter area in question. Handholds shall be provided no farther apart than 2 feet to include, but not

limited to, one or a combination of the following items:

(1) Handholds for post-10/01/99 and pre-10/01/99 pools and spas may be coping, rope, railing, ledge, deck, negative edge, or similar construction along the immediate top edge of the pool that provides a slip-resistant surface or grip and shall be at least 4 inches minimum horizontal width and located at or not more than 9 inches above the design water level. Any overhang of coping or decking shall not exceed 2 inches.

(2) Coping overhang in post-10/01/99 and pre-10/01/99 pools and spas shall be continuous without breaks or notches (other than slight indentations by masonry joints).

(3) Ladders, steps, and seat ledges for post-10/01/99 pools and spas shall be constructed in accordance with §6(b) of this title (relating to Decks, Entry/Exit, Diving Facilities, and Other Deck Equipment at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(b) ***Float lines and floor markings for post-10/01/99 and pre-10/01/99 pools.*** Float lines with floats and floor markings for a post-10/01/99 and pre-10/01/99 pools shall comply with the following:

(1) In post-10/01/99 and pre-10/01/99 Class A and B pools over 5 feet deep:

(A) The transition point of the pool from the shallow area to the deep area of the pool shall be visually set apart with a 4-inch minimum width row of floor tile, a painted line, or similar means using a color contrasting with the bottom.

(B) A rope and float line shall be provided between 1 foot and 2 feet on the shallow side of the 5-foot depth along and parallel to this depth from one side of the pool to the other side. The floats shall be spaced at not greater than 7-foot intervals; and the floats shall be secured so they will not slide or bunch up. The stretched float line shall be of sufficient size and strength to offer a good handhold and support loads normally imposed by users. If the owner or operator of the pool knows or should have known in the exercise of ordinary care that a rope or float is missing, broken, or defective, the problem shall be promptly remedied.

(2) In post-10/01/99 and pre-10/01/99 Class C pools over 5 feet deep, the transition point of the pool from the shallow area to the deep area of the pool shall be visually separated by a 4-inch minimum width row of floor tile, a painted line, or similar means using a color contrasting with the bottom.

(3) If rope and float lines are provided in post-10/01/99 or pre-10/01/99 pools, they shall be securely fastened to wall or deck anchors of corrosion-resisting materials and of the type that is recessed or removable and shall have no projection that will constitute a hazard when the line is removed.

(c) ***Depth markers for post-10/01/99 pools.*** Post-10/01/99 pools shall have markers showing depth and unit of measurement for the depth, complying with the following:

(1) Depth markers on both sidewalls and decks of the pool shall:

(A) indicate the pool depth from the design water level to the floor of the pool according to a vertical measurement taken 3 feet from the pool wall;

(B) be a minimum of 4 inches in height (measured vertically on a sidewall and horizontally on a deck);

(C) be of contrasting color to the background on which they are applied;

(D) have permanent colors for the numbers, units, and background of the marker;

(E) placed at 2-foot increments of depth in the shallow and deep ends of the pool, and be uniformly installed around a pool to the extent practical;

(F) be spaced at distances not greater than 25-foot intervals, and with a minimum of at least one marker per pool side;

(G) be placed at the maximum and minimum points of depths and at the 5-foot depth of a pool over 5 feet deep;

(H) designate the depth, on irregularly shaped pools, at all major deviations in shape; and

(I) have units of measurement spelled out in “feet” or “inches” or abbreviated as “FT”, “IN”, or feet and fractions of a foot. In addition to feet and inches, the unit of measurement may also be displayed in meters, in which event units of measurement shall be spelled out as “meters” or abbreviated as “M.”

(2) Depth and unit markers on decks shall be slip-resistant, placed within 24 inches of the water’s edge, and positioned to be read while standing on the deck facing the water.

(3) Depth and unit markers on pool sidewalls, except as provided in paragraph (4) of this subsection shall be plainly and conspicuously posted in the top 4.5 inches of the pool wall and be positioned to be read by a user while in the pool.

(4) If depth and unit markers cannot be placed on the sidewall with a readable portion of the marker above the actual water level (e.g. the edges of a zero depth entry pool or other coping types that do not allow sufficient space for the 4-inch depth markers), other methods may be used to mark the depth and unit of measurement, as follows:

(A) Sidewall depth and unit markers shall not be required on the edges of a zero depth entry pool.

(B) On roll out gutter pools or other pools without a vertical sidewall and with at least 3 inches of the sidewall above the design water level, depth and unit markers

shall be readable from the pool and shall be placed in the first 6 inches of deck or on a vertical wall or fence, if one exists, within 10 feet of the water's edge. Otherwise, no depth or unit markers shall be required for such pools.

(C) On vanishing edge pools, depth and unit markers shall not be required on that portion of the vanishing edge that has no pool wall above the design water level and shall not be required on that portion of the vanishing edge that is inaccessible to patrons on the deck; but sidewall and deck markers must be installed on the vanishing edge immediately at the end of the vanishing edge, in the top 4.5 inches of the pool.

(d) ***Depth markers for pre-10/01/99 pools.*** Pre-10/01/99 pools shall have depth markers that comply with the following:

(1) Depth markers on both sidewalls and decks of the pool shall:

(A) indicate the pool depth from the design water level to the floor of the pool according to a vertical measurement taken 3 feet from the pool wall;

(B) be a minimum of 4 inches in height (measured vertically on a sidewall and horizontally on a deck);

(C) be of contrasting color to the background on which they are applied;

(D) have permanent colors for the numbers and background of the marker;

(E) be placed at 2-foot increments of depth around the pool; and

(F) be placed at the maximum and minimum points of depths and at the point of bottom slope change from shallow end and deep end.

(2) Depth markers and any unit markers on decks shall be slip-resistant, placed within 24 inches of the water's edge, and positioned to be read while standing on the deck facing the water.

(3) Depth and any unit markers on pool sidewalls, except as provided in paragraph (4) of this subsection, shall have at least 50% of the depth number and any unit of measurement, plainly and conspicuously placed above the design water level on the sidewall and be positioned to be read by a user while in the pool. A percentage higher than 50% is permitted but not required.

(4) If depth markers and any unit markers cannot be placed on the sidewall with a readable portion of the marker above the design water level (e.g. the edges of a zero depth entry pool or other coping types which do not allow sufficient space for the 4-inch depth markers), other methods may be used to mark the depth and unit of measurement, as follows:

(A) Sidewall depth markers shall not be required on edges of zero depth entry pools.

(B) On roll out gutter pools or other pools without a vertical wall that does not have at least 3 inches of pool wall above the design water level, the depth markers and any unit markers shall be readable from the pool and shall be placed in the first 6 inches of deck, or on a vertical wall or fence, if one exists, within 10 feet of the water's edge. If there is no practical location for installation of vertical depth markers, no depth or unit markers shall be required in those areas.

(C) On vanishing edge pools, depth markers and any unit markers shall not be required on that portion of the vanishing edge that has no pool wall above the design water level and shall not be required on that portion of the vanishing edge that is inaccessible to patrons on the deck; but sidewall and deck markers must be installed on the vanishing edge immediately at the end of the vanishing edge, in the top 4.5 inches of the pool.

(5) If a pre-10/01/99 pool is substantially replastered or the waterline tile is substantially replaced, all depth markers on the sidewalls must comply with subsection (c) of this section regarding depth markers for post-10/01/99 pools.

(e) ***“NO DIVING” wording and international no diving symbol warning signs for post-10/01/99 and pre-10/01/99 pools.*** This subsection applies to post-10/01/99 and pre-10/01/99 pools.

(1) The warning words “NO DIVING” and the international no diving symbol shall be clearly marked on the pool deck with contrasting colors and letters at least 4 inches high. The warning shall be placed at least every 25 feet or fraction thereof, around the pool where the water depth is 6 feet or less. At least two warnings including the “NO DIVING” and international no diving symbol, shall be provided at the extreme ends of the minimum depth and at the extreme ends of the maximum depth at 6 feet on each side of the pool or on each of the longer dimensional sides of the pool. These warning signs shall be slip-resistant. The warning “NO DIVING” and international no diving symbol on the deck shall be within 24 inches of the water edge and positioned to be read while standing on the deck facing the water. The international no diving symbol consists solely of a diver's profile in a circle with a 45-degree slash through the diver and may be red and/or black on a light background.

(2) If a permanent structure above the pool deck (other than a diving board or diving platform) is within 5 feet of the water surface of a pool and is likely to be used for diving, the international no diving symbol and the warning “NO DIVING” (in contrasting colors and letters at least 4 inches high), shall be permanently affixed to the structure so that such warnings are visible to persons who may attempt to use the structure for diving.

(f) ***Signs for post-10/01/99 and pre-10/01/99 pools.***

(1) Post-10/01/99 and pre-10/01/99 pools shall comply with the following sign requirements:

(A) Signs shall be securely mounted as applicable and readily visible to the pool user from inside the pool enclosure.

(B) For Class C and D pools where no lifeguard is provided, a sign shall be placed in plain view and shall state "NO DIVING" along with an international warning symbol for no diving. The letters "NO DIVING" and the symbol shall be at least 4 inches high.

(C) For pools where no lifeguard service is required, a warning sign shall be placed in plain view and shall state "WARNING-NO LIFEGUARD ON DUTY" with clearly legible letters at least 4 inches high. In addition, the sign shall also state in letters at least 2 inches high "CHILDREN SHOULD NOT USE POOL WITHOUT ADULT SUPERVISION." The additional signage required in this subsection may be included on the sign described in paragraph (2) of this subsection.

(D) When a required telephone is not readily visible from a post-10/01/99 or pre-10/01/99 pool or spa, directions shall be posted regarding its location as stated in subsection (i) of this section.

(2) In areas of Texas where a majority of citizens are non-English speaking, in addition to signs in English, signs, and other written warnings required by these standards, may be posted in the predominant language.

(g) Lifeguard personnel standards at post-10/01/99 and pre-10/01/99 pools. Post-10/01/99 and pre-10/01/99 pools shall comply with the following lifeguard requirements:

(1) Lifeguards shall hold a current ARC "Lifeguard Training" certificate or the equivalent certification from an aquatic safety organization, which also includes training in ARC "Adult, Infant, and Child CPR" and "Community First Aid" or their equivalent.

(2) Each lifeguard shall be given an assigned surveillance area commensurate with ability.

(3) Lifeguards conducting surveillance of pool users shall not be assigned duties that would distract their attention from proper observation of the users, or that would prevent immediate assistance to persons in the water.

(4) When a lifeguard is provided at a pool, the following shall apply:

(A) The number of lifeguards shall be adequate to provide supervision, continuous surveillance, and close observation of pool users in all areas of the pool and at all times when the pool is in use. No user shall be permitted in a pool area unless the lifeguard(s) are present.

(B) An additional lifeguard, or second responder who is monitoring and readily available at the pool, and who has a minimum training in ARC "Adult, Infant, and Child CPR" and "Community First Aid" or equivalent training, shall also be in the pool area when the pool is in use.

(5) All lifeguards and second responders shall receive training in the application of effective pool emergency procedures for events such as submersions, suspected spinal injury, medical emergencies, missing persons, bad weather, etc. Such training will be reviewed as necessary and kept current.

(6) Pool facilities shall provide alertness/response drills and other training including documentation of the following:

(A) a pre-season training program;

(B) a continual “in-service” training program for all lifeguards, and other aquatic personnel totaling a minimum 60 minutes per week;

(C) performance “audits” as recommended by the ARC or YMCA or equivalent aquatic safety organization; and

(D) an emergency action plan similar to the one outlined by the ARC or YMCA or equivalent aquatic safety organization.

(7) Management at each facility shall maintain a current file with each staff person’s current certification including expiration dates.

(8) Owners shall allow lifeguards to have sufficient break time from guarding activities as recommended by the ARC or YMCA or equivalent aquatic safety organization.

(9) Lifeguards and second responders shall be provided at:

(A) post-10/01/99 and pre-10/01/99 Class A pools during competitive events;

(B) post-10/01/99 and pre-10/01/99 Class B pools; and

(C) post-10/01/99 and pre-10/01/99 Class C pools with a diving board or slide that is not locked or chained to prevent use of the diving board or slide.

(10) Where lifeguards are not provided, refer to subsection (f)(1) of this section relating to signs.

(h) ***Lifeguard chairs and lifeguard equipment for post-10/01/99 and pre-10/01/99 pools.*** Post-10/01/99 and pre-10/01/99 pools shall comply with the following requirements, as applicable:

(1) A post-10/01/99 pool that has a diving board(s) shall have at least one elevated lifeguard chair, located to provide a clear unobstructed view of the pool bottom in the diving area and shall comply with the following:

(A) The seat of the lifeguard chair in the diving water area shall be located at an elevation at least 4 feet above the pool deck. The lifeguard chair may be portable so that its location can be optimized to prevent glare and provide proper supervision.

(B) If the width of the pool is 45 feet or more, an additional elevated chair or station shall be provided and shall be located in the diving area on the opposite side of the pool.

(C) Such lifeguard platforms or chairs shall be placed in locations to reduce sun glare on the water, and in positions which allow complete visual coverage of the pool and the pool bottom within a field of view no greater than 90 degrees on either side of a line of sight extending straight out from the platform or chair.

(2) At post-10/01/99 and pre-10/01/99 pools, lifeguard(s) shall have a sufficient number of standard rescue tube(s) or buoy(s) with attached rope/strap and other equipment as necessary for use by the lifeguard(s). Such equipment shall be immediately accessible at all times. Lifeguard(s) and second responders shall be dressed in swimming attire so that they are readily identifiable as members of the staff.

(i) ***Pool safety equipment for post-10/01/99 and pre-10/01/99 pools.*** Post-10/01/99 and pre-10/01/99 pools shall comply with the following standards:

(1) *Lifesaving equipment at post-10/01/99 and pre-10/01/99 Class A, B, and C pools.* At post-10/01/99 and pre-10/01/99 Class A, B, and C pools having less than 2,000 square feet of surface area, at least one of each of the following items of lifesaving equipment shall be provided for the pool:

(A) A reaching pole that is light, strong, non-telescoping and at least 12 feet long. The pole shall be constructed of fiberglass or other material that does not conduct electricity and shall have a body hook or shepherd's crook with blunted ends attached to it.

(B) A throwing rope that is 1/4-inch to 3/8-inch diameter, with a length at least two-thirds the maximum width of the pool. A ring buoy that is approved by the United States Coast Guard and that has an outside diameter of 15 to 24 inches shall be attached to the throwing rope.

(C) If the pool has between 2,000 and 4,000 square feet of water surface area, an additional reaching pole and throwing rope with ring buoy, as described in subparagraphs (A) and (B) of this paragraph shall be provided. If the pool has over 4,000 square feet of water surface area, an additional reaching pole and throwing rope with ring buoy as described in subparagraphs (A) and (B) of this paragraph shall be provided for each 6,000 square feet of water surface area or portion thereof over 4,000 square feet. All such lifesaving equipment shall be mounted in conspicuous places around the pool deck within 20 feet of the pool. All lifesaving equipment shall be kept in good repair and ready condition.

(2) *Backboards at post-10/01/99 and pre-10/01/99 pools.* Post-10/01/99 and pre-10/01/99 Class A and B pools and Class C pools that have a diving board, slide, or lifeguard

shall have one or more backboards with a minimum of 3 tie down straps and head immobilizer for back and neck injuries.

(3) *First aid kits at post-10/01/99 and pre-10/01/99 pools.* Post-10/01/99 and pre-10/01/99 Class A and B pools and other pools with lifeguards shall be equipped with a first aid kit meeting OSHA requirements. First aid kits shall be a standard 24-unit kit and housed in a durable weather resistant container and kept filled and ready for use (including disease transmission barriers and cleansing kits that meet OSHA standards.

(j) *Telephones at post-10/01/99 and pre-10/01/99 pools and spas.* Post-10/01/99 and pre-10/01/99 pools and spas shall have a telephone that is capable of immediately summoning emergency service and that is readily accessible within 200 feet from the pool or spa water. Any other electronic means of summoning emergency service will qualify as a telephone if clear instructions for its use are provided by signage. A telephone that is answered by an on-site office does not meet the requirements of this subsection. The following shall apply to telephones for post-10/01/99 and pre-10/01/99 pools and spas:

(1) The telephone may be located inside or outside of the pool yard or spa yard if the enclosure entry gates and doors of the pool yard or spa yard are never locked in any manner, or the gate or fence is not more than 4 feet 4 inches tall.

(2) The telephone shall be located inside or outside of the pool yard if the pool is a Class A or B pool.

(3) The telephone must be located outside of all other pool yards or spa yards if all of the following occur:

(A) The entry gate(s) or door(s) are locked on either side of the gate or door.

(B) The enclosure entry gates and doors and the enclosure fences and walls are all higher than 4 feet 4 inches.

(C) The pool or spa is operated in conjunction with:

- (i) lodging such as hotels, motels, apartments, condominiums, or mobile homes parks;
- (ii) a property owners association, private organization, or club;
- (iii) a school, college, or university while being operated for academic or continuing education classes, or
- (iv) practice event (excluding competition events in accordance with subparagraph (A) of this paragraph).

(4) Each entry gate and door of a pool yard or spa yard that is locked must have a sign on the exterior of the gate or door or on the exterior of the enclosure fence or wall immediately adjacent to the gate or door, stating the location of the telephone outside of the enclosure and complying with the content and letter size of paragraph (5) of this subsection if:

(A) the telephone is located outside the pool yard of a Class A or B pool; or

(B) the telephone is required to be located outside the pool yard or spa yard under paragraph (3) of this subsection.

(5) Regardless of where the telephone is located or whether the gate(s) or door(s) are locked, a sign must be installed inside the pool yard or spa yard in plain view of the pool or spa and state in letters at least 1 inch high: "In case of emergency, call 911." If the telephone is not readily visible from the pool or spa, the sign inside the pool yard or spa yard shall include a concise description of the location of the telephone.

(k) ***Lighting for post-10/01/99 and pre-10/01/99 pools and spas.*** Lighting for decks and water surfaces of post-10/01/99 or pre-10/01/99 pool or spa shall be provided according to this subsection. Lighting for such pools and spas shall comply with the following:

(1) Lighting above water level for decks and water surfaces shall be not less than 0.5 watts (incandescent equivalent) per square foot of the combined deck and water surface areas of the pool or spa.

(2) If underwater lighting is installed in a pool, the underwater lighting shall be 0.5 watts per square foot of water surface area of the pool, and the water surface area need not be counted for purposes of subsection (1) of this section.

(3) Lighting shall be spaced to provide illumination to all portions of the deck and water surface areas of a pool or spa. The bottom of the pool or spa must be readily seen without glare.

(l) ***Indoor ventilation for post-10/01/99 pools and spas.*** A post-10/01/99 pool or spa that is constructed indoors must meet ASHRAE 62-1989, "Ventilation for Acceptable Indoor Air Quality" standards.

(m) ***Safety and sanitation of special aquatic activity devices.*** Post-10/01/99 or pre-10/01/99 special aquatic activity devices involving a water circulation system separate from the circulation system for a pool (e.g., separate pump, holding tank, etc.) shall comply with the following sections to the same extent the sections apply to pools, except as otherwise noted:

(1) §7 of this title relating to (Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas), except that the water turnover rate shall be at least once every 30 minutes, and a vacuum cleaning system is not required;

(2) §8 of this title (relating to Filters at Post-10/01/99 and Pre-10/01/99 Pools

and Spas);

(3) §9 of this title (relating to Pumps and Motors at Post-10/01/99 and Pre-10/01/99 Pools and Spas);

(4) §10 of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas);

(5) §12 of this title (relating to Electrical Requirements for Post-10/01/99 and Pre-10/01/99 Pools, Spas, Pool Yards, and Spa Yards);

(6) §14 of this title (relating to Pool or Spa Water Supply for Post-10/01/99 and Pre-10/01/99 Pools and Spas);

(7) §16 of this title (relating to Waste Water Disposal at Post-10/01/99 and Pre-10/01/99 Pools and Spas);

(8) §17 of this title (relating to Disinfection Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas); and

(9) §24 of this title (relating to Water Quality for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

Section 20. Pool Yard and Spa Yard Enclosures for Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) *Enclosures for post-10/01/99 and pre-10/01/99 Class A and B pools and spas and post-10/01/99 and pre-10/01/99 residential youth camp pools and spas.*

(1) Post-10/01/99 and pre-10/01/99 Class A and B pools, and post-10/01/99 and pre-10/01/99 pools and spas that are located at residential youth camps required to be licensed under Health and Safety Code, Chapter 141 shall be enclosed by a barrier consisting of one of the following, or its equivalent: a fence, portion of a building, wall, or other durable enclosure.

(2) A building that serves as part of the enclosure shall have doors or gates that open into the pool yard only if:

(A) any doors or gates between the building and the pool yard are for entry into a storage room, restroom, shower room, dressing room, or mechanical room adjacent to the pool;

(B) the room does not have any door or gate openings to the outside of the pool yard enclosure; and

(C) the room does not contain any gas chlorine containers.

(3) The enclosure, including doors and gates, shall:

(A) have a minimum effective perpendicular height of at least 6 feet as measured from the ground surface on the outside of the fence;

(B) have no openings in the enclosure through or under which a 4-inch diameter sphere can pass;

(C) be designed and constructed so that it cannot be readily climbed;
and

(D) have all doors, gates, and windows in the enclosure directly and continuously supervised by staff at the pool during hours of operation, or locked to prevent unauthorized entry.

(b) ***Enclosures for post-10/01/99 or pre-10/01/99 Class C pools and spas and Class D pools at a Class C facility that are subject to Health and Safety Code, Chapter 757.*** A post-10/01/99 or pre-10/01/99 pool or spa that is subject to Health and Safety Code, Chapter 757 (covering pool yards and spa yards of apartments, property owner associations, and similar residential developments) shall have an enclosure as required in Chapter 757.

(c) ***Enclosures for all other post-10/01/99 or pre-10/01/99 Class C pools and spas and Class D pools at Class C facilities.*** A post-10/01/99 or pre-10/01/99 Class C pool or spa or a Class D pool at a Class C facility that is not subject to Health and Safety Code, Chapter 757 (such as pools and spas for hotels, motels, RV parks, etc.) must have a pool yard or spa yard enclosure in compliance with this subsection.

(1) The pool yard or spa yard enclosure for a post-10/01/99 or pre-10/01/99 pool or spa subject to this subsection shall consist of one or a combination of a fence, portion of a building, wall or other durable enclosure. The enclosure shall comply with the following:

(A) The enclosure must have a minimum perpendicular height of at least 48 inches as measured from the ground surface on the outside of the fence.

(B) Openings in or under the enclosure shall not allow the passage of a 4-inch diameter sphere.

(C) Planters or other structures that might allow small children to climb over the enclosure shall not be permitted within 36 inches, measured horizontally, from the outside of the enclosure.

(D) Chain link fencing may be used for the enclosure of a pre-10/01/99 pool and spa if the chain link fencing was installed before September 1, 2004. Chain link fencing shall not be used for an enclosure for a post-10/01/99 pool or spa constructed after September 1, 2004.

(E) Doors, gates, or windows that open into a building are allowed as part of a pre-10/01/99 pool or spa enclosure. Windows that are capable of being opened are not allowed as part of a post-10/01/99 pool or spa enclosure. Doors or gates of a building that are

capable of being opened are not allowed as part of a post-10/01/99 pool or spa enclosure unless:

(i) the doors or gates between the building and the pool yard or spa yard are for entry into a storage room, restroom, shower room, dressing room or mechanical room adjacent to the pool;

(ii) the room does not have any door or gate openings to the outside of the pool yard or spa yard enclosure; and

(iii) the room does not contain any gas chlorine containers.

(2) Gates and doors for pool yard or spa yard enclosures for post-10/01/99 and pre-10/01/99 pools and spas subject to this subsection shall:

(A) be equipped with self-closing and self-latching devices and be latched when the pool or spa is not in use; and the self-closing device shall be designed to keep the gate or door securely closed and the self-latching device shall latch when the gate is allowed to close within its range of operation, which is from its fully open position to 6 inches from the fully closed position;

(B) open outward away from the pool or spa except for gates constructed before October 1, 1999, in compliance with an applicable city ordinance;

(C) have hand activated door or gate opening hardware located at least 3.5 feet above the deck or walkway;

(D) be capable of being locked;

(E) be locked if it is for entry into a Class A or B pool or a spa, and the pool or spa is not open for use; and

(F) be locked if it is for entry into a Class C pool or a spa or Class D pool at a Class C facility and the pool or spa needs to be closed because of repairs, hazards, or other conditions.

(3) Pool yard and spa yard enclosures for post-10/01/99 pools and spas shall be constructed so that all persons will be required to pass through an enclosure gate or door in order to gain access to the pool or spa. All gates and doors exiting a pool yard or spa yard of a post-10/01/99 pool or spa shall open into a public area or walkway accessible by all users of the pool or spa.

(d) ***[Propping open gates prohibited.]*** No pool or spa owner or his agent or employee may knowingly allow a gate in a pool yard or spa yard enclosure to be propped open or to remain propped open and no person may prop open such gate unless an agent, employee, or contractor of the owner is present and doing construction, maintenance, or repair work in the pool yard or spa yard or on its enclosure that reasonably requires the gate to be propped open.

Section 21. Dressing and Sanitary Facilities at Post-10/01/99 and Pre-10/01/99 Pools and

Spas.

(a) ***Fixture design at post-10/01/99 facilities.*** Fixtures at facilities for post-10/01/99 and pre-10/01/99 pools and spas shall be designed so that they are readily cleanable.

(b) ***Fixture installation at post-10/01/99 and pre-10/01/99 facilities.*** Fixtures at facilities for post-10/01/99 and pre-10/01/99 pools and spas shall be installed in accordance with local plumbing codes and shall be properly protected by cross-connection control devices (backflow prevention devices).

(c) ***Proper cleaning at post-10/01/99 and pre-10/01/99 facilities.*** Facilities for post-10/01/99 and pre-10/01/99 pools and spas shall be cleaned as necessary to maintain sanitary conditions at all times.

(d) ***Adequate ventilation at post-10/01/99 facilities.*** Adequate ventilation shall be provided in facilities for post-10/01/99 and pre-10/01/99 pools and spas to prevent objectionable odors in accordance with §19(1) of this title (relating to Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(e) ***Dressing and sanitary facilities at facilities for post-10/01/99 Class A or B pools or spas and Class D pools operated in conjunction with a Class A or B pool.*** Adequate dressing and sanitary facilities shall be provided for post-10/01/99 Class A or B pools and for post-10/01/99 Class D pools operated in conjunction with a Class A or Class B pool.

(1) Separate dressing and sanitary facilities shall be provided for each gender. The rooms shall be well lit, drained, ventilated, and of good construction, using impervious materials. They shall be developed and planned so that good sanitation will be maintained throughout the building at all times. An appropriate number of dressing rooms that can accommodate a family are allowed.

(2) Partitions between portions of the dressing room area, screen partitions, shower, toilet, and dressing room booths shall be of durable material not subject to damage by water and shall be designed so that a waterway is provided between partitions and floor to permit thorough cleaning of the walls and floor areas with hoses and brooms.

(3) At least one shower and dressing booth for each gender shall be provided. This condition may be subject to variation for schools and other institutional use where a pool or spa may be open to one gender at a time.

(4) Floors shall have a slip-resistant surface and shall be sufficiently smooth to ensure ease in cleaning. Floor drains shall be provided, and floors shall be sloped 1/4 inch per foot toward the drains to ensure positive drainage.

(5) An adequate number of hose bibs and a hose of adequate length shall be provided for washing down all areas of the dressing facility interior. Adequate cross-connection control devices as approved by the TCEQ or local regulatory authority shall be provided. When not in use, hoses shall be stored in such a manner to prevent a trip hazard.

(f) ***Lavatories, showers, and toilets at post-10/01/99 pools and spas.*** Except as provided in subsection (g) of this section, the following requirements apply to lavatories, showers and toilets in facilities serving post-10/01/99 Class A, B, C, or D pools and spas:

- (1) The required fixture schedule is contained in the following table:

Figure: Section 21(f)(1). [See page91.]

- (2) The number of fixtures should be increased for swimming pools at schools or similar locations where load may reach peaks due to schedule of use.

- (3) Shower(s) and lavatory(s) water temperature shall be controlled by anti-scald devices. The water heater and thermostatically-controlled mixing valves shall be inaccessible to users and shall be capable of providing 2 gallons per minute of water between 90 to 110 degrees Fahrenheit to each shower head. A shower can be located on the deck of the pool if proper wastewater disposal is provided. The shower need not be enclosed in Class C pools.

(g) ***Sanitary facilities serving post-10/01/99 pools or spas in apartments, hotels, motels or condominiums.*** Post-10/01/99 Class C and D pools and spas located in an apartment, hotel, motel or condominium complex are not required to have the following facilities:

- (1) showers;
- (2) dressing rooms;
- (3) toilets;
- (4) urinals unless the facility has toilets for persons using the pool or spa;
- (5) hand drying towels unless the facility has a lavatory in an enclosed room;
- (6) baby changing table unless the facility has a dressing room or toilets; and
- (7) a lavatory if a faucet is installed at lavatory height and in compliance with subsection (f)(3) of this section and proper wastewater disposal is provided.

(h) ***Additional requirements for sanitary facilities at post-10/01/99 and pre-10/01/99 pools and spas.*** Post-10/01/99 and pre-10/01/99 sanitary facilities serving a post-10/01/99 or pre-10/01/99 pool or spa shall comply with the following whenever lavatories, toilets, mirrors, or dressing rooms are provided:

- (1) Soap dispensers with liquid or powdered soap shall be provided at each lavatory. The dispenser shall be of all metal or plastic type with no glass permitted in these units.
- (2) Any mirrors shall be shatter resistant.

- (3) Toilet paper holders and toilet paper shall be provided at each toilet.
- (4) Covered waste receptacles shall be provided in toilet or dressing room areas.
- (5) Single-use hand drying towels or hand drying devices shall be provided near the lavatory.

Section 22. Food, Beverages, and Containers at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Food and beverages while in the water at post-10/01/99 and pre-10/01/99 pools and spas.*** At post-10/01/99 and pre-10/01/99 pools and spas, no person shall eat, drink, or smoke while in the pool or spa water.

(b) ***Non-breakable containers at post-10/01/99 and pre-10/01/99 pools and spas.*** At post-10/01/99 and pre-10/01/99 pools and spas, food and beverage(s) shall be served only in non-breakable containers. Glass containers shall not be allowed on a deck, in a pool or spa, or elsewhere in a pool yard or spa yard.

(c) ***Trash containers at post-10/01/99 and pre-10/01/99 pools and spas.*** At post-10/01/99 and pre-10/01/99 pools and spas, trash containers shall be provided where food and/or beverage(s) are allowed.

Section 23. Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Required operator certification for certain types of post-10/01/99 and pre-10/01/99 pools and spas.*** Post-10/01/99 and pre-10/01/99 Class A or B pools and Class D pools operated in conjunction with a Class A or B pool shall be maintained under the supervision and direction of a properly trained and certified operator who is responsible for the sanitation, safety, and proper maintenance of the pool or spa, and for maintaining all physical and mechanical equipment and records. Training and certification can be obtained by completion of one of the following courses or their equivalent:

- (1) the NRPA, "Aquatic Facility Operator" (A.F.O.);
- (2) the NSPF, "Certified Pool-Spa Operator" (C.P.O.);
- (3) YMCA, "Pool Operator on Location" (P.O.O.L.);
- (4) the NSPI, "Professional Pool & Spa Operator" (P.P.S.O.); or
- (5) the ASPSA, "Licensed Aquatic Facility Technician" (L.A.F.T.).

(b) ***Water clarity standards for post-10/01/99 and pre-10/01/99 pools and spas.*** Areas of a post-10/01/99 or pre-10/01/99 pool or spa shall be opened for use only if the pool or spa bottom and/or main drains are clearly visible. Possible visual occlusion by sediment or other

matter shall be checked before opening a pool and periodically, as necessary, while the pool is in use. To check the pool or spa when in use, bathers shall exit and the pool or spa water shall be allowed to calm. Clarity shall be observed between 1 to 5 minutes after users have exited. The pool or spa shall be opened for use only if the bottom and/or main drains are clearly visible. Sediment or other matter that may cause visual occlusion shall be vacuumed, filtered or otherwise removed as needed prior to pool use.

(c) ***Equipment for water clarity for post-10/01/99 and pre-10/01/99 pools and spas.***

When a post-10/01/99 or pre-10/01/99 pool or spa is open for use, filtration, circulation systems, chemical/disinfectant feeders, slurry feeders, heaters, etc., that are dependent upon circulation pump flow shall be operating, plus any additional time necessary to ensure continuous water clarity and chemical distribution.

(1) The pool and spa shall be operated to maintain the turnover rates as stated in §7(b)(1) of this title (relating to Circulation Systems for Post-10/01/99 Pools and Spas) and §7(c) of this title.

(2) Circulation pumps shall run continuously 24 hours a day year round and not be throttled to reduce circulation below the design flow rate, except that a pool pump may run less than 24 hours a day if:

(A) a “Pool Closed” sign, with letters at least 1-inch tall, is posted on the exterior side of each entry gate into the pool yard;

(B) the pump runs a sufficient number of hours needed to keep the water at required clarity and disinfectant levels; and

(C) the pump runs the same number of hours each day.

(d) ***Off season water clarity for post-10/01/99 and pre-10/01/99 outdoor pools and spas.*** When a post-10/01/99 or pre-10/01/99 outdoor pool or spa is not in use for an extended period of time (such as off season), clarity shall be maintained and algae growth shall be prevented; however, other water quality parameters as required in §24(a) of this title (relating to Water Quality for Post-10/01/99 and Pre-10/01/99 Pools and Spas) do not need to be maintained. Other methods may be used to maintain pools and spas during extended periods of non-use if the methods are approved by local authorities in writing and water clarity is maintained.

(e) ***Off season safety for post-10/01/99 and pre-10/01/99 pools and spas.*** When a post-10/01/99 or pre-10/01/99 pool or spa is not in use after seasonal operation, while under construction or renovation, or for any other reason, the facility shall not be allowed to give off objectionable odors, become a breeding site for insects, or create any other nuisance situation or safety hazard.

(f) ***Domestic animals prohibited at post-10/01/99 and pre-10/01/99 pools and spas.*** Domestic animals and other pets shall not be allowed within a post-10/01/99 or pre-10/01/99 pool or spa enclosure area, except that service animals shall be allowed on the deck and within the pool enclosure but not in the pool.

(g) ***Actual water level at post-10/01/99 and pre-10/01/99 pools and spas.*** Actual water level in a post-10/01/99 or pre-10/01/99 pool or spa shall be maintained within the operating water level range of the system's rim or weir device.

(h) ***Protection from chemicals for post-10/01/99 and pre-10/01/99 pools and spas.*** Personnel in charge of maintaining a post-10/01/99 or pre-10/01/99 pool or a spa shall be properly trained in accordance with §17(a)(5) of this title (relating to Disinfectant Equipment and Chemical Feeders at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(i) ***Maximum load limits for post-10/01/99 pools and spas.*** The maximum load limits for a post-10/01/99 pool and spa shall be calculated and posted. Load limits are indicated in §4(n) of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas).

(j) ***Use of life jackets for post-10/01/99 and pre-10/01/99 pools and spas.*** No person shall be prohibited from the use of a life jacket in a post-10/01/99 or pre-10/01/99 pool or spa.

(k) ***Proper use of chemicals at post-10/01/99 and pre-10/01/99 pools and spas.*** Use of chemicals at post-10/01/99 and pre-10/01/99 pools and spas shall be according to the chemical manufacturer's directions. No chemical shall be used in a way that violates the manufacturer's instructions for the chemical feed system or the ANSI/NSFI 50 - 1996 certification of the chemical feed system.

(l) ***Use of registered products at post-10/01/99 and pre-10/01/99 pools and spas.*** In post-10/01/99 and pre-10/01/99 pools and spas, only chemicals registered and labeled for use in pools and spas by U.S. Environmental Protection Agency shall be used.

Section 24. Water Quality at Post-10/01/99 and Pre-10/01/99 Pools and Spas.

(a) ***Required water quality for post-10/01/99 and pre-10/01/99 pools and spas.*** Water quality for a post-10/01/99 or pre-10/01/99 pool or a spa shall meet the following criteria when the pool or spa is open for use. The water quality parameters in the following table apply to both pools and spas unless otherwise indicated.

Figure: Section 24(a). [See page 92.]

(b) ***Water quality testing at post-10/01/99 and pre-10/01/99 pools and spas.*** A reliable means of testing for pH, free and total chlorine or total bromine residuals, and cyanuric acid (if used) shall be maintained for post-10/01/99 and pre-10/01/99 pools and spas. The test method shall be capable of measuring chemical ranges as detailed in subsection (a) of this section.

(1) Free available chlorine residual shall be determined by the use of the DPD method or its equivalent.

(2) Test reagents shall be properly stored and changed at frequencies

recommended by the manufacturer to assure accuracy of the tests.

(c) **Testing frequency for post-10/01/99 and pre-10/01/99 pools and spas.** When a post-10/01/99 or pre-10/01/99 Class A or B pool is open for use or when a post-10/01/99 or pre-10/01/99 Class D pool operated in conjunction with a Class A or B pool or spa is open for use, a test for disinfectant level and pH shall be conducted at least every 2 hours to assure compliance with subsection (a) of this section relating to required water quality parameters. In lieu of the above testing frequency, if a system is used to automatically control disinfectant and pH, testing for disinfectant level and pH shall be made at least once per day. If necessary, tests shall be conducted more frequently to assure proper disinfectant level and pH.

(d) **Other required tests for post-10/01/99 and pre-10/01/99 pools and spas.** Test(s) for total chlorine, cyanuric acid, alkalinity and hardness at post-10/01/99 and pre-10/01/99 pools and spas shall be conducted as necessary to assure proper chemical control.

(e) **Operational records for post-10/01/99 and pre-10/01/99 pools and spas.** When tests are required, under this section, operational records of the tests shall be kept for two years and be made available during a governmental inspection.

Section 25. Construction, Operation, and Maintenance of Post-10/01/99 and Pre-10/01/99 Spas.

(a) **General construction standards for pre-10/01/99 spas.** Pre-10/01/99 spas shall comply with good public health engineering practices for construction of pre-10/01/99 pools and spas prevailing at the time of original construction as required by Health and Safety Code, §341.064(g), and shall comply with applicable rules at the time of original construction.

(b) **General construction standards for post-10/01/99 spas.** Post-10/01/99 spas shall comply with good public health engineering practices for construction of post-10/01/99-built pools and spas prevailing at the time of original construction as required by Health and Safety Code, §341.064(g), and shall comply with ANSI/NSPI 2 - 1992 Standards for Public Spas except as otherwise provided in these rules.

(c) **General standards for circulation equipment in post-10/01/99 spas.** Circulation equipment on post-10/01/99 spas, such as pumps, filters, skimmers, chemical feeders, and other circulation equipment, shall comply with ANSI/NSFI 50 - 1996 except as otherwise noted in §10(h) of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(d) **General standards for replacement of circulation equipment in pre-10/01/99 spas.** Circulation equipment replaced on pre-10/01/99 spas shall comply with ANSI/NSFI 50 - 1996 except as otherwise noted in §10(h) of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(e) **Specific construction and operational standards for post-10/01/99 spas.** The following standards apply to post-10/01/99 spas as specifically stated therein:

- (1) §1 of this title (relating to General Provisions).
- (2) §2 of this title (relating to Definitions).
- (3) §3 of this title (relating to Plans, Permits and Instructions for Post-10/01/99 Pools and Spas).
- (4) §5 of this title (relating to General Construction and Design for Post-10/01/99 Pools and Spas), and as follows:
 - (A) The maximum water depth shall be 4 feet from the design waterline except when approved by the local regulatory authority; and
 - (B) Multi-level seating may be provided, but the maximum water depth of any seat or sitting bench shall be 24 inches, measured from the design waterline.
- (5) §6(a) and (b) of this title (relating to Decks, Entry/Exit, Diving Facilities, and Other Deck Equipment for Post-10/01/99 and Pre-10/01/99 Pools and Spas). Also see ANSI/NSPI 2 – 1992.
- (6) §7 of this title (relating to Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (7) §8 of this title (relating to Filters at Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (8) §9 of this title (relating to Pumps and Motors at Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (9) §10 of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (10) §11 of this title (relating to Surface Skimming and Perimeter Overflow (Gutter Systems for Post-10/01/99 Pools and Spas).
- (11) §12 of this title (relating to Electrical Requirements for Post-10/01/99 and Pre-10/01/99 Pools, Spas, Pool Yards and Spa Yards).
- (12) §13 of this title (relating to Heating of Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (13) §14 of this title (relating to Pool or Spa Water Supply for Post-10/01/99 and Pre-10/01/99 Pools and Spas).
- (14) §15 of this title (relating to Drinking Water at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(15) §16 of this title (relating to Waste Water Disposal at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(16) §17 of this title (relating to Disinfectant Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(17) §18 of this title (relating to Gas Chlorination at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(18) §19 of this title (relating to Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(19) §20 of this title (relating to Pool Yard and Spa Yard Enclosures for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(20) §21 of this title (relating to Dressing and Sanitary Facilities at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(21) §22 of this title (relating to Food, Beverages, and Containers at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(22) §23 of this title (relating to Operation and Management of Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(23) §24 of this title (relating to Water Quality at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(24) Air blowers and other devices and systems which induce or allow air to enter the spa either by means of a power pump or passive design and shall comply with the following:

(A) The air blower systems shall prevent water backflow that could cause electrical shock hazards in accordance with ANSI/UL 1563 - 1995;

(B) Air intake sources shall not induce water external to the spa unit dirt or contaminants, into the spa;

(C) The air induction system shall be properly sized in accordance with the manufacturer's sizing specification;

(D) When installing an air blower indoors or within an enclosure, adequate ventilation is required, and the air induction system shall be installed in accordance with the manufacturer's recommendations;

(E) The air blowers shall be installed in accordance with the NEC and any federal, state or local codes;

(F) The air blower shall be accessible for inspection and service;

(G) Integral air passages shall be pressure tested at time of manufacture to provide structural integrity to a value of 1.5 times the intended working pressure; and

(H) If an air blower or other means of introducing air is provided, a manually operated timer switch located as to require the exiting of the spa to reset shall be provided. Such a timer shall operate the spa blower and the booster pump and shall automatically shut the blower and booster pump off in 15 minutes or when manually switched to the off position.

(f) ***Other safety-related requirements for post-10/01/99 and pre-10/01/99 spas.*** Post-10/01/99 and pre-10/01/99 spas shall comply with the following:

(1) *First aid kits.* Post-10/01/99 and pre-10/01/99 spas operated in conjunction with a Class A or B pool shall be equipped with a standard, 24-unit first aid kit that meets OSHA requirements and is kept ready for use at all times. First aid kits shall be housed in a durable weather resistant container and kept filled and ready for use, including disease transmission barriers and cleansing kits that meet OSHA standards.

(2) *Telephone.* Post-10/01/99 and pre-10/01/99 spas shall provide a means of summoning help in an emergency, and a sign shall be provided in accordance with §19(j) of this title (relating to Specific Safety Features for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(3) *Spa yard enclosures.* Post-10/01/99 and pre-10/01/99 spas shall be provided with an enclosure as follows:

(A) A post-10/01/99 or pre-10/01/99 spa at a complex subject to Health and Safety Code, Chapter 757, shall be provided with an enclosure as required in that code.

(B) All other post-10/01/99 and pre-10/01/99 spas shall be provided with an enclosure required by §20 of this title (relating to Pool Yard and Spa Yard Enclosures for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(4) *Deck depth markers.* Deck depth markers for post-10/01/99 and pre-10/01/99 spas shall comply with the following:

(A) Spas shall have permanent deck depth markers with numbers and units of measurement a minimum of 4 inches high plainly and conspicuously visible from all obvious points of entry.

(B) There shall be a minimum of 2 deck depth markers per spa, regardless of spa size or shape.

(C) Deck depth markers shall be spaced at no more than 25-foot intervals and shall be uniformly located around the entry areas of the spa.

(D) Deck depth markers and units of measurement shall be within 24 inches of the water edge and positioned to be read while standing on the deck facing the water.

(E) Deck depth markers shall be positioned to be read while standing on the deck facing the water.

(F) Deck depth markers in or on the deck surfaces shall be slip-resistant.

(G) Units of measurement shall either spell out “feet” or “inches” or abbreviate “FT”, “IN”, or feet and fractions of a foot. In addition to feet and inches the depth of water may also be displayed in meters. Units of measurement for meter depth markers may be spelled out “meters” or abbreviated “M.”

(H) Deck depth markers shall indicate the spa depth from the design water level to the floor of the spa with a vertical measurement taken 3 feet from the spa wall.

(5) *Temperature and thermometers.* Post-10/01/99 and pre-10/01/99 spas shall comply with the following temperature safeguards:

(A) The maximum temperature of the water in the spa shall not exceed 104 degrees Fahrenheit (40 degrees Centigrade).

(B) A break-resistant thermometer (plus or minus 1 degree Fahrenheit tolerance) that is designed for use in a spa environment shall be available for patrons and staff to monitor spa temperature.

(C) The controls for the spa temperature shall not be accessible to the spa user.

(6) *Maximum load limits.* Maximum load limits for post-10/01/99 spas are set forth in §4(n)(2) of this title and for pre-10/01/99 spas are set forth at §5(e)(2) of this title.

(7) *Signs.* Signs for post-10/01/99 and pre-10/01/99 spas shall be securely mounted and readily visible to the spa user from inside the spa enclosure. Signage shall state the following:

(A) The location of the nearest telephone or emergency-summoning device;

(B) “DO NOT USE THE SPA, IF THE WATER TEMPERATURE IS ABOVE 104 DEGREES FAHRENHEIT (40 DEGREES CELSIUS)” in letters at least 1 inch high;

(C) “WARNING-NO LIFEGUARD ON DUTY” with clearly legible letters at least 4 inches high if no lifeguard is required;

(D) “CHILDREN SHOULD NOT USE SPA WITHOUT ADULT SUPERVISION” with clearly legible letters at least 2 inches high if no lifeguard is required; and

(E) The maximum load limit as required in §23(i) of this title.

Section 26. Construction, Operation, and Maintenance of Post-10/01/99 and Pre-10/01/99 Therapeutic Pools and Spas.

(a) ***General construction standards for post-10/01/99 and pre-10/01/99 therapeutic pools and spas.*** Construction design and materials used in construction of post-10/01/99 and pre-10/01/99 therapeutic pools and spas shall comply with good public health engineering practices for construction of post-10/01/99-built therapeutic pools and spas prevailing at the time of original construction as required by Health and Safety Code, §341.064(g).

(b) ***General standards for circulation equipment in post-10/01/99 therapeutic pools and spas.*** Circulation equipment or post-10/01/99 therapeutic pools and spas, such as pumps, filters, skimmers, chemical feeders and other circulation equipment, shall comply with ANSI/NSFI 50 - 1996 except as otherwise noted in §10(h).

(c) ***General standards for replacement of circulation equipment in pre-10/01/99 therapeutic pools and spas.*** Circulation equipment replaced on pre-10/01/99 therapeutic pools and spas shall comply with ANSI/NSFI 50 - 1996 except as otherwise noted in §10(h) of this title (relating to Suction Outlets and Return Inlets in Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(d) ***Specific construction and operational standards for post-10/01/99 therapeutic pools and spas.*** The following standards apply to post-10/01/99 therapeutic pools and spas as specifically stated therein:

(1) §1 of this title (relating to General Provisions).

(2) §2 of this title (relating to Definitions).

(3) §3 of this title (relating to Plans, Permits and Instructions for Post-10/01/99 Pools and Spas).

(4) §7 of this title (relating to Circulation Systems for Post-10/01/99 and Pre-10/01/99 Pools and Spas); and if the therapeutic pool contains less than 1,000 gallons, the water turnover rate shall be 30 minutes or less.

(5) §8 of this title (relating to Filters at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(6) §9 of this title (relating to Pumps at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(7) §10 of this title (relating to Suction Outlets and Return Inlets at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(8) §12 of this title (relating to Electrical Requirements for Post-10/01/99 and Pre-10/01/99 Pools, Spas, Pool Yards and Spa Yards).

(9) §13 of this title (relating to Heating of Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(10) §14 of this title (relating to Pool or Spa Water Supply for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(11) §15 of this title (relating to Drinking Water Supply at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(12) §16 of this title (relating to Waste Water Disposal at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(13) §17 of this title (relating to Disinfectant Equipment and Chemical Feeders for Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(14) §24 of this title (relating to Water Quality at Post-10/01/99 and Pre-10/01/99 Pools and Spas).

(15) §27 of this title (relating to Compliance, Inspections and Investigations).

(16) §28 of this title (relating to Enforcement).

Section 27. Compliance, Inspections, and Investigations.

(a) The city health official, upon presenting the department credentials, shall have the right to enter at all reasonable times any area or environment, including but not limited to the pool or spa facility, building, storage, equipment room, or office area to inspect and investigate for compliance with these sections, to review records, to question any person, or to locate, to identify, and to assess the condition of pool or spa facility.

(b) Advance notice or permission for inspections or investigations by the department or local regulatory authority is not required.

(c) The city health official shall not be impeded or refused entry in the course of his official duties by reason of any state or federal law or company policy. It is a violation of this chapter for a person to interfere with, deny, or delay an inspection or investigation conducted by a department or local regulatory representative.

Section 28. Enforcement.

(a) If inspections by the city health official determine that a person has caused, suffered, allowed, or permitted a violation of Health and Safety Code §341.064, or any of these rules the department or the city health official may, in accordance with Health and Safety Code,

§341.092, assess civil penalties, seek injunctive relief in district court, or both.

(b) The department or city health official may take all appropriate legal remedies available to it including immediately closing the pool or spa either through voluntary compliance or an injunction.

(c) If a pool or spa closes either voluntarily or by court order all access to the pool or spa shall be restricted and a notice posted notifying the public that the pool or spa is closed until further notice.

(d) In the case of voluntary closure and upon presentation of evidence that the deficiencies that caused closure have been corrected, operation can be resumed if explicitly authorized by the department or local regulatory authority in writing. Such evidence may be in the form of a reinspection by the regulatory authority, or by other evidence acceptable to the regulatory authority.

Figure: Section 4(n)(1)

Maximum Number of Users in Pool at Any Time

Shallow/Instructional or Beginning or Wading Areas	Deep Area (Not Including Diving Area)	Diving Area (per each diving board)
15 sq. ft. water surface area per user	25 sq. ft. water surface area per user	300 sq. ft. water surface area per user

Figure:Section §4(o)

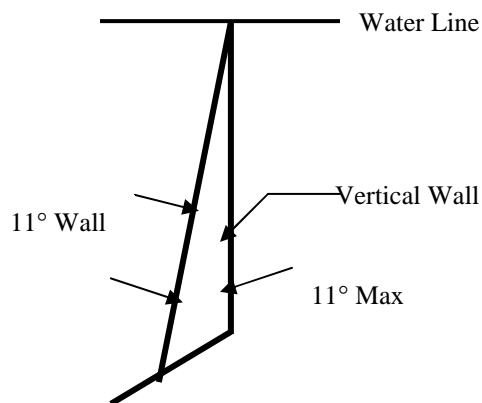


Figure: Section 4(t)(3)

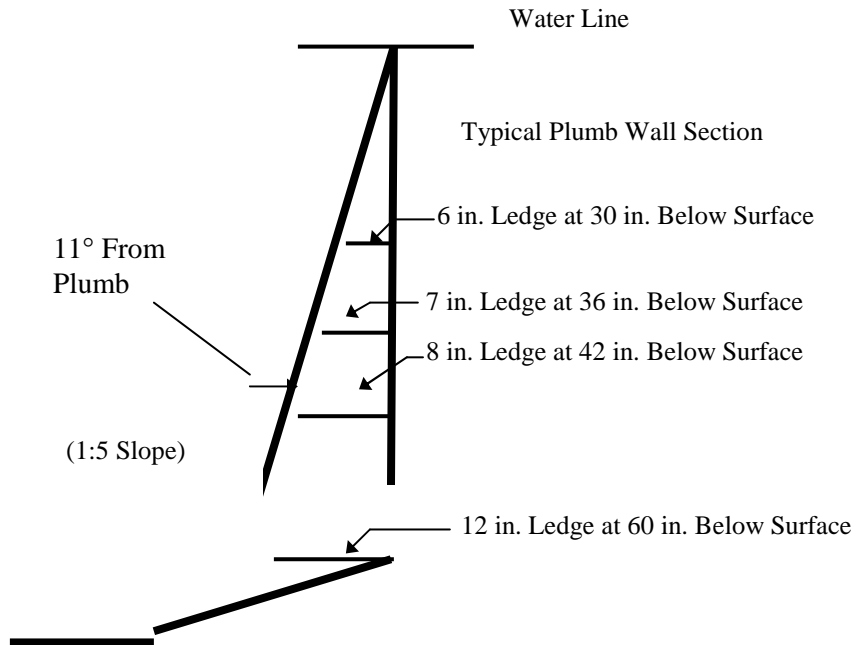


Figure: Section 6(e)(6)

Maximum Diving Board Height Over Water	¾ Meter	1 Meter	3 Meters
Max. Diving Board Length	12 ft.	16 ft.	16 ft.
Minimum Diving Board Overhang	2 ft. 6 in.	5 ft.	5 ft.
D1 Minimum	8 ft. 6 in.	11 ft. 2 in.	12 ft. 2 in.
D2 Minimum	9 ft.	10 ft. 10 in.	11 ft. 10 in.
D3 Minimum	4 ft.	6 ft.	6 ft.
L1 Minimum	4 ft.	5 ft.	5 ft.
L2 Minimum	12 ft.	16 ft. 5 in.	19 ft. 9 in.
L3 Minimum	14 ft. 10 in.	13 ft. 2 in.	13 ft. 11 in.
L4 Minimum	30 ft. 10 in.	34 ft. 7 in.	38 ft. 8 in.
L5 Minimum	8 ft.	10 ft.	13 ft.
H Minimum	16 ft.	16 ft.	16 ft.
From Plumbet to Pool Wall at Side	9 ft.	10 ft.	11 ft. 6 in.
From Plumbet to Adjacent Plumbet	10 ft.	10 ft.	10 ft.

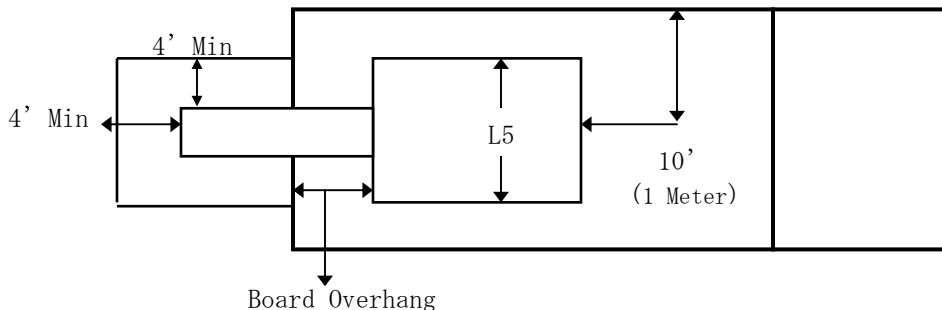
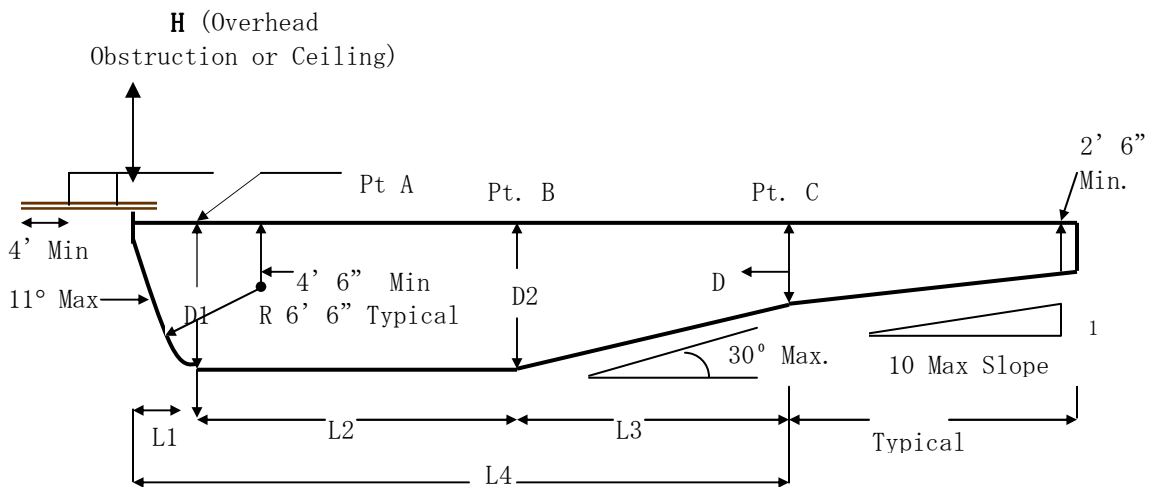


Figure: Section 21(f)(1)

Fixture Schedule	Females	Males
Water Closets	1/50	1/100
Urinals	N/A	1/100 ¹
Lavatories	1/100	1/100
Showers	1/100	1/100
Baby Changing Table	-1-	-1-
Drinking Water Fountain	1 per facility ²	1 per facility ²

¹ Where urinals are provided, one water closet less than the number specified may be provided for each urinal installed, except the number of water closets in such cases shall not be reduced to less than one half of the minimum specified.

² Only one must be provided and available to swimmers in the pool/spa area.

Figure: Section 24(a)

Disinfectant Levels	Minimum	Ideal	Maximum
Free Chlorine – pools	1.0 ppm	2.0 – 3.0 ppm	8.0 ppm
Free Chlorine – spas	2.0 ppm	3.0 – 5.0 ppm	8.0 ppm
Combined Chlorine	None	None	None
Bromine – pools	2.5 ppm	2.5 – 6.0 ppm	12.0 ppm
Bromine – spas	4.5 ppm	5.5 – 7.5 ppm	12.0 ppm

pH Levels	Minimum	Ideal	Maximum
pH	Not less than 7.0	7.4 – 7.6	7.8

Water Clarity	Minimum	Ideal	Maximum
Water turbidity	Bottom and main drain shall be clearly visible at the deepest part of the pool or spa (Section 23(c))	Bottom and main drain shall be clearly visible at the deepest part of the pool or spa (Section 23(c))	Bottom and main drain shall be clearly visible at the deepest part of the pool or spa (Section 23(c))

Spa Temperature	Minimum	Ideal	Maximum
Temperature °F	N/A	102°F or less	104°F (40°C)

Stabilizer (cyanuric acid)	Minimum	Ideal	Maximum
Cyanuric acid	None*	10.0 – 40.0 ppm	100.0 ppm

Biological Values	Minimum	Ideal	Maximum
Algae	None	None	None
Bacteria	None	None	None

*Stabilizer shall not be used in indoor pools or spas or brominated pools or spas