

1 Department of Health

2

3 Adopted Permanent Rules Relating to Public Pools

4

5 Rules as Adopted

6 4625.2100 PLUMBING AND SWIMMING POOLS.

7 All new plumbing in hotels, motels, lodging houses, and
8 resorts, and all plumbing reconstructed or replaced after
9 January 1, 1968, ~~shall~~ must be designed, constructed, and
10 installed in conformity with chapter 4715 of the Minnesota
11 Plumbing Code.

12 All swimming public pools and ~~other-artificial-recreational~~
13 ~~bathing~~ facilities ~~shall~~ must be located, constructed, and
14 operated in conformity with parts 4717.0150 to 4717.3975.

15 4717.0150 APPLICABILITY.

16 Parts 4717.0150 to 4717.3975 establish operation and
17 maintenance, design, installation, and construction standards
18 for public pools and facilities related to them.

19 4717.0250 DEFINITIONS.

20 Subpart 1. Scope. For the purposes of parts 4717.0150 to
21 4717.3975, the terms defined in this part have the meanings
22 given them.

23 Subp. 2. Commissioner. "Commissioner" means the
24 commissioner of health or the commissioner's authorized
25 representative.

26 Subp. 3. Operator. "Operator" means the individual
27 designated by the owner as responsible to operate and maintain
28 the public pool in compliance with parts 4717.0150 to 4717.3975.

29 Subp. 4. Owner. "Owner" means the person who owns the
30 public pool and is responsible for compliance with parts
31 4717.0150 to 4717.3975.

32 Subp. 5. Person. "Person" means an individual, firm,
33 partnership, association, limited liability company,
34 corporation, company, government agency, club, or organization

1 of any kind.

2 Subp. 6. Pool. "Pool" means any structure, chamber, or
3 tank containing an artificial body of water for swimming,
4 diving, relaxation, or recreational use including special
5 purpose pools and wading pools.

6 Subp. 7. Private residential pool. "Private residential
7 pool" means a pool connected with a single-family residence or
8 owner-occupied duplex, located on private property under the
9 control of the homeowner, the use of which is limited to family
10 members or the family's invited guests. A private residential
11 pool is not a pool used as part of a business.

12 Subp. 8. Public pool. "Public pool" means any pool, other
13 than a private residential pool, intended to be used
14 collectively by numbers of persons, and operated by any person
15 whether the person be an owner, lessee, operator, or
16 concessionaire, and regardless of whether a fee for use is
17 charged. A public pool includes, but is not limited to, pools
18 operated by a person in a park, school, licensed child care
19 facility, group home, motel, camp, resort, apartment building,
20 club, condominium, hotel, manufactured home park, or political
21 subdivision.

22 Subp. 9. Spa pool. "Spa pool" means a hot water pool
23 intended for seated recreational use with a water agitation
24 system in addition to the recirculation system. Spa pool is
25 synonymous with the term "whirlpool."

26 Subp. 10. Special purpose pool. "Special purpose pool"
27 means a pool intended to accommodate a use other than normal
28 swimming, diving, or wading. A special purpose pool includes,
29 but is not limited to, spa pools, pools used for water therapy,
30 dedicated plunge pools, flume water slides, and wave pools.

31 Subp. 11. Trained operator. "Trained operator" means an
32 individual who meets the requirements of part 4717.0650, subpart
33 5.

34 Subp. 12. Wading pool. "Wading pool" means any pool with
35 a maximum depth of 24 inches used or designed to be used
36 exclusively for wading.

1 4717.0275 INCORPORATIONS BY REFERENCE.

2 This part indicates documents, specifications, methods, and
3 standards that are incorporated by reference in parts 4717.0150
4 to 4717.3975. This material is not subject to frequent change
5 and is available from the source listed, for loan or inspection
6 from the Barr Library of the Minnesota Department of Health, or
7 through the Minitex interlibrary loan system.

8 A. American Public Health Association, "Standard
9 Methods for the Examination of Water and Wastewater," 18th
10 edition (1992), 1015 Fifteenth Street NW, Washington, D.C.,
11 20005.

12 B. American Society of Testing Materials (ASTM)
13 Standard F1346-91 (1991) "Standard Performance Specification for
14 Safety Covers and Labeling Requirements for All Covers for
15 Swimming Pools, Spas and Hot Tubs," 1916 Race Street,
16 Philadelphia, PA 19103.

17 C. NSF International, Standard 50 "Circulation System
18 Components for Swimming Pools, Spas or Hot Tubs," May 1992, 3475
19 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.

20 4717.0310 PLAN REVIEW FEES.

21 All plans for swimming pool construction, installation, or
22 alteration submitted to the commissioner of health for review
23 and approval under part 4717.0450 must be accompanied by the fee
24 specified in this part:

25 A. each pool, except as provided in items B and C,
26 \$500;

27 B. each spa pool, \$200; and

28 C. alterations to an existing pool without changing
29 the size or configuration of the pool, \$200.

30 4717.0375 INSPECTIONS; WATER SAMPLING.

31 The commissioner is authorized to inspect and sample the
32 water in public pools for compliance with parts 4717.0150 to
33 4717.3975.

34 The commissioner has the right of entry at any reasonable

1 hour to ensure compliance with parts 4717.0150 to 4717.3975.

2 The commissioner may collect and examine water samples for
3 compliance with part 4717.1750 at any reasonable hour.

4 4717.0450 SUBMISSION OF PLANS AND SPECIFICATIONS.

5 Subpart 1. Plan submission and review. No public pool
6 shall be constructed, installed, or materially altered until
7 complete plans and specifications are submitted to the
8 commissioner in duplicate and approved by the commissioner.

9 A. A separate plan is required for each pool site.

10 B. Plans shall be reviewed and approved by the
11 commissioner for sanitation and safety.

12 C. Once a plan is approved by the commissioner, no
13 modification affecting the safety and sanitation features of the
14 public pool shall be made without prior approval of the
15 commissioner.

16 D. The pool and related facilities must be built in
17 accordance with the approved plan unless prior approval of
18 changes are given in writing by the commissioner.

19 E. Projects that include design features not
20 specifically addressed in parts 4717.0150 to 4717.3975 must be
21 reviewed in the design development stage. Those design features
22 shall be permitted only where the pool owner demonstrates that
23 safety and water quality can be maintained based on the current
24 technology and information provided to the commissioner at the
25 time of review. The commissioner may require special provisions
26 to assure that safety and water quality are maintained. Special
27 provisions may include continuous supervision.

28 Subp. 2. Plan contents. Plans and specifications for pool
29 construction and any existing pool alteration must contain:

30 A. the name and address of the facility where the
31 pool is located;

32 B. the name and address of the pool owner and
33 operator;

34 C. the name, address, and telephone number of the
35 organization or individual who prepared the plans and

1 specifications;

2 D. a site plan or floor plan, drawn to scale, showing:

3 (1) the facility and dimensions of deck areas;

4 (2) fencing, access, and other security

5 provisions;

6 (3) toilet and shower areas;

7 (4) pool equipment location; and

8 (5) any related facilities;

9 E. plans for the pool drawn to scale, with top and

10 profile views, that include dimensions and all equipment or

11 appurtenances such as skimmers, gutters, inlets, drains, lights,

12 diving boards, slides, ladders, steps, and handrails;

13 F. a plan of the recirculation system showing all

14 pipe sizing, fittings, valves, gauges, and equipment

15 connections;

16 G. a plan for the deck and equipment room that shows

17 all drains, sumps, deck slopes, and air gaps at discharges to

18 the sewer from all deck drains, pool drains, and recirculation

19 system drains;

20 H. a complete equipment list specifying manufacturer,

21 model number, and size; and

22 I. the pool volume, surface area, and design

23 recirculation rate.

24 Subp. 3. Inspection of completed project. The owner of

25 the pool or the owner's agent must notify the commissioner and

26 any local jurisdiction which regulates pool use at the time the

27 pool is complete to permit inspection of the pool and related

28 facilities.

29 A. The pool must not be placed into public use until

30 the commissioner's inspection shows compliance with parts

31 4717.0150 to 4717.3975.

32 B. If sustained construction of the pool does not

33 begin within one year of the plan approval date, the approval is

34 no longer valid.

35 4717.0650 POOL OPERATION AND MAINTENANCE; OPERATOR TRAINING.

1 Subpart 1. **Pool maintenance.** A public pool, pool
2 equipment, and related facilities and equipment must be
3 maintained in a properly operating condition.

4 Subp. 2. **Responsibility for operation.** A public pool and
5 the related facilities and equipment must be operated and
6 maintained in working condition by a person who is designated as
7 responsible for compliance with parts 4717.0150 to 4717.3975 and
8 ensures that the pool poses no threat to public health or
9 safety. The owner shall be responsible for the operation of the
10 pool and related facilities and compliance with parts 4717.0150
11 to 4717.3975. Where another person has operational authority
12 under an agreement with the owner, that person also has
13 responsibility for the operation of the pool and related
14 facilities and for compliance with parts 4717.0150 to 4717.3975.

15 Subp. 3. **Designation of trained operator.** The owner or
16 operator of the pool must designate a trained operator who is
17 responsible for the direct operation of the pool whenever the
18 pool is open for use.

19 A. The trained operator must ~~inspect-the-pool-and~~
20 ~~pool-records-on-at-least-a-daily-basis-whenever-the-pool-is-open~~
21 ~~for-use, must document the results of the pool and record~~
22 ~~inspection, and~~ be responsible for the daily operation of the
23 pool and ensure that required testing is done and records are
24 maintained. The trained operator, or a designated alternate
25 trained operator, must be able to respond to emergency, unsafe
26 and unsanitary conditions at any time the pool is open for use.

27 B. The trained operator must assure that other
28 individuals who assist with chemical monitoring and pool
29 equipment operation are trained for those functions.

30 Subp. 4. **Operations manual.** An operations manual must be
31 available that provides operational information relating to all
32 pool equipment.

33 Subp. 5. **Operator training.** The owner or operator must
34 ensure that the designated trained operator is trained to
35 operate the pool in compliance with parts 4717.0150 to 4717.3975.

36 A. The trained operator must be trained in safe

1 chemical handling and the use of protective equipment in
 2 addition to pool operation and sanitation described in items B
 3 to F.

4 B. Until January 1, 1997, ~~the commissioner may~~
 5 ~~require the trained~~ any operator ~~to obtain a certificate of~~
 6 ~~competency~~ is eligible for certification through attendance at
 7 and successful completion of a pool operator's training course.

8 C. After January 1, 1997, the trained operator must
 9 be certified as successfully completing a pool operator training
 10 course as specified in item E.

11 D. A certified trained operator must successfully
 12 complete a training course as specified in item E at least once
 13 every five years after January 1, 1997.

14 E. Acceptable training courses are:

15 (1) the National Swimming Pool Foundation
 16 Certified Pool Operator course;

17 (2) the National Spa and Pool Institute Tech I
 18 and Tech II courses (both required); or

19 (3) the National Recreation and Park Association
 20 Aquatic Facility Operator course.

21 F. After January 1, 1997, a copy of the trained
 22 operator's training certificate must be posted at the facility
 23 whenever the pool is open for use.

24 4717.0750 POOL RECORD.

25 A record of a public pool's operation and routine
 26 maintenance must be kept by the operator. The record must be
 27 maintained for six years. The record must include the following
 28 for each day the pool is open to use:

29 ~~A. the total number of users for the day;~~

30 ~~B. the operating periods of recirculation pumps and~~
 31 ~~filters and corresponding rate-of-flow meter readings;~~

32 ~~C. B.~~ amounts of chemicals used, except chemicals
 33 added through an automated system;

34 ~~D. C.~~ disinfectant residuals including both free and
 35 total disinfectant residuals;

- 1 E- D. pH readings;
- 2 E. the temperature readings of a pool with a heater;
- 3 F. any other pool chemistry measurements taken,
- 4 although not required to be recorded daily, such as alkalinity
- 5 and cyanuric acid concentrations;
- 6 G. maintenance of equipment;
- 7 G- H. any malfunction of equipment; and
- 8 H- I. any accidents or injuries requiring assistance
- 9 from a lifeguard, attendant, or emergency medical personnel.

10 4717.0775 REPORTING.

11 All pool incidents resulting in death or serious injury

12 that require assistance from emergency medical personnel must be

13 reported to the commissioner by the owner or the owner's agent

14 by the end of the next working day.

15 4717.0950 LIFEGUARD REQUIREMENT.

16 An individual currently certified in first aid and adult,

17 child, and infant cardiopulmonary resuscitation must be on duty

18 at all times the pool is open to use, unless a sign warning that

19 a lifeguard is not present is posted as specified in part

20 4717.1050.

21 The individual must have a Red Cross lifeguard

22 certification or equivalent and be responsible for user

23 supervision, safety, and sanitation at all times the pool is in

24 use.

25 4717.1050 NO LIFEGUARD WARNING SIGN.

26 When a lifeguard is not on duty at a public pool open to

27 use, a warning sign must be placed in plain view.

28 A. The sign must state in clear, legible letters at

29 least four inches high: "Warning - No lifeguard on duty."

30 B. The sign must state in clear, legible letters at

31 least one inch high: "Children must not use the pool without an

32 adult in attendance."

33 4717.1250 EMERGENCY TELEPHONE LOCATION.

34 A pool with a lifeguard present must have a telephone in or

1 immediately adjacent to the pool area. When a telephone is
2 provided, the emergency number must be posted. When a telephone
3 is not located in the pool enclosure, a sign placed in plain
4 view must indicate the location of the nearest telephone
5 available to a pool user and the emergency number.

6 4717.1350 POOL FACILITY CAPACITY.

7 Subpart 1. Posting pool facility capacity. The capacity
8 for the pool, determined according to subpart 2, must be posted
9 in the pool enclosure area.

10 Subp. 2. Pool user capacity. User capacity must be
11 determined as specified in this subpart.

12 A. One person is permitted for each 15 square feet of
13 pool water surface in areas of the pool with five feet or less
14 in water depth.

15 B. One person is permitted for each 25 square feet of
16 pool water surface in areas of the pool over five feet in water
17 depth.

18 C. Three hundred square feet of pool water surface
19 area must be reserved around each diving board, diving platform,
20 or slide. The area in this item must not be included when
21 computing the user capacity in item B. Ten persons must be
22 included in the user capacity for each diving board, diving
23 platform, and slide.

24 D. Spa pools must be limited to one user for each
25 three linear feet of seating space provided in the spa pool,
26 measured along the front edge of the seats.

27 4717.1450 LIFEGUARD STATIONS AND LIFESAVING EQUIPMENT.

28 Subpart 1. Lifeguard stations. At any time a pool with
29 more than 2,250 square feet of water surface is operated
30 primarily for unorganized use, the pool must have an elevated
31 lifeguard platform or chair. In a pool with 4,000 square feet
32 or more of water surface, additional elevated platforms, or
33 chairs must be located to provide a clear, unobstructed view of
34 the pool bottom in the area under surveillance.

35 Subp. 2. Lifesaving equipment. Except for a spa pool or

1 wading pool, not less than one unit of lifesaving equipment as
2 described in subpart 3, must be at every public pool. One unit
3 must be provided for each 2,000 square feet of water surface or
4 fraction thereof.

5 Subp. 3. Lifesaving equipment unit. One unit of
6 lifesaving equipment is:

7 A. a ring buoy attached to a 3/16 inch manila, or
8 equivalent material, rope that is 1-1/2 times the pool width,
9 but not over 60 feet; and

10 B. a lifepole or shepherd's crook pole with blunted
11 ends and a minimum fixed length of 12 feet; or

12 C. where a lifeguard is provided, a rescue tube may
13 be used instead of a ring buoy.

14 Subp. 4. Lifesaving equipment; access. Lifesaving
15 equipment must be mounted in conspicuous places, distributed
16 around the pool deck, at lifeguard chairs or at another readily
17 accessible location. The equipment must be plainly marked "For
18 emergency use only." Equipment must be kept in repair and ready
19 condition. No one may tamper with, use for any purpose other
20 than its intended use, or remove equipment from its established
21 location, except for emergency use.

22 Subp. 5. First aid kit; spine board. Every pool where a
23 lifeguard is present must have a first aid kit filled and ready
24 for use and a spine board with ties. The spine board must be
25 within the pool enclosure. The first aid kit must contain at
26 least:

27 A. two units of one inch adhesive compress;

28 B. two units of two-inch bandage compress;

29 C. two units of three-inch bandage compress;

30 D. two units of four-inch bandage compress;

31 E. one unit of (three-inch by three-inch) plain gauze
32 pad;

33 F. two units of gauze roller bandage;

34 G. one unit of eye dressing packet;

35 H. four units of plain absorbent gauze one-half
36 square yard;

- 1 I. three units of plain absorbent gauze, (24 inches
- 2 by 72 inches);
- 3 J. four units of triangular bandages, 40 inches;
- 4 K. one bandage scissors;
- 5 L. one tweezers;
- 6 M. rubber gloves; and
- 7 N. pocket face mask.

8 4717.1550 POOL ACCESS RESTRICTION; FENCING.

9 Subpart 1. General. Access to a public pool must be
10 controlled to effectively prevent the entrance of children.

11 A. Where fencing is used to control access, it must
12 comply with subparts 2 to 6 except as noted in item B, subitem
13 ~~(3)~~ (2).

14 B. Access to a public pool within a building or
15 enclosure must be controlled:

16 (1) by locating the pool in a separate room with
17 ~~self-closing,~~ self-latching doors ~~or-gates~~ that restrict access
18 ~~from-public-spaces~~ to the pool-area room; or

19 (2) ~~by-locating-the-pool-in-a-separate-room~~
20 ~~within-a-building~~ with fencing or a comparable barrier which is
21 at least four feet high and has self-closing doors-and,
22 self-latching doors ~~that-restrict-access-to-the-room,~~ or gates.

23 ~~(3)-with-fencing-or-a-comparable-barrier-that~~
24 ~~complies-with-subparts-2-to-6,-except-that-the-fencing-or~~
25 ~~barrier-height-specified-in-subpart-2,-item-A,-may-be-four-feet~~
26 ~~high.~~

27 Exception: poolside guest rooms, corridors adjacent to poolside
28 guest rooms, and poolside activity areas may be within the pool
29 enclosure.

30 Subp. 2. Fencing. Fencing must:

- 31 A. be at least five feet high;
- 32 B. be equipped with self-closing, self-latching gates
- 33 capable of being locked;
- 34 C. not have any opening greater than four inches;
- 35 D. not have any opening greater than two inches below

1 the fence; and

2 E. not be a readily climbable design.

3 Subp. 3. Existing four-foot fencing. Fencing in existence
4 prior to January 1, 1995, that is less than five feet high must:

5 A. be no less than four feet high;

6 B. be equipped with self-closing, self-latching gates
7 capable of being locked;

8 C. not have any opening greater than four inches; and

9 D. not be a readily climbable design.

10 Subp. 4. Wading pools. Fencing for a wading pool
11 enclosure must be at least 42 inches high for existing
12 installations and 48 inches high for new installations.

13 Subp. 5. Chain link fencing. New chain link fencing must
14 not exceed 1-1/2 inch mesh for fencing less than eight feet
15 high. New chain link fencing eight foot high or higher must
16 have mesh which does not exceed two inches.

17 Subp. 6. Latches. Latches for new installations must be
18 four feet above the ground.

19 4717.1575 POOL COVERS.

20 If a pool cover is used, any new cover must comply with
21 ASTM Standard F1346-91.

22 A. Pool covers must be maintained in a clean and
23 sanitary condition to preclude contamination of the pool water.

24 B. If the deck area is accessible when the cover is
25 in place, a fully secured safety cover must be used.

26 C. A pool cover may not be used in lieu of a fence or
27 other access restrictions required by part 4717.1550.

28 4717.1650 USER SANITATION AND SAFETY.

29 Subpart 1. Posting user safety and sanitation rules.

30 Placards and pictorial representations, where appropriate,
31 embodying the requirements in this part must be posted in plain
32 view in the pool room or enclosure and in the dressing rooms of
33 all public pools. Lettering must be clear, legible, and at
34 least one-fourth inch high.

35 Subp. 2. Communicable disease. No person with or

1 suspected of having a communicable disease which could be
2 transmitted through use of the pool shall work at or use any
3 public pool.

4 Subp. 3. **Warning.** A person with any considerable area of
5 exposed subepidermal tissue, open blisters, or cuts must be
6 warned that these may become infected and advised not to use the
7 public pool.

8 Subp. 4. **Showering.** Any person using a public pool must
9 take a cleansing shower using warm water and soap and thoroughly
10 rinse off all soap before entering the pool enclosure. A user
11 leaving the pool to use the toilet must take a second cleansing
12 shower before returning to the pool enclosure. A person who
13 exercises, applies lotion, or uses a sauna or steam room must
14 shower before using the pool.

15 Subp. 5. **No spitting.** Spitting, spouting water from the
16 mouth, and blowing the nose in the pool is prohibited.

17 Subp. 6. **No running.** No running or boisterous or rough
18 play, except supervised water sports, is permitted in the pool,
19 in dressing rooms or shower rooms, on runways, on the diving
20 board, or platforms.

21 Subp. 7. **Glassware.** Glassware and similar material with a
22 tendency to shatter on impact is not allowed in the pool
23 enclosure area.

24 Subp. 8. **Diving.** Diving is not permitted except in areas
25 that comply with part 4717.3750.

26 Subp. 9. **No pets.** Domestic animals are not permitted in
27 the pool enclosure, showers, or dressing rooms.

28 4717.1750 POOL WATER CONDITION.

29 Subpart 1. **Maximum water temperature.** The water
30 temperature in a pool must not be more than 104 degrees
31 Fahrenheit.

32 Subp. 2. **Test kits.** Each pool must have the testing
33 equipment specified in this subpart:

34 A. a DPD (Diethyl-P-Phenylene Diamine) test kit to
35 measure the concentration of disinfectant in water, accurate

1 within 0.1 parts per million;

2 B. a phenol red pH testing kit accurate to the
3 nearest 0.2 pH unit;

4 C. a test kit to measure alkalinity using the methyl
5 orange or equivalent method; and

6 D. where cyanuric acid is used, a test kit to test
7 cyanuric acid concentration.

8 Subp. 3. Disinfection residual. When in use, a pool must
9 be continuously disinfected with a chemical that imparts an
10 easily measured, free available residual.

11 A. When chlorine is used, a free chlorine residual of
12 at least 0.5 parts per million must be maintained throughout the
13 pool.

14 B. When bromine is used, a bromine residual of at
15 least 1.0 parts per million must be maintained throughout the
16 pool.

17 C. The minimum free residual for chlorine must be 1.0
18 parts per million and 2.0 parts per million for bromine when any
19 of the following conditions exist:

20 (1) cyanuric acid exceeds 30 parts per million;

21 (2) the pH exceeds 7.7;

22 (3) the water temperature exceeds 84 degrees
23 Fahrenheit; or

24 (4) the pool is a wading pool.

25 D. The ~~chlorine-or-bromine~~ disinfectant concentration
26 in an operating pool must not exceed five parts per million for
27 chlorine and ten parts per million for bromine.

28 E. If other halogens are used, residuals of
29 equivalent disinfectant strength must be maintained.

30 F. If the concentration of combined chlorine residual
31 exceeds 0.5 parts per million, the pool must be superchlorinated
32 or treated to reduce the concentration of the combined chlorine
33 residual to not exceed 0.5 parts per million.

34 G. Where a cyanuric acid compound is used to
35 stabilize chlorine, the concentration of cyanuric acid in the
36 pool must not exceed 100 parts per million.

1 Subp. 4. Disinfection of spa pools. The ~~bromine-residual~~
2 ~~or-free-chlorine~~ disinfectant residual in a spa pool must be at
3 least 2.0 parts per million for free chlorine and 4.0 parts per
4 million for bromine throughout the pool when in use.

5 Subp. 5. pH. Water in the pool must be maintained with a
6 pH of not less than 7.2 and not more than 8.0.

7 Subp. 6. Alkalinity. The alkalinity of the water in the
8 pool must be at least 50 parts per million.

9 Subp. 7. Water clarity. Whenever the pool is open for
10 use, the pool water must be clear enough so the bottom drain is
11 easily visible.

12 Subp. 8. Use of nontoxic chemicals; chemical container
13 security. Chemicals used to control water quality must not
14 impart toxic properties to the water. All containers used for
15 chemicals must be kept in a secure location, inaccessible to
16 pool users, and properly labeled and stored according to the
17 manufacturer's instructions.

18 Subp. 9. Bacteriological samples. When bacteriological
19 sampling is done, no sample collected may:

20 A. exceed 200 bacteria per milliliter as determined
21 by the heterotrophic plate count; or

22 B. indicate the presence of total coliform organisms
23 in a 100 milliliter sample by any of the following methods:

24 (1) multiple tube;

25 (2) membrane filter; or

26 (3) the Minimal Medium ONPG-MUG test described in
27 Code of Federal Regulations, title 40, part 141.

28 All samples must be collected, dechlorinated, and examined
29 according to the American Public Health Association's "Standard
30 Methods for the Examination of Water and Wastewater."

31 Subp. 10. Bacteriological treatment. Where sampling
32 indicates that the standards in subpart 9 are exceeded, the pool
33 must be treated to effectively reduce biological concentration
34 to a complying level.

35 4717.1850 DEPTH OF POOL WATER.

1 Subpart 1. **General.** The minimum depth of water in a
2 public pool must be three feet. The maximum depth at the
3 shallow end of the pool must not exceed three feet six inches.

4 Subp. 2. **Exceptions.** The requirements in subpart 1 do not
5 apply to special purpose pools, wading pools, and pools used for
6 supervised competition.

7 A. A wading pool must have a maximum depth of no more
8 than 24 inches.

9 B. A pool with a zero depth area may be approved by
10 the commissioner if:

11 (1) a lifeguard is present at the zero depth area
12 at all times the pool is in use; and

13 (2) there is an effective barrier, such as
14 stanchions and ropes to restrict access from the deck of the
15 pool to the area where the water depth is less than three feet,
16 except on the side of zero depth. The barrier must permit easy
17 removal for emergency access or maintenance.

18 4717.1950 POOL CLEANING.

19 Subpart 1. **Cleaning schedule.** Visible dirt on the bottom
20 of the pool must be removed every 24 hours or more frequently as
21 needed to eliminate buildup. Visible scum or floating matter on
22 the pool surface must be removed no less than every 24 hours by
23 flushing or other effective means.

24 Subp. 2. **Cleaning system.** A vacuum-cleaning system
25 capable of cleaning the entire pool must be provided, except
26 that it is not required for spa pools with less than 75 square
27 feet of water surface.

28 4717.2150 WATER SUPPLY.

29 Subpart 1. **Potable supply.** The water supply serving a
30 pool and all plumbing fixtures, including drinking fountains,
31 lavatories, and showers, must meet the requirements of the
32 commissioner for potable water specified in chapters 4720 and
33 4725.

34 Subp. 2. **Backflow prevention.** All portions of the water
35 distribution system serving the pool and related facilities must

1 be protected against backflow. Water introduced into the pool,
2 either directly or through the recirculation system, must be
3 supplied through an air gap or protected with a suitable
4 backflow preventer as specified in parts 4715.2000 to 4715.2170.

5 4717.2250 SEWER SYSTEM.

6 The sewer system must adequately serve the pool, bathhouse,
7 dressing rooms, and related facilities and must conform to the
8 standards of the commissioner of health and the Minnesota
9 Pollution Control Agency.

10 A. There must be no direct physical connection
11 between the sewer system and any drain from the pool or
12 recirculation system.

13 B. Any pool, gutter drain, or overflow from the
14 recirculation system when discharged to a sewer system, storm
15 drain, or other complying natural drainage course must discharge
16 through a complying air gap or air break to preclude the backup
17 of sewage or waste into the pool or piping system.

18 C. Valves and pumps used for draining the pool must
19 be sized or designed to prevent the surcharging of the sanitary
20 sewer.

21 D. Any sanitary sewer serving facilities related to
22 the pool must discharge into the public sewer system.

23 E. Where a public sewer system is not available, the
24 connection must be made to a treatment system designed,
25 constructed, installed, and operated according to the
26 requirements of the commissioner of health and the Minnesota
27 Pollution Control Agency.

28 4717.2350 POOL STRUCTURE.

29 Subpart 1. General. The pool and all appurtenances must
30 be constructed of materials which:

31 A. are inert, nontoxic, impervious, permanent and
32 enduring;

33 B. withstand design stress;

34 C. provide a tight tank with a smooth and easily
35 cleaned surface; and

1 D. can be finished in a white or light color.

2 Wood tank construction and vinyl liner pools are prohibited.

3 Subp. 2. **Finish.** The pool basin finish, including bottom
4 and sides, must:

5 A. be of white or light colored material;

6 B. be nontoxic to humans;

7 C. have a smooth finished surface;

8 D. be void of cracks; and

9 E. be bonded to the supporting members, excluding
10 structural expansion joints.

11 Subp. 3. **Design, detail, and structural stability.** The
12 pool must be designed, installed, operated, and constructed to
13 withstand all anticipated loading for both full and empty
14 conditions.

15 Subp. 4. **Designer responsibility.** The owner and the
16 architect, engineer, contractor, or other designer is
17 responsible for the structural stability and safety of the pool
18 design.

19 Subp. 5. **Relief valve.** A hydrostatic relief valve or an
20 underdrain system must be provided where a high water table may
21 affect the stability of the pool.

22 Subp. 6. **Shape.** The pool's shape must:

23 A. be such that the circulation of pool water and
24 control of users' safety are not impaired;

25 B. allow complete, continuous circulation of pool
26 water throughout all parts of the pool; and

27 C. ensure that user safety is not impaired.

28 Underwater or overhead projections or obstructions that would
29 endanger user safety or interfere with operation are prohibited.

30 Subp. 7. **Corners.** Corners formed by the intersection of
31 walls and the bottom must be rounded with at least a one-half
32 inch radius.

33 Subp. 8. **Slope of bottom.** The slope must conform to the
34 provisions in this subpart.

35 A. The slope of the bottom of any part of the pool
36 with a water depth of less than five feet must not be more than

1 one foot in ten feet and must be uniform.

2 B. In parts of the pool with a water depth greater
3 than five feet, the slope must not exceed one foot in three feet.

4 Subp. 9. Side walls. The walls of the pool must be either:

5 A. vertical for water depths of at least six feet; or

6 B. vertical for a distance of three feet below the
7 water level, below which the wall may be curved to the bottom
8 with a radius not greater than the difference between the depth
9 at that point and three feet, provided that vertical is
10 interpreted to permit slopes not greater than one foot,
11 horizontally, for each five feet of depth of sidewall (11
12 degrees vertical).

13 Subp. 10. Ledges. A ledge along the pool wall within the
14 pool basin is permitted only if it is a necessary part of the
15 sidewall construction. The ledge must be:

16 A. at least two feet six inches below the water
17 surface;

18 B. not over four inches wide; and

19 C. sloped into the pool with a rounded outside edge.

20 Subp. 11. Wading pools. Wading pools must be physically
21 separated from other pools and have a separate recirculation
22 system.

23 Subp. 12. Fountains. Fountains or similar features
24 require approval by the commissioner and must be located in
25 areas of two feet or less of water depth. They must be designed
26 to preclude climbing.

27 4717.2450 MARKINGS AND LINES.

28 Subpart 1. Depth markings. The depth of the water in the
29 pool must be plainly marked in numbers and letters, be in a
30 color contrasting with the background, and specify the water
31 depth and units in feet and inches. Numerals must be at least
32 four inches high. The water depth must be indicated:

33 A. on the edge of the deck next to the pool;

34 B. at the maximum and minimum depths;

35 C. on all sides of the pool;

1 D. at the points of change of slope between deep and
2 shallow portions; and

3 E. at intermediate increments of depth, spaced at not
4 more than 25-foot intervals.

5 Subp. 2. **Depth transition markings.** Where a transition to
6 a steeper bottom slope occurs, the transition must be marked on
7 the bottom and walls of the pool by a stripe of dark contrasting
8 color at least six inches wide.

9 Subp. 3. **No diving markings.** Pools and sections of pools
10 that do not comply with the depth requirements for diving in
11 part 4717.3750 must have:

12 A. the words "No Diving" in letters not less than four
13 inches high and of a color contrasting with the background
14 located on the pool deck on all sides of the pool where diving
15 is not permitted and spaced at not more than 25 foot intervals;
16 or

17 B. the universal no diving symbol at least four inches
18 high accompanied by the words "No Diving" in letters not less
19 than one-half inch high and of a color contrasting with the
20 background located on the pool deck on all sides of the pool
21 where diving is not permitted and spaced at not more than 25
22 foot intervals. This provision does not apply to spa pools,
23 wading pools, flume or plunge pools.

24 Subp. 4. **Stair markings.** The leading edge of stair treads
25 must be marked by a stripe of dark, contrasting color between
26 one-half inch and two inches in width.

27 4717.2550 RECIRCULATION SYSTEM.

28 All pools must have a water recirculation system with
29 treatment and filtration equipment consisting of overflow
30 gutters or skimmers, main drains, inlets, pumps, piping,
31 filters, water conditioning, disinfection equipment, and other
32 accessory equipment. The pumps, filter, disinfectant and
33 chemical feeders, and related appurtenances must be kept in
34 operation at all times during the swimming season unless
35 approved by the commissioner.

1 4717.2560 RECIRCULATION RATE.

2 Subpart 1. **General recirculation rate.** The water
3 recirculation system must clarify and disinfect the pool volume
4 of water in six hours or less.

5 Subp. 2. **Wading pools and special purpose pools.** The
6 water recirculation system of a wading pool or a special purpose
7 pool must recirculate a water volume equal to the pool volume in
8 two hours or less.

9 Subp. 3. **Spa pools.** The recirculation system in a spa
10 pool must recirculate a water volume equal to the pool volume in
11 30 minutes or less, except that a minimum rate of 35 gallons per
12 minute is required.

13 Subp. 4. **Dedicated plunge pools.** The recirculation system
14 of a dedicated plunge pool must recirculate a water volume equal
15 to the total volume of the pool in one hour or less.

16 Subp. 5. **Pools with zero depth pool area.** The
17 recirculation system of a pool with a zero depth end must
18 recirculate water at the rate specified in this subpart.

19 A. The area of the pool with a water depth of less
20 than three feet must have a recirculation rate of two hours or
21 less.

22 B. The remainder of the pool must meet the
23 requirements in subpart 1.

24 C. A system of bottom inlets must be provided in the
25 shallow end.

26 4717.2570 RECIRCULATION EQUIPMENT.

27 Subpart 1. **General.** Equipment which is part of the
28 installation or alteration of a pool recirculation system must
29 comply with Standard 50 "Circulation System Components for
30 Swimming Pools, Spas or Hot Tubs" of the NSF International.

31 Subp. 2. **Recirculation system strainers.** The
32 recirculation system must include a strainer to prevent debris
33 such as hair and lint from reaching the pump and filters. The
34 strainer must:

35 A. be corrosion-resistant;

- 1 B. have openings not more than one-eighth inch;
2 C. provide a free flow area at least four times the
3 area of the pump suction line; and
4 D. be readily accessible for frequent cleaning.

5 **Subp. 3. Recirculation system piping.** Recirculation
6 system piping must:

7 A. carry the recirculation quantity of water required
8 in part 4717.2650 at a velocity not exceeding six feet per
9 second for suction piping, eight feet per second for discharge
10 piping, and three feet per second for gravity flow piping;

11 B. be nontoxic and corrosion-resistant, and able to
12 withstand operating pressures; and

13 C. be identified by a label, color code, tag, or
14 other distinguishing marking.

15 **Subp. 4. Rate-of-flow indicator.** A rate-of-flow
16 indicator, reading in gallons per minute, must be installed and
17 located, preferably on the pool return line, so the rate of
18 recirculation and backwash rate are indicated. The indicator
19 must be capable of reading flows measuring at least 1-1/2 times
20 the design flow rate, be accurate within ten percent of the true
21 flow, and be easy to read.

22 **Subp. 5. Pumps.** Pumps must provide the number of
23 turnovers of pool water specified in part 4717.2560.

24 If the pump or suction piping is located above the overflow
25 level of the pool, the pump must be self-priming. The pump or
26 pumps must be capable of providing flow to backwash filters.

27 Under normal conditions, the pump or pumps must supply the
28 recirculation rate of flow specified in part 4717.2560 at a
29 dynamic head of at least 50 feet for pressure filters.

30 **Subp. 6. Heaters.** Pools equipped with heaters must have a
31 fixed thermometer in the recirculation line to measure the
32 temperature of the water returning to the pool.

33 **Subp. 7. Valves.** Valves must be provided on the main
34 drain and skimmer lines to permit balancing the recirculation
35 flow.

1 4717.2580 INLETS AND OUTLETS.

2 Subpart 1. **Outlets.** All pools must have an outlet at the
3 deepest point to permit the pool to be completely emptied.

4 A. Outlet openings must be covered by grating not
5 readily removable by users.

6 B. Outlet openings of the grating on the floor of the
7 pool must be at least four times the area of discharge pipe and
8 provide enough area so the velocity of water passing the grate
9 does not exceed 1-1/2 feet per second.

10 C. Grate openings must be no more than one-half inch
11 wide.

12 D. When a single outlet is used, it must be at least
13 100 square inches in size, or have an antivortex cover.

14 E. In pools more than 30 feet wide, multiple outlets
15 must be provided. The outlets must be no more than 30 feet
16 apart, and no more than 15 feet from the side walls.

17 Subp. 2. **Inlets.** Water inlets must be located to produce
18 uniform circulation of water and maintain a uniform disinfectant
19 residual throughout the entire pool without the existence of
20 dead spots.

21 A. Inlets from the recirculation system must be flush
22 with the pool wall and submerged at least 12 inches below the
23 water level.

24 B. Over-the-rim fill spouts are not permitted unless
25 located under a diving board or installed in a manner that does
26 not present any hazard.

27 C. Make up water spouts must terminate at least six
28 inches above the fill rim of the pool or surge tank.

29 Subp. 3. **Adjustable inlets.** Inlets must be directionally
30 adjustable and located so there is complete, uniform circulation
31 of incoming water throughout the pool, a uniform disinfectant
32 residual is maintained at all times, and there are no dead spots.

33 A. Each inlet must be adjustable or have an
34 individual gate or similar valve to permit adjustment of water
35 volume to obtain the best circulation.

36 B. The maximum spacing of inlets must be 20 feet

1 based on the pool perimeter.

2 C. In a pool with a surface area greater than 1,600
3 square feet or longer than 60 feet, side inlets must be placed
4 at 15-foot intervals around the entire perimeter.

5 D. An engineered, manufactured gutter system with
6 integral supply orifices may be used instead of individual
7 directional inlets.

8 4717.2590 OVERFLOW GUTTERS.

9 Subpart 1. General. Overflow gutters must extend
10 completely around the pool except at steps or recessed ladders.

11 A. The overflow gutter must also serve as a handhold.

12 B. The gutter must continuously remove 50 percent or
13 more of the recirculated water and return it to the filter.

14 C. Pools with overflow gutters must be provided with
15 surge capacity.

16 D. The gutters, drains, and return piping must be
17 sized to remove overflow water caused by recirculation,
18 displacement, wave action, or other cause produced from maximum
19 pool user load.

20 E. Drain outlets must not be more than 15 feet apart.

21 F. The opening into the gutter beneath the coping
22 must not be less than four inches wide. The interior of the
23 gutter must not be less than three inches wide with a depth of
24 at least three inches.

25 G. Gutters must be designed to prevent the entrance
26 of or entrapment of a user's arms or legs.

27 H. The overflow edge or lip must be rounded and no
28 thicker than 2-1/2 inches for the top two inches.

29 I. Overflow outlets must have outlet pipes at least
30 two inches in diameter.

31 J. Outlet fittings must have a clear opening in the
32 grating at least equal to 1-1/2 times the cross sectional area
33 of the outlet pipe.

34 K. New overflow gutter system installations must
35 include automatic water level control to provide automatic and

1 continuous skimming during quiescence.

2 Subp. 2. **Surge systems and surge capacity.** An in-pool
3 surge system may be used only if it is part of an engineered and
4 manufactured gutter system that has surge weirs which provide
5 effective skimming during quiescence.

6 A. In-pool surge weirs must be self-closing during
7 normal pool use.

8 B. The total surge capacity of the system must be at
9 least one gallon per square foot of water surface.

10 C. If some of the surge capacity is within the gutter
11 system, the system must be able to carry 50 percent of the
12 recirculation flow while maintaining the surge capacity.

13 Subp. 3. **Rollout and deck systems.** Nothing in this part
14 precludes the use of a rollout overflow system or deck level
15 system if proper surge capacity is provided as specified in
16 subpart 2.

17 4717.2595 SKIMMERS.

18 Subpart 1. **Skimmers.** Skimmers are permitted in lieu of a
19 gutter if the suction outlets induce enough motion to the pool
20 water to remove floating oil and waste from the entire pool
21 surface, and the edge of the pool deck provides a handhold for
22 swimmers.

23 A. Skimming devices must be built into the pool wall.

24 B. At least one skimming device must be provided for
25 each 400 square feet of water surface area or fraction thereof.

26 C. Where two or more skimmers are used, they must not
27 interfere with each other and must ensure skimming of the entire
28 pool surface.

29 D. The flow through rate must be no less than 30
30 gallons per minute.

31 E. Skimmer piping and other components must be
32 designed for a total capacity of at least 80 percent of the
33 required filter flow of the recirculation system.

34 F. The skimmer weir must automatically adjust and
35 operate freely with continuous action to variations in water

1 level over a range of at least four inches.

2 (1) The weir must operate at all flow variations.

3 (2) The weir must be of a buoyancy and design to
4 permit effective skimming velocity.

5 G. Provision must be made to prevent airlock in the
6 skimmer suction line.

7 (1) Where an equalizer pipe is used, it must be
8 sized to meet the capacity requirements of the filter and pump
9 and not be less than two inches in diameter. If equalizer lines
10 are not provided on skimmers, the main drain must be sized based
11 on the total recirculation flow. The equalizer pipe must be
12 located at least one foot below the lowest overflow level of the
13 skimmer. It must be provided with a valve or equivalent device
14 that automatically opens when the water level drops below the
15 lowest weir level.

16 (2) If any other device, surge tank, or
17 arrangement is used, enough water for pump suction must be
18 assured.

19 (3) Equalizer pipe is not required on a pool with
20 an automatic water level control and on spa pools with less than
21 a 1,000 gallon capacity.

22 Subp. 2. Screen. Skimmers must have an easily removable
23 and cleanable basket or screen through which all overflow water
24 passes to trap large solids.

25 4717.2610 DISINFECTANT AND CHEMICAL FEEDERS.

26 A pool must have a disinfectant feeder or feeders that meet
27 the requirements in this part.

28 A. Feeders must be sturdy and withstand wear,
29 corrosion, or attack by disinfectant solutions or vapors.

30 B. Feeders must not be adversely affected by repeated
31 regular adjustment or other anticipated use.

32 C. Feeders must be capable of being disassembled for
33 cleaning and maintenance.

34 D. The design and construction of feeders must
35 preclude stoppage from chemicals intended to be used or foreign

1 materials.

2 E. Feeders must incorporate failure-proof features so
3 the disinfectant cannot feed directly into the pool, the pool
4 piping system, water supply system, or pool enclosure under any
5 type of failure of the equipment, or during its maintenance.

6 F. Feeders must be able to supply at least the
7 equivalent of one pound of chlorine in eight hours for each
8 10,000 gallons of pool capacity.

9 G. Feeders must have a graduated and clearly marked
10 dose adjustment ranging from full capacity to 25 percent of
11 capacity.

12 H. Feeders must be capable of continuous delivery
13 within ten percent of the dose at any setting.

14 I. When the disinfectant is introduced at the suction
15 side of the pump, a device or method to prevent air lock of the
16 pump or recirculation system must be provided.

17 4717.2620 CHEMICAL HANDLING EQUIPMENT; PROTECTIVE EQUIPMENT.

18 Equipment and piping used to apply chemicals to the water
19 must be sized, designed, and of material that does not clog and
20 is easily cleaned. Material must be resistant to the action of
21 the chemicals used.

22 Protective equipment recommended by the chemical
23 manufacturer as necessary for the safe handling of any chemicals
24 used must be provided.

25 4717.2630 USE OF GAS CHLORINE.

26 Subpart 1. General. The standards in this part apply when
27 compressed gas chlorine is used. The gas chlorine and
28 chlorinating equipment must be in:

29 A. a separate, mechanically ventilated room; or

30 B. a secure reach-in enclosure.

31 Subp. 2. Rooms. When a room is used, it must comply with
32 the provisions in this subpart.

33 A. The room must be above grade.

34 B. A shatter resistant inspection window must be
35 installed in an interior wall or the door.

1 C. The room must have a ventilating fan with a
2 capacity to provide one complete air change per minute when the
3 room is occupied.

4 D. Separate switches for the fan and lights must be
5 located outside the room. Outside switches must be protected
6 from vandalism. A signal light indicating fan operation must be
7 provided at each entrance when the fan can be controlled from
8 more than one point.

9 E. The ventilating fan must take suction near the
10 floor as far as practical from the door and air inlet, with the
11 point of discharge located so as not to contaminate air inlets
12 to any rooms or structures.

13 F. Air inlets must be through louvers or other
14 ventilation openings near the ceiling.

15 G. When present, floor drains must discharge to the
16 outside of the building and must not be connected to other
17 internal or external drainage systems.

18 Subp. 3. **Reach-in enclosures.** Reach-in enclosures must be:

19 A. not over two feet in depth;

20 B. vandal resistant; and

21 C. naturally ventilated by means of openings in the
22 upper and lower parts of the enclosure.

23 Subp. 4. **Doors.** The door of a room or enclosure must be
24 labeled "DANGER - GAS CHLORINE" in letters at least four inches
25 high.

26 Subp. 5. **Seals.** All openings between a chlorine room or
27 enclosure and other enclosed space must be sealed.

28 Subp. 6. **Venting.** Vents from feeders and storage rooms or
29 enclosures must discharge to the outside atmosphere, above grade.

30 Subp. 7. **Chlorinating equipment.** Chlorinating equipment
31 must be capable of withstanding wear without developing leaks.

32 A. All chlorine cylinders must be anchored to prevent
33 falling over.

34 B. A valve stem wrench must be maintained on the
35 chlorine cylinder so the supply can be shut off quickly in an
36 emergency.

1 C. The valve protection hood must be kept in place
2 except when the cylinder is connected to the system.

3 D. The chlorine feeding device must be designed so
4 that during accidents or interruptions of the water supply,
5 leaking chlorine gas is conducted to the out-of-doors.

6 E. The chlorinator must be a vacuum-operated
7 solution-feed type, capable of delivering chlorine at its
8 maximum rate without releasing chlorine gas to the atmosphere.

9 F. Pressurized chlorine feedlines must not carry
10 chlorine gas beyond the chlorinating room.

11 G. Chlorinators must be designed to prevent the
12 backflow of water into the chlorine solution container.

13 Subp. 8. **Respiratory protection equipment.** Respiratory
14 protection equipment, meeting the requirements of the National
15 Institute for Occupational Safety and Health (NIOSH) or the
16 United States Bureau of Mines for chlorine use must be available
17 where chlorine gas is handled. The respiratory protection
18 equipment must be stored at a convenient location, in a closed
19 cabinet accessible without a key, but not inside any room where
20 chlorine is used or stored.

21 A. The respirators must use compressed air, have at
22 least a 30-minute capacity, and be compatible with or exactly
23 the same as the respirators used by the fire or emergency rescue
24 department responsible for the pool facility, or be a canister
25 type gas mask with full face mask and replacement canisters
26 provided.

27 B. A record of use and inspection must be kept to
28 ensure that the respirators will be serviceable when needed.

29 Subp. 9. **Chlorine leak detection.** A bottle of ammonium
30 hydroxide, 56 percent ammonia solution, or a comparable solution
31 recommended by the chlorine supplier, must be available for
32 chlorine leak detection.

33 A. Where ton chlorine containers are used, an
34 emergency leak repair kit recommended by the Chlorine Institute,
35 Inc., 2001 "L" Street NW, Washington, D.C. 20036, must be
36 provided.

1 B. Where an automatic leak detector is provided, it
2 must be equipped with both an audible alarm and a visual warning
3 sign.

4 Subp. 10. **Trained personnel.** Installation of chlorinator
5 equipment and its operation must be carried on by and under the
6 supervision of personnel trained by the manufacturer or supplier
7 for the installation and operation of such equipment.

8 4717.2650 USE OF HYPOCHLORITE SOLUTION.

9 When hypochlorite solution is fed through hypochlorinating
10 equipment:

11 A. the feed must be continuous under all conditions
12 of pressure in the circulating system and feed without
13 artificial constriction of the pump suction line, whether or not
14 the pump suction line is under vacuum or pressure head;

15 B. regulation must be provided to ensure constant
16 feed with varying supply or back pressure;

17 C. positive features must be designed to prevent
18 backflow from the recirculation system to the solution container
19 and reduce to a minimum the entry into the pool of free calcium
20 released from calcium hypochlorite; and

21 D. for aboveground installations, means must be
22 provided to prevent siphoning of hypochlorite solution when the
23 recirculation pump and hypochlorinator are both turned off.

24 4717.2750 USE OF EROSION FEEDERS.

25 An erosion feeder must:

26 A. have enough capacity to achieve the disinfectant
27 residual specified in part 4717.1750;

28 B. be adjustable in output rate; and

29 C. be capable of continuous operation.

30 4717.2850 SAND FILTERS.

31 Subpart 1. **Applicability.** The requirements in this part
32 apply to vacuum and pressure sand filters.

33 A. Pressure sand filters must filter at a maximum
34 rate of three gallons per minute per square foot of bed area at

1 the time of maximum head loss with enough area to meet the rate
2 of flow specified in part 4717.2560.

3 B. The filtration rate for high-rate sand filters and
4 vacuum sand filters must not exceed 20 gallons per minute per
5 square foot of bed area.

6 Subp. 2. **Filter material.** Filter material must be
7 screened, sharp filter sand sized between 0.4 and 0.55
8 millimeters with a uniformity coefficient not exceeding 1.75.
9 Anthracite sized between 0.6 and 0.8 millimeters with a
10 uniformity coefficient not exceeding 1.8, may be used instead of
11 sand.

12 A. The filter material must be at least 20 inches
13 deep for standard pressure sand filters and at least 12 inches
14 deep for high-rate sand filters.

15 B. The filter material must be supported by at least
16 ten inches of graded filter gravel. The gravel must distribute
17 water uniformly during filtration and backwashing.

18 C. A reduction in depth or an elimination of gravel
19 is permitted when equivalent performance and service is
20 demonstrated through compliance with NSF International Standard
21 50.

22 Subp. 3. **Underdrain system.** The underdrain system must be
23 corrosion-resistant, enduring, and provide even collection and
24 distribution of the flow during filtration and backwashing.
25 Orifices and other openings must maintain constant area.

26 Subp. 4. **Freeboard.** Freeboard provided between the upper
27 surface of the filter media and the lowest portion of the pipes
28 or drains which serve as overflows during backwashing must be
29 designed to prevent loss of filter material.

30 Subp. 5. **Filter system.** The filter system must have
31 influent and effluent pressure gauges or a filter-mounted
32 pressure gauge, backwash sight glass on the waste discharge
33 line, and an air-relief valve at or near the high point of the
34 filter. The filter system must have valves and piping that
35 permit:

36 A. filtering to the pool;

1 B. individual backwashing of filters to waste at a
2 rate of not less than 15 gallons per minute per square foot of
3 filter area;

4 C. isolation of individual filters for repair while
5 other units are in service;

6 D. complete drainage of all parts of the system; and

7 E. maintenance, operation, and inspection.

8 Subp. 6. **Filter access.** Each pressure filter tank must
9 have an access opening to permit maintenance.

10 Subp. 7. **Coagulant feed.** Devices with dosage control
11 features must be provided if coagulants are added ahead of
12 filters.

13 Subp. 8. **Tank.** On pressure filters, the tank and integral
14 parts must have a pressure safety factor of four based on the
15 maximum shutoff head of the pump. For design purposes, the
16 shutoff head must in no case be considered less than 50 pounds
17 per square inch.

18 4717.3050 DIATOMACEOUS EARTH FILTERS.

19 Subpart 1. **Area.** The filter area for a diatomaceous earth
20 filter must meet the design pump capacity as required by this
21 part. Where fabric is used, the filter area is determined by
22 the surfaces created by septum supports with no allowance for
23 areas of impaired filtration such as broad supports, folds, or
24 portions which may bridge.

25 Subp. 2. **Rate of filtration.** The rate of filtration must
26 not be greater than two gallons per minute per square foot of
27 filter area without continuous body feed and no greater than 2.5
28 gallons per minute per square foot with continuous body feed.

29 Subp. 3. **Use of body feeder.** If a body feeder is used, it
30 must be accurate within ten percent and capable of continually
31 feeding within a calibrated range adjustable from two to six
32 parts per million at the capacity of the recirculation pump.
33 The feeding of diatomaceous earth through skimmers is prohibited.

34 Subp. 4. **Filter and components.** The filter and all
35 component parts must withstand normal continuous use without

1 significant deformation, deterioration, corrosion, or wear which
2 adversely affects filter operation. The filter design,
3 construction, or other provision must preclude introduction of
4 filter aid into the pool during precoating operations.

5 A. Where dissimilar metals which may set up galvanic
6 electric currents are used in the filters, provision must be
7 made to resist electrolytic corrosion.

8 B. The filter and surrounding space must permit
9 removal, replacement of any part, and maintenance.

10 C. The filter must be cleaned by backwashing, air
11 pump assist backwashing, mechanical or manual spray wash, or
12 agitation.

13 Subp. 5. **Filter tank.** The tank containing the filter
14 elements must be constructed of steel, plastic, or another
15 material resistant to corrosion, with or without coating.

16 A. Pressure filters must be designed for a minimum
17 working pressure of 50 pounds per square inch with a four-to-one
18 safety factor.

19 B. Vacuum filters must withstand the pressure
20 developed by the weight of the water contained therein with a
21 safety factor of 1.5.

22 C. Closed vacuum filters must withstand crushing
23 pressure developed under a vacuum of 25 inches of mercury with a
24 safety factor of 1.5.

25 D. The septa or elements which support the filter-aid
26 must be corrosion-resistant. The septa must resist rupture
27 under conditions of maximum differential pressure between
28 influent and effluent developed by the circulating pump, and
29 resist stress developed by cleaning.

30 Subp. 6. **Filter plant.** The filter plant must have
31 pressure, vacuum, or compound gauges to indicate the condition
32 of the filter. In vacuum filters where the circulating pump is
33 two horsepower or higher, an adjustable high vacuum automatic
34 shutoff must be provided to prevent damage to the pump by
35 cavitation.

36 Subp. 7. **Complete draining of filter.** The filter must

1 provide for complete drainage.

2 4717.3150 CARTRIDGE FILTERS.

3 Surface-type cartridge filters must be sized for a maximum
4 filtration rate of 0.375 gallons per minute per square foot. An
5 effluent pressure gauge and an air relief valve must be provided.
6 A spare set of cartridges must be provided and available at all
7 times.

8 4717.3250 STEPS, LADDERS, HANDHOLDS, AND HANDRAILS.

9 Subpart 1. Step or ladder location in-pool. Steps or
10 ladders must be provided at the shallow end of the pool if the
11 vertical distance from the bottom of the pool to the deck or
12 walk is over two feet. Recessed steps or ladders must be
13 provided at the deep end of the pool. If the pool is over 30
14 feet wide, steps or ladders must be installed on each side.

15 Subp. 2. Steps. Steps leading into the pool must be of
16 nonslip material, have a minimum tread of 12 inches, and have a
17 maximum rise or height of ten inches.

18 A. ~~The leading edge of step treads must be identified~~
19 ~~by use of a contrasting color~~ Steps must have accent stripes as
20 specified in part 4717.2450, subpart 4.

21 B. There must be no abrupt drop-off or submerged
22 projections into the pool, unless guarded by handrails.

23 C. At least one sturdy handrail, reachable from the
24 pool bottom, must be provided for all steps.

25 D. At least two rails must be provided when the steps
26 are over six feet wide or an additional railing is needed to
27 define the location of the steps.

28 E. If steps are inserted in the walls or if stepholes
29 are provided, they must be easily cleaned and drain into the
30 pool to prevent the accumulation of dirt. Stepholes must have a
31 minimum tread of five inches and a minimum width of 14 inches.

32 Subp. 3. Ladders. Pool ladders must be
33 corrosion-resistant and equipped with nonslip treads.

34 A. All ladders must provide a handhold and be rigidly
35 installed.

1 B. There must be a clearance of not more than five
2 inches nor less than three inches between any ladder and the
3 pool wall.

4 Subp. 4. **Handrails.** When stepholes or ladders are
5 provided in the pool, handrails must be provided that extend
6 over the coping or edge of the deck.

7 Subp. 5. **Handholds; coping.** All pools, except wading
8 pools and spa pools, must have a continuous handhold along the
9 pool edge.

10 A. Handholds must be no more than nine inches above
11 the normal water line.

12 B. Where bull-nosed coping is used, it must not be
13 over 2-1/2 inches thick for the outer two inches.

14 C. If brick coping is used, it must be completely
15 rounded on the pool side, overhang the pool wall 1-1/2 inches,
16 and slope away from the pool at least one-half inch over the
17 length of the brick.

18 Subp. 6. **Diving boards.** Supports, platforms, and steps
19 for diving boards must safely carry the maximum anticipated load.

20 A. Steps must be corrosion-resistant, cleanable, and
21 constructed of nonslip material.

22 B. Handrails must be provided for all steps and
23 ladders leading to any diving board more than one meter above
24 the water.

25 C. Platforms and diving boards over one meter above
26 the water must be protected with guardrails.

27 4717.3350 DECKS AND WALKWAYS.

28 A continuous deck, free from fixed obstruction, at least
29 five feet wide, must extend completely around the pool. The
30 deck must be sloped away from the pool to drain at a grade of
31 one-fourth inch per lineal foot. The deck must have a nonslip,
32 nonabsorbent surface.

33 A. Deck drains connected to the recirculation system
34 or gutters are prohibited for new installations.

35 B. Carpeting must not be used within ten feet of the

1 pool unless it is outside the required deck area and separated
2 from the deck by an effective access barrier. In deck areas
3 where carpeting is contiguous to the deck area, water must be
4 conveyed away from the carpeted area.

5 C. Wood decking is prohibited.

6 D. A minimum ceiling clearance of seven feet is
7 required above pool edges and pool decks.

8 (1) Where diving boards are provided, ceiling
9 clearances must comply with part 4717.3750.

10 (2) Greater heights must be provided as necessary
11 to accommodate the use of slides or to comply with state
12 building code requirements.

13 4717.3450 LIGHTING, VENTILATION, AND ELECTRICAL REQUIREMENTS.

14 Subpart 1. **Lighting.** Lighting must meet the criteria in
15 this part.

16 A. When underwater lighting is used, not less than
17 0.5 watts shall be employed per square foot of pool water
18 surface area.

19 B. Light must be located to provide illumination so
20 all portions of the pool, including the bottom, may be seen
21 without glare.

22 C. Area lighting must provide at least ten
23 footcandles of illumination at all locations on the pool surface
24 and on any deck within five feet of the pool whenever the pool
25 is in use.

26 D. A pool used for education, training, or
27 competition must have at least 30 footcandles of illumination on
28 the pool surface and on any deck within five feet of the pool.

29 E. Security lighting, when provided, must illuminate
30 the entire pool area to make it readily visible.

31 Subp. 2. **Ventilation.** All indoor pools, dressing rooms,
32 shower rooms, and toilet space must be ventilated by mechanical
33 means.

34 A. Pool equipment rooms must have natural or
35 mechanical ventilation.

1 B. For new installations, ventilation must comply
2 with the Minnesota Building Code.

3 C. Gas chlorine rooms must have mechanical ventilation
4 as specified in part 4717.2630, subpart 2.

5 Subp. 3. Electrical. All electrical installations must
6 conform with the standards of the Board of Electricity effective
7 at the time of installation.

8 4717.3475 STARTING BLOCKS AND PLATFORMS; SLIDES; OTHER OBJECTS.

9 Subpart 1. Starting block or platform use. Starting
10 blocks or starting platforms located at any pool area with a
11 water depth of less than five feet must be removed when the pool
12 is used for other than supervised competitive swimming or
13 training for competitive swimming. For installations after
14 January 1, 1995, all starting blocks or starting platforms must
15 be positioned at a water depth of five feet or greater.

16 Subp. 2. Play equipment. All play equipment at a pool
17 must be specifically designed for pool use and installed in
18 accordance with the safe use parameters specified by the
19 manufacturer and the requirements of the commissioner. All
20 slides used at a pool must meet the requirements specified in
21 part 4717.3870.

22 4717.3550 DRESSING ROOMS.

23 When dressing rooms are provided for both sexes, they must
24 be separated by a tight partition and be designated for men or
25 women.

26 A. The entrances must be screened to break line of
27 sight.

28 B. Floors and wet paths between showers and the pool
29 must have a smooth, nonslip surface, impervious to moisture, and
30 sloped to a drain.

31 C. The junctions between walls and floors must be
32 coved or provided with a sealed, easily cleaned joint.

33 D. Walls and partitions must be of smooth, impervious
34 material, free from cracks or open joints.

35 E. Lockers must be set either on solid masonry bases

1 four inches high or on legs with the bottom of the locker at
2 least ten inches above the floor. Lockers must be vented.

3 4717.3650 TOILETS, LAVATORIES, SHOWERS, AND DRESSING ROOMS.

4 Subpart 1. General. Toilets, showers, and dressing rooms
5 must be conveniently available to pool patrons.

6 A. Toilets, showers, and dressing rooms may be in a
7 nearby toiletroom, locker room, or, if conveniently available,
8 within the living units of an apartment building, hotel, or
9 similar occupancy.

10 B. Toilet, shower, lavatory, and locker and other
11 ancillary facilities must be maintained in a sanitary condition
12 to preclude the possibility of spreading pathogens to the pool.

13 C. When toilet facilities are accessible to pool
14 patrons in the pool area, each toilet facility must include
15 showers which permit nude showering within each toilet facility.

16 D. At least one shower must be provided which is
17 conveniently located to permit a shower before entering any pool
18 when sauna or exercise facilities are provided.

19 Subp. 2. Ratios. Toilet, handwashing, and shower
20 facilities must be provided according to the following schedule.

	First 300 males	First 300 females	Additional males over 300	Additional females over 300
25 Water closets	1/100	1/50	1/200	1/100
27 Urinals	1/100	--	1/200	--
28 Lavatories	1/100	1/100	1/200	1/200
29 Showers	1/50	1/50	1/50	1/50

31 Subp. 3. Additional fixtures. Additional sanitation
32 fixtures must be provided for pool facilities with extensive
33 deck areas or facilities that provide other functions in
34 accordance with the sanitation fixture requirements in the state
35 building code.

36 Subp. 4. Shower temperature. Showers must be supplied
37 with water at a temperature of at least 90 degrees Fahrenheit at
38 a rate of at least 2.0 gallons per minute. Thermostatic,
39 tempering, or mixing valves must be installed if necessary to
40 prevent water temperatures in excess of 130 degrees.

1 Subp. 5. **Layout.** Pool users leaving the dressing room
2 must pass the showers last in route to the pool.

3 Subp. 6. **Floor finish.** The floor finish between the
4 toilet and shower areas and the pool must be nonslip and
5 nonabsorbent.

6 Subp. 7. **Wading pool exception.** On-site showers are not
7 required for freestanding wading pools if a free chlorine
8 residual of at least two parts per million is maintained in the
9 pool and the owner of the pool requests that on-site showers not
10 be required.

11 Subp. 8. **Lighting.** Lighting for toilet, shower, and
12 locker facilities must provide at least ten footcandles
13 illumination measured at floor level.

14 4717.3675 DRINKING FOUNTAINS.

15 Drinking fountains must be provided in the pool area for
16 pools over 1,600 square feet.

17 4717.3750 STANDARDS FOR POOLS WITH DIVING.

18 The dimensions of the pool and appurtenances in a diving
19 area must meet the standards in this part.

20 A. There must be a completely unobstructed clear
21 distance of 16 feet above the diving board measured from the
22 center of the front end of the board. This area must extend at
23 least eight feet behind, eight feet to each side, and 16 feet
24 ahead of the measuring point.

25 B. Pools used for competitive diving must provide
26 pool depths compatible with the level of competition anticipated.

27 ~~C. The dimensions of the diving area in all pools~~
28 ~~where diving is permitted must meet~~ Diving is not permitted,
29 except in areas which conform to the minimum dimensions
30 specified in this part.

31 D. The dimensions of the diving area in all pools
32 must conform to the minimum dimensions specified in this part.

33 ~~The dimensions of the diving area on all pools must conform~~
34 ~~to the minimum dimensions in this item.~~

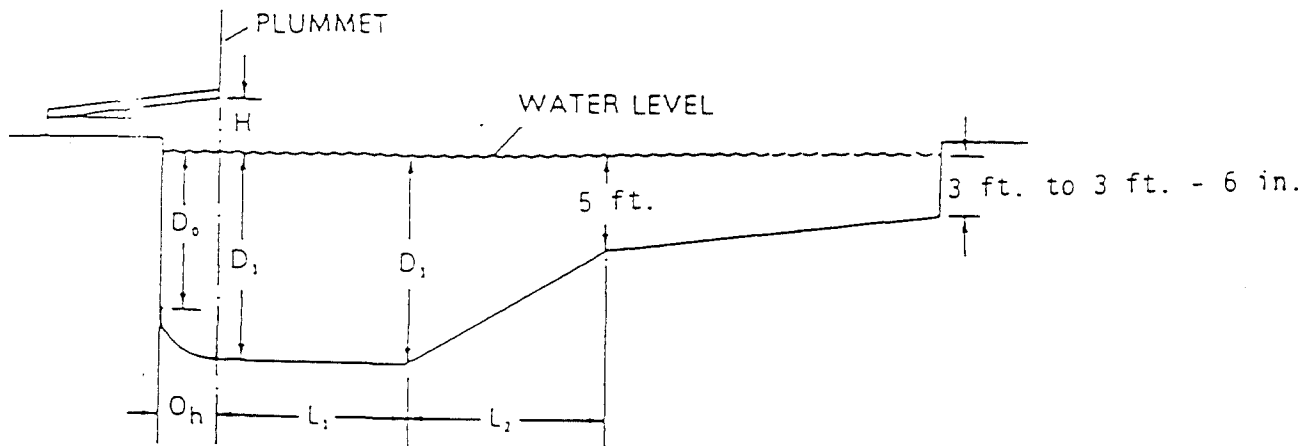
35

Lengths

Height of Diving Board	Water Depths		Minimum Overhang	Length of Diving Well		Run-out
	D ₀	D ₁		L ₁	L ₂	
H	D ₀	D ₁	O _h	L ₁	L ₂	
Deck Level or no board	6 ft.	8.5 ft.	3 ft.	12 ft.		10.5 ft.
1 m	6 ft.	10 ft.	5 ft.	12 ft.		15 ft.
3 m	6 ft.	12 ft.	5 ft.	13 ft.		21 ft.

Clearances

Height of Diving Board	Water Depths		Adjacent Board's Center-to-Center	Center of Board to Sidewall
	D ₀	D ₁		
H	D ₀	D ₁		
Deck Level or no board	6 ft.	8.5 ft.	10 ft.	10 ft.
1 m	6 ft.	10 ft.	10 ft.	10 ft.
3 m	6 ft.	12 ft.	10 ft.	12 ft.



~~The above are minimum dimensions, and pools to be used for competitive diving must provide pool depths compatible with the level of competition anticipated.~~

4717.3850 SPA POOLS.

Subpart 1. **Applicability.** Spa pools must comply with parts 4717.0150 to 4717.3975, except as modified in this part.

Subp. 2. **Recirculation rate.** The recirculation system must recirculate a water volume equal to the pool volume in 30 minutes or less, except that a minimum rate of 35 gallons per minute is required.

Subp. 3. **Inlets.** The recirculation system must have at least two remote inlets to the pool.

1 Subp. 4. **Main drain.** The main drain must consist of:

2 A. a grate-covered bottom opening at least 100 square
3 inches in size; or

4 B. a bottom opening with an antivortex cover.

5 Subp. 5. **Agitation system.** The agitation system must have
6 a separate pump. If sidewall suction fittings are used, at
7 least two inlets, remotely located, must be provided.

8 Subp. 6. **Timer.** The agitation system must be controlled
9 by a timer with the control switch accessible to pool users but
10 at least five feet from the pool. The maximum time setting must
11 be 15 minutes.

12 Subp. 7. **Access.** Access to a spa pool must be provided
13 according to this subpart.

14 A. Access to the pool must be provided by an
15 unobstructed deck, at the pool elevation, which extends at least
16 five feet from the pool around the entire perimeter.

17 B. Where a deck cannot be provided as specified in
18 item A, a five-foot wide deck at the pool elevation must extend
19 along at least 25 percent of the pool perimeter. The remaining
20 perimeter must be one foot or less to a wall, partition, or
21 other effective barrier to restrict access. The deck must
22 provide complete and unobstructed access to the steps in the
23 pool.

24 C. Where access is provided by sitting on the edge of
25 a raised pool and swinging the legs into the pool:

26 (1) the deck requirement in item A or B must be
27 met;

28 (2) the pool must be no less than 18 inches nor
29 more than 20 inches above the deck;

30 (3) steps with equal risers and 12-inch minimum
31 treads must be provided outside the pool which line up with the
32 steps inside the pool; and

33 (4) the pool edge must not exceed 12 inches in
34 width.

35 Subp. 8. **Steps.** The requirements for steps in this
36 subpart apply to spa pools.

1 A. Steps for access to an elevated spa pool must have
2 a handrail and a finished surface that meets the requirements
3 for decks in part 4717.3350.

4 B. Steps within manufactured spa pools may vary from
5 the dimensions in part 4717.3250, subpart 2, if the commissioner
6 determines that the design is safe.

7 Subp. 9. Disinfectant. The disinfection residual must be
8 maintained in accordance with part 4717.1750, subpart 4.

9 Subp. 10. Signs. In addition to the signs required in
10 parts 4717.1050, 4717.1250, 4717.1350, and 4717.1650 signs with
11 the warnings in items A to C must be posted and plainly visible
12 in the spa pool area.

13 A. Pregnant women, small children, or persons with
14 heart disease, diabetes, high blood pressure, or low blood
15 pressure should not enter the spa except under advice of a
16 physician.

17 B. Avoid use while under the influence of alcohol or
18 drugs.

19 C. Exposure may result in nausea, dizziness, or
20 fainting. Observe a reasonable time limit.

21 4717.3870 POOL SLIDES.

22 Subpart 1. General. All slides used at a pool must be
23 specifically designed and intended for use with a pool, and for
24 use as a slide.

25 Subp. 2. Standard pool slide. Standard pool slides must
26 meet the Consumer Product Safety Commission Standard "Safety
27 Standard for Swimming Pool Slides," Code of Federal Regulations,
28 title 16, part 1207, as amended through December 18, 1978.

29 Subp. 3. Slides in wading pools. Slides for use by
30 children in wading pools must be designated by the manufacturer
31 for use in 24 inches or less of water, and installed accordingly.

32 Subp. 4. Drop Slides. A slide other than a standard pool
33 slide that discharges to a pool with a drop of more than two
34 inches to the water surface must meet the requirements in this
35 subpart.

1 A. At least one attendant must be continuously
2 present observing the slide and controlling its use.

3 B. Slide entry areas must be designed so the rider is
4 able to properly enter and position before sliding down the
5 chute. This area must be a platform or flat portion of the
6 chute with assist bars.

7 C. Handrails must be present on both sides of the
8 ladder or steps. Platforms and landings must have 42-inch high
9 guardrails, with at least one intermediate-height rail.

10 D. A landing area must be provided that extends five
11 feet on either side of the center line of the slide and from the
12 back wall to 20 feet in front of the slide terminus.

13 (1) The landing area must not infringe on the
14 required landing area for any other slide or diving equipment.

15 (2) The landing area must be separated from the
16 rest of the pool.

17 (3) A slide mounted in a separate diving area may
18 be allowed to use the separate diving area if access to the
19 diving well is restricted to patrons using the slide and diving
20 equipment.

21 E. Each slide must have a separate dedicated ladder
22 or stair to exit the pool.

23 F. The terminus of the slide chute must extend beyond
24 the pool wall and be so oriented that the landing area in front
25 of the slide does not interfere with the landing area of another
26 slide or other pool equipment.

27 G. The maximum angle of the slide runway at the exit
28 must be between zero degrees and 11 degrees, measured downward
29 from horizontal.

30 H. The area from the slide terminus outward to six
31 feet in front of the slide terminus must have a depth as
32 specified in this item.

33 (1) The slide must provide for the entrance of
34 the rider into the water in this six-foot area.

35 (2) If the depth of the terminus area is five
36 feet or less, the bottom of this area must have a maximum slope

1 of one inch in 12 inches and the slide must be located at least
2 five feet from any change to steeper slope of the pool bottom.

3 (3) If the slide exit is 12 inches or less above
4 the water, the water depth from the slide terminus to six feet
5 in front of the terminus must be in the four to five feet range.

6 (4) If the slide exit is more than 12 inches
7 above the water, the water depth from the slide terminus to six
8 feet in front of the terminus must be at least eight feet.

9 I. The maximum drop height at the terminus of the
10 slide must not exceed 42 inches.

11 J. If water is pumped from a pool to the slide, the
12 pump intake must be enclosed or constructed to prevent injury or
13 entrapment of pool users. Intake velocity must not exceed 1-1/2
14 feet per second.

15 K. Slides must be located and constructed to allow
16 easy supervision. When a slide is not supervised, or not open
17 for use, it must be secured to prevent access.

18 L. The slide must have posted a set of rules that
19 include the requirements in subitems (1) to (6).

20 (1) One rider at a time. Wait until the landing
21 area is clear before entering the slide.

22 (2) Slide in a sitting position or on the back
23 only.

24 (3) Do not attempt to stop on the slide.

25 (4) Leave plunge area immediately.

26 (5) WARNING: Water depth is feet.

27 (6) Nonswimmers not permitted. (If landing area
28 water depth is over five feet.)

29 4717.3875 FLUME WATER SLIDES.

30 Subpart 1. **Applicability.** A flume water slide facility
31 must comply with parts 4717.0150 to 4717.3975, except as
32 modified in this part.

33 Subp. 2. **Attendant required.** When the flume is in use, at
34 least one attendant must be continuously present, observing the
35 flume and controlling its use.

1 Subp. 3. **Discharge pool.** A flume must discharge to a
2 dedicated plunge pool or dedicated area of a pool with a
3 separate ladder or stairs.

4 A. The pool's operating water depth at the end of the
5 flume must be no less than three feet and no more than three
6 feet six inches.

7 B. The depth specified in item A must be maintained
8 in front of the flume's discharge point for a distance of at
9 least ten feet.

10 C. Steps with handrails or a ladder must be provided
11 at the exit from the pool.

12 Subp. 4. **Flume exit design.** The exit end of the flume
13 must be perpendicular to the plunge pool wall for a distance of
14 at least ten feet.

15 A. The flume must terminate no more than six inches
16 below the pool operating water surface level and no more than
17 two inches above the pool operating water surface level.

18 B. The side of the exit end of the flume must be at
19 least four feet from the side of the pool wall.

20 C. The distance between the sides of any adjacent
21 flume exit must be at least six feet.

22 D. The distance between a flume exit end and the
23 opposite side of the pool must be at least 20 feet.

24 Subp. 5. **Water reservoirs.** Water pumped to the top of a
25 flume must be pumped from a reservoir connected to the pool.

26 A. The reservoir must be inaccessible to patrons.

27 B. The reservoir must be secured to prevent
28 unauthorized access.

29 C. Intakes must enable cleaning and be designed to
30 prevent entrapment of patrons.

31 D. Where any entrance to a pump reservoir presents an
32 underwater obstruction, patron access to that area must be
33 prevented.

34 E. Water inlet velocity to the reservoir must not
35 exceed 1-1/2 feet per second.

36 Subp. 6. **Pump valves.** Each flume pump discharge pipe must

1 have a check valve. The volume of water in the pool during use
2 and shutdown of any flume pump must permit proper operation of
3 the recirculation system.

4 Subp. 7. **Dedicated plunge pools.** The recirculation system
5 for a dedicated plunge pool must recirculate the water in
6 accordance with part 4717.2560, subpart 4.

7 Subp. 8. **Walkway, stairs, and platform surfaces.** Walkways
8 from the pool deck to the top of the flume or tower, the tower
9 stairs, and platforms must have finished surfaces which meet the
10 requirements for decks in part 4717.3350.

11 Subp. 9. **Fencing.** Fencing complying with part 4717.1550
12 or other enclosure must encompass the pool deck, walkways, and
13 flume access.

14 Subp. 10. **Flume plan content; certification.** Flume design
15 plans must include:

- 16 A. flume construction and layout details;
17 B. flume support structure details;
18 C. tower structure, stair, and platform details; and
19 D. all related construction details.

20 Flume support and tower structure plans must be certified
21 by a registered engineer or approved by a local building
22 official for structural integrity.

23 Subp. 11. **Signs.** A legible sign with the warnings in this
24 subpart must be located at the entrance to each flume slide.

25 A. Do not use this slide while under the influence of
26 alcohol or drugs.

27 B. Follow the instructions of the flume attendant.

28 C. No running, standing, kneeling, rotating,
29 tumbling, or stopping in the flume.

30 D. Only one person at a time.

31 E. Keep your hands inside the flume.

32 F. No diving from the flume.

33 G. Leave the flume pool promptly after entering.

34 4717.3950 WAVE POOLS.

35 Subpart 1. **Applicability.** Wave pools must comply with

1 parts 4717.0150 to 4717.3975, except as modified in this part.

2 Subp. 2. **Lifeguard required.** When the wave pool is in use:

3 A. the minimum number of lifeguards who must be
4 continuously present must be one for every 2,000 square feet of
5 pool surface water where the pool depth is greater than two
6 feet; and

7 B. where the design, configuration, or operation
8 requires additional lifeguards to provide complete observation
9 of the entire pool they must be provided in addition to those
10 required in item A.

11 Subp. 3. **Water depth.** Water depth may reduce to zero at
12 the shallow end of the pool to allow for dissipation of the
13 waves.

14 Subp. 4. **Access barriers.** In addition to the fencing
15 required in part 4717.1550, a safety barrier of stanchions and
16 ropes or a similar barrier at least 42 inches high must be
17 located to prevent pool patrons from entering the pool at any
18 location other than at the zero water depth end. The barrier
19 must have at least one intermediate height rope.

20 Subp. 5. **Emergency shut off.** An emergency shut off for
21 wave generation must be provided at every lifeguard chair or
22 station.

23 Subp. 6. **Wave strength.** The wave generating equipment
24 must not be capable of producing waves that could cause pool
25 users to have contact with the pool bottom in a manner which may
26 cause injury.

27 Subp. 7. **Overflow gutters.** Overflow gutters may be
28 omitted along the side of a pool with the wave generating
29 equipment.

30 A. If overflow gutters are not provided on the pool
31 side where the wave generating equipment is located, effective
32 skimming devices are required and must be designed and
33 maintained to function continuously during all periods when
34 waves are not generated.

35 B. Overflow gutters are required on the sides of the
36 pool where the wave generating equipment is not installed.

1 C. A gutter is required along the zero depth end of
2 the pool.

3 Subp. 8. Decks. Deck areas accessible to pool users may
4 be omitted along the side of the pool with the wave generating
5 equipment.

6 Subp. 9. Recirculation system. The recirculation system
7 must operate at a rate equivalent to recirculating the total
8 volume of water in the pool in four hours or less. A system of
9 bottom inlets must be provided in the shallow end.

10 4717.3970 POOL CLOSURE.

11 When any of the conditions in items A to E are found, a
12 public pool must be immediately closed to use when so ordered by
13 the commissioner. The owner of the pool or the owner's agent
14 must place a sign at the entrance to the pool indicating that
15 the pool is closed. The pool must remain closed until the
16 condition is corrected and approval to reopen is granted by the
17 commissioner. A pool must be closed when:

18 A. the units of lifesaving equipment specified in
19 part 4717.1450 are not provided;

20 B. the water clarity standard specified in part
21 4717.1750, subpart 7, is not met;

22 C. the disinfection residual specified in part
23 4717.1750 subpart 3, is not met;

24 D. the pool has been constructed or physically
25 altered without approval of plans as required by part 4717.0450;
26 or

27 E. there is any condition that endangers the health
28 or safety of the public.

29 4717.3975 VARIANCE.

30 The commissioner shall grant a variance to parts 4717.0100
31 to 4717.3950 only according to the procedures and criteria
32 specified in parts 4717.7000 to 4717.7050.

33 4717.7000 VARIANCE REQUEST.

34 Subpart 1. Request. A party may ask the commissioner of

1 health to grant a variance from the following rules:

2 [For text of items A to K, see M.R.]

3 L. public swimming pools, parts 4717.0150 to
4 4717.3975;

5 [For text of items M to P, see M.R.]

6 [For text of subps 2 and 3, see M.R.]

7 REPEALER. Minnesota Rules, parts 4717.0100; 4717.0200;
8 4717.0300; 4717.0350; 4717.0400; 4717.0500; 4717.0600;
9 4717.0700; 4717.0800; 4717.0900; 4717.1000; 4717.1100;
10 4717.1200; 4717.1300; 4717.1400; 4717.1500; 4717.1600;
11 4717.1700; 4717.1800; 4717.1900; 4717.2000; 4717.2100;
12 4717.2200; 4717.2300; 4717.2400; 4717.2500; 4717.2600;
13 4717.2700; 4717.2800; 4717.2900; 4717.3000; 4717.3100;
14 4717.3200; 4717.3300; 4717.3400; 4717.3500; 4717.3600;
15 4717.3700; 4717.3800; and 4717.3900, are repealed.

16

17 EFFECTIVE DATE. January 1, 1995.