State of Wisconsin \ Department of Commerce

RULES IN FINAL DRAFT FORM

Rule No.: **Chapter Comm 90**

Relating to: **Design and Construction of Public Swimming Pools and Water Attractions**

Clearinghouse Rule No.: **08-056**

COM-10535 (N.03/97)

The Department of Commerce proposes an order to repeal and recreate ch Comm 90 relating to the design and construction of public swimming pools and water attractions, and affecting small business.

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b. Provides more consistency between Wisconsin's code and the national standards (ANSI/IAF–1, 2 and 9).

c. Provides clearer code language to eliminate the need for web interpretations on various issues (for example, vanishing edge pools).

d. Delineates requirements for entries and exits serving public swimming pools and water attractions.

e. Creates requirements and allowances for swimouts and underwater seats and benches.

f. Expands the requirement for automatic chemical controllers to public swimming pools. Current code requires controllers for water attractions.

g. Defines the enclosing building to be an acceptable barrier for indoor public swimming pools or water attractions.

6. Summary of, and Comparison with, Existing or Proposed Federal Regulations.

In December 2007, the United States Congress and President George Bush signed the Virginia Graeme Baker Pool and Spa Safety Act into law. This new federal law requires safety improvements in public pools and spas including the inspection and replacement of all drain covers with anti-entrapment devices or systems. Such devices or systems are expected to reduce injury due to the suction effects around drain outlets. The proposed revisions to Chapter Comm 90 are intended to comply with the public pool and water attractions requirements of the Pool and Spa Safety Act Section 1404.

An Internet search was conducted to review and compare any federal rules or proposed federal rules for “water attractions,” “water parks,” “water recreation facilities” and “public swimming pools.” No federal rule or proposed rule was found that addresses public swimming pools, water parks, in-pool water attractions or play devices.

An Internet search to review and compare any federal rules or proposed federal rules for “pool slides” resulted in the finding of 16CFR, Part 1207, Consumer Product Safety Commission Standards for swimming pool slides (revised January 2008). It was found that 75 percent of pool slides are installed in residential pools and not within the scope of this proposal. No federal rule or proposed rule was found that addresses the manufacture, construction or installation of waterslides as they exist in today’s water parks.

An Internet search to review and compare any federal rules or proposed federal rules for accessibility guidelines for persons with disabilities resulted in the finding of 36CFR, Part 1191, Architectural and Transportation Barriers Compliance Board’s final rule on accessibility guidelines for recreational facilities for persons with disabilities (*Federal Register*, Vol. 67, No. 170, February 3, 2002). The guidelines ensure that newly constructed and altered recreation facilities including public swimming pools and spas meet the requirements of the Americans with Disabilities Act (ADA). In addition, the Architectural and Transportation Barriers Compliance Board provided significant input to the ANSI/IAF–1 Public Pool Standard Committee and worked to ensure consistency between the ANSI/IAF–1 standard and the ADA accessibility guidelines. The proposed changes to Chapter

Comm 90 references Vol. 67, No. 170, of the *Federal Register*, plus they are based on the ANSI/IAF–1 standard.

7. Comparison with Rules in Adjacent States.

A comparison of the four adjacent states found that all had regulations for public swimming pools and require pool plan approval before construction. This proposal also relates to water attractions (waterslides, splash pads, activity pools, etc.) and Wisconsin's neighboring states have various mechanisms for addressing new technology and imaginative designs.

The following information was ascertained during an Internet-based search of adjacent states:

a. The Illinois Department of Public Health provides for the inspection and licensing of all public swimming pools, spas, waterslides, wading pools, and bathing beaches. Effective February 2003, the Department reviews all plans and specifications before construction can begin.

b. The Iowa Department of Public Health, Division of Environmental Health oversees the design, construction and reconstruction of public swimming pools. It issues permits and certifies that the plans for swimming pools, spas, wading pools, waterslides, wave pools, and spray pads comply with rules and statutes that were revised May 2005.

c. The Minnesota Department of Health provides plan review and construction inspection for all public pools within the state. The requirements include the design, construction, installation and alteration of a public pool including individual approval where the designer must prove a design's compliance with the intent of the code. The Department also is responsible for issuing permits.

d. The Water Bureau, Drinking Water and Environmental Health Section of the Michigan Department of Environmental Quality is responsible for issuing construction permits for public swimming pools (including spas, leisure pools, activity pools, water slide pools, and lazy rivers). The Department also requires a permit for the modification of any existing public swimming pool.

8. Summary of Factual Data and Analytical Methodologies.

The primary methodology for updating the Wisconsin Administrative Code, chapter Comm 90 has been a review and assessment of the latest edition of the national technical standards for the design and construction of public swimming pools and water attractions. Staff prepared a comprehensive comparison of what is currently adopted under Comm 90 to the latest edition of the ANSI/IAF–1 Public Swimming Pools, ANSI/IAF–2 Spas and ANSI/IAF–9 Aquatic Recreation Facilities standards.

The Department's review and assessment process involved the participation of the Pool Advisory Code Council. The members of that Council represent many stakeholders involved in the pool and water attractions industry, including designers, manufacturers, inspectors, contractors and operators of public swimming pools. (A listing of the Pool Advisory Code Council is provided at the end of this analysis.)

The Department believes that the national model codes reflect current societal values with respect to protecting public health, safety and welfare in the design, construction, use, operation and maintenance of public swimming pools, water attractions and associated equipment. The ANSI/IAF uses a process open to all parties in the development of its standards. More information on the development of these standards may be obtained from the ANSI web site at: www.ansi.org.

9. Analysis and Supporting Documents Used to Determine Effect on Small Business or in Preparation of Economic Impact Report.

The Department used the Pool Advisory Code Council to gather and analyze information on potential impacts in complying with both the technical and administrative requirements of the codes. Many small businesses belong to the industry associations that sit on the advisory council. A responsibility of council members is to bring forth concerns that their respective organizations may have with the requirements including economic impact.

In addition to posting rule development and council activities on the Department's web site, the Department offers an Email subscription service that is available to small businesses. This service provides Email notification of council meetings, meeting, agendas and council meeting progress reports so small businesses can follow proposed code changes.

It is anticipated this requirement will not have a significant impact on small businesses owning, designing, building, altering, or remodeling public swimming pools, water attractions and associated equipment.

10. Effect on Small Business

The Department believes the rules will not increase the effect on small businesses from what the current rules impose on them. An economic impact report has not been required pursuant to s. 227.137, Stats.

11. Agency Contact

Lynita Docken, Program Manager, lynita.docken@wisconsin.gov, (608) 785-9349.

12. Public Hearing Comments.

A public hearing has been scheduled for July 8, 2008. The hearing record on this proposed rulemaking will remain open until July 18, 2008, to permit submittal of written comments from persons who are unable to attend the hearing or who wish to supplement testimony offered at the hearing. Written comments should be submitted to Lynita Docken, at the Department of Commerce, P.O. Box 2689, Madison, WI 53701-2689, or Email at lynita.docken@wisconsin.gov.

Council Members and Representation

The proposed rules have been developed with the assistance of the Pool Advisory Code Council. The members of that citizen advisory council are as follows:

Dave Baker	Pool Operators
Tom Carrico	Wisconsin Park and Recreation Association
Charles Neuman	World Water Park Association
Melanie Novinska	Wisconsin Innkeepers Association
Sean O'Connor	Pool Designer
David Pluymers	Wisconsin Department of Health and Family Services
William Rollins	Pool Designer
Jim Schwingle	Pool Designer
Peter Simon	Pool Engineer
Doug Voegeli	Wisconsin Environmental Health Association
Jack Waterman	Pool Owner

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SECTION 1. Comm 90 is repealed and recreated to read:

Chapter Comm 90

DESIGN AND CONSTRUCTION OF PUBLIC SWIMMING POOLS AND WATER ATTRACTIONS

Subchapter I – Administration

Comm 90.01 Authority and purpose. This chapter is promulgated under the authority of ss. 101.02 and 145.26, Stats., to regulate the design and construction, alteration or reconstruction of public swimming pools, water attractions and associated equipment in order to protect the health and safety of the public.

Comm 90.02 Application. (1) APPLICABILITY. This chapter applies to the design and construction of all public swimming pools, water attractions and associated slides, and to the reconstruction or alteration of all public swimming pools, water attractions and associated slides.

Note: Also refer to administrative rules administered by the department of health services, specifically ch. HFS 172, for additional requirements regarding public swimming pools, water attractions and associated slides.

Note: For accessibility information, refer to the final accessibility guidelines for recreational facilities, Federal Register, Vol. 67, No. 170, as published Tuesday September 3, 2002. Requirements relating to swimming pools, wading pools and spas are found under ADAAG 15.8.

(2) RETROACTIVITY. A rule of this chapter does not apply retroactively to public swimming pools, water attractions and associated slides existing prior to the effective date of the rule unless specifically stated in the rule.

(3) LOCAL ORDINANCES. A county, city, village or town or local board of health may enact ordinances for pools, water attractions and associated slides, provided the standards are not in conflict with this code.

(4) PETITION FOR VARIANCE. The department shall consider and may grant a variance to a provision of this chapter in accordance with ch. Comm 3.

Note: Chapter Comm 3 requires the submittal of a petition for variance form (SBD-9890) and a fee, and that an equivalency is established in the petition for variance that meets the intent of the rule being petitioned. Form SBD-9890 is available at no charge from the department at the Safety and Buildings Division website at www.wi.gov/sb.

Comm 90.03 Definitions. In this chapter:

(1) "Accessible" means easily and readily exposed for inspection and the replacement of materials or parts with the use of tools.

(2) "ANSI" means the American National Standards, Institute, Inc.

(3) "Approved" means acceptable to the department based on its determination of conformance with this chapter and good public health practices.

(4) "ASME" means the American Society of Mechanical Engineers.

(5) "Basin" means any vessel constructed of manmade materials and designed to hold water to be used as a public swimming pool or water attraction.

(6) "Bed and breakfast establishment" has the meaning found in s. 254.61 (1), Stats.

Note: Section 254.61 (1), Stats., reads: "Bed and breakfast establishment" means any place of lodging that: (a) Provides 8 or fewer rooms for rent to no more than a total of 20 tourists or transients; (b) Provides no meals other than breakfast and provides the breakfast only to renters of the place; (c) Is the owner's personal residence; (d) Is occupied by the owner at the time of rental; (e) Was originally built and occupied as a single-family residence or, prior to use as a place of lodging, was converted to use and occupied as a single-family residence; and (f) Has had completed, before May 11, 1990, any structural additions to the dimensions of the original structure, including by renovation, except that this limit does not apply to any of the following: 1. A structural addition, including a renovation, made to a structure after May 11, 1990, within the dimensions of the original structure. 2. A structural addition, made to a structure that was originally constructed at least 50 years before an initial or renewal application for a permit under s. 254.64 (1) (b) is made and for which no use other than as a bed and breakfast establishment is proposed. The structural addition under this subdivision shall comply with the rules under s. 101.63 (1) and (1m).

(7) "Breakpoint" means the line of separation between the shallow portion and the deep portion of a pool, defined by a sharp change in the slope of the pool bottom.

(8) "Children's slide" means a slide that has a maximum height of 4 feet as measured vertically from the slide entrance to the slide terminus and terminating in less than 24 inches of water.

(9) "Circulation system" means the outlets, inlets, equipment and piping of pools and water attractions designed to circulate water at a predetermined quantity and velocity in order to treat and purify the water, but does not include backwash piping.

(10) "Common wall" means a partition separating two pools, water attractions or whirlpools, or any combination of the aforementioned.

(11) "Contrasting color" means a variance from a color of 2 steps or more in value and less than 6.5 in value on the Munsell color-order system.

Note: Contrasting colors may cross hue and chroma lines.

(12) "Deck" means the unobstructed walking surface immediately adjacent to the pool or water attraction.

(13) "Deep portion" means that portion of a pool having a design water depth greater than 5 feet.

(14) "Department" means the department of commerce.

(15) "Drop slide" means a pool slide or water slide where the terminus is 20 inches or more above the water level.

(16) "Flume" means that part of a slide within which sliding takes place.

(17) "Interactive play attraction" means a water attraction, including but not limited to manufactured devices using sprayed, jetted or other water sources with a flow rate of more than 50,000 gallons per day

or a circulation system with water contacting the users and not incorporating standing or captured water as part of the user activity area.

Note: Splash pads and spray pads are examples of interactive play attractions.

(18) "NSF" means the National Sanitation Foundation.

(19) "Open swim" means a period of time when persons, other than those residing in living units associated with the pool or water attraction, are permitted to use the pool or water attraction.

(20) "Owner" or "operator" means a municipality, corporation, company, association, firm, partnership or individual owning, controlling or operating any public swimming pool.

(21) "Patron" means a user of the pool.

(22) "Play feature" means a physical object installed in a pool or water attraction that is intended for recreational use.

(23) "Pool" or "public swimming pool" has the meaning found in s. 145.26 (1), Stats. Public swimming pools include all of the following:

(a) "Cold soak pool" means a public swimming pool containing water colder than 72ºF that is commonly used in conjunction with therapy or training.

(b) "Combination pool" means a public swimming pool used for swimming and diving.

(c) "Competition pool" means any pool intended for use by accredited competitive aquatic events.

Note: Accredited organizations may include U.S. Swimming, U.S. Diving, National Collegiate Athletic Association, National Federation of State High Schools Association, or Wisconsin Interscholastic Athletic Association.

(d) "Diving pool" means a public swimming pool used exclusively for diving.

(e) "Exercise pool" means a public swimming pool of shallow depth usually associated with a health spa and which may or may not have a current.

(f) "Limited purpose pool" means a public swimming pool used for a purpose not otherwise defined, such as for apparatus swimming, underwater photography training or another special use by the public.

(g) "Mobile pool" means a public swimming pool constructed on a mobile structure that is capable of being transported from place to place.

(h) "Therapy pool" means a public swimming pool used exclusively for medically administered therapy.

Note: Medically administered may be demonstrated by showing that a Department of Regulation and Licensing licensed therapist is responsible for the pool.

(i) "Wading pool" means a shallow public swimming pool having a maximum depth of 24 inches and intended for children's play.

Note: A zero-depth entry wading pool is an example of a wading pool.

(j) "Whirlpool" means a relatively small public swimming pool that uses high temperature water (greater than 93°F) and that may include a water agitation system. A whirlpool may also be referred to as a spa.

Note: Section 145.26 (1), Stats., reads: "public swimming pool means a fixed or mobile structure, basin, chamber or tank and appurtenant buildings and equipment that serve or are installed for use by the state, a political subdivision of the state, a motel, a hotel, a resort, a camp, a club, an association, a housing development, a school, a religious, charitable or youth organization, an educative or rehabilitative facility or another entity. Public swimming pool does not mean a fixed or mobile structure, basin, chamber or tank that only serves fewer than 3 individual residences."

(24) "Pool slide" means a slide where the drop from the slide terminus to water is less than 20 inches and the flume carries less than 100 gallons per minute of water.

(25) "Private guest room" means a room or rooms that provide sleeping accommodation offered for pay to tourists or transients.

(26) "Reconstructed or altered pool" means a pool construction project where replacement of or modification to the pool shell, circulation system and appurtenances occur. It does not include the replacement of equipment or piping previously approved by the department, provided that the type and size of equipment are not changed, nor does it include normal maintenance or repair.

Note: See listing in Appendix A-90.03 (24).

(27) "Run-out slide" means a waterslide where the rider does not enter into a plunge pool, but has a deceleration area that permits the rider to come to a stop before exiting the slide flume.

(28) "Shallow portion" means the portion of a pool having a design water depth of 5 feet or less.

(29) "Skimmer" means a device installed in a pool wall at the water level that is connected to the circulation piping and is intended to skim debris from the surface of a pool.

(30) "Slip-resistant" means a material that when wet has a coefficient of friction greater than 0.5.

(31) "Splash zone" means the area where water falls on the floor of an interactive play attraction.

(32) "Spray feature" means equipment that produces a flow of water on the patrons as part of a recreational experience.

Note: Spray features include geysers, water cannons and dumping buckets.

(33) "Swimming pool complex" means two or more pools that are located within the same enclosure or room.

(34) "Swimout" means an underwater seat area that has a floor that is higher than the floor of the pool and has walls that are recessed within the main pool wall.

(35) "Suction outlet" means a discharge port installed in the wall or floor of a pool that connects by way of piping to a pump.

(36) "Tourist rooming house" has the meaning found in s. 254.61 (6), Stats.

Note: Section 254.61 (6), Stats., reads: "Tourist rooming house" means any lodging place or tourist cabin or cottage where sleeping accommodations are offered for pay to tourists or transients. "Tourist rooming house" does not include: (a) A private boarding or rooming house, ordinarily conducted as such, not accommodating tourists or transients. (b) A hotel. (c) Bed and breakfast establishments.

(37) "Turnover rate" means the time for a given volume of water to pass through the circulation system. The volume of water is generally the basin volume and the time is usually expressed in hours.

(38) "Water attraction" means a public facility with design and operational features that provide patron recreational water activity other than conventional swimming and involves partial or total immersion of the body. Types of water attractions include:

(a) "Activity pool" means a water attraction with a depth of greater than 24 inches designed primarily for play activity that uses constructed features and devices including, but not limited to, pad walks, multiple flotation devices and similar attractions.

Note: The installation of a single basketball hoop, single flotation device or a single volleyball net does not transform a pool into a water attraction.

(b) "Leisure river" means a stream of near-constant depth in which the water is moved by pumps or other means of propulsion to provide a river-like flow that transports users over a defined path. A leisure river may include play features and devices. A leisure river may also be referred to as a tubing pool or a current channel.

(c) "Plunge pool" means a pool with a depth of greater than 24 inches, located at the exit end of a waterslide flume and intended and designed to receive slide users emerging from the flume.

(d) "Vanishing edge pool" means a water attraction where the top of one or more of the basin walls are submerged with no accompanying decks.

(e) "Vortex pool" means a circular pool that is equipped with a method of transporting water in the pool for the purpose of propelling users at speeds dictated by the velocity of the moving stream.

(f) "Wave pool" means a water attraction designed to simulate breaking or cyclical waves for the purposes of surfing or general play.

(g) "Zero-depth entry pool" means a water attraction having a sloped entrance to where the water depth is zero inches at the shallowest point.

(38) "Water attraction complex" means an enclosure or room where there are two or more water attractions or a water attraction and any number of public swimming pools.

(39) "Waterslide" means a slide where a water flow of 100 gallons per minute or more is intended to carry a rider down a flume.

Comm 90.04 Plan review and approval. (1) REVIEW. (a) *Review requirements.* All designs under the scope of this chapter shall be submitted to the department for review and receive approval from the department prior to the start of construction in accordance with this section.

Note: The department forms required in this chapter are available on request from the Department of Commerce, Safety and Buildings Division, P.O. Box 7162, Madison, WI 53707−7162; phone (608) 266-3151 and (608) 264-8777 (TTY); or may be downloaded from the Safety and Buildings web site at www.commerce.wi.gov/sb.

Note: For submittal of plumbing plans, see s. Comm 82.20.

(b) *Plans and specifications.* 1. At least 4 and no more than 5 complete sets of plans and one copy of specifications for the public swimming pool or water attraction design shall be submitted for review. These sets of plans and copies shall be clear, legible and permanently marked.

2. Plans submitted for review shall be accompanied by sufficient information for the department to determine if the installation and its performance will meet the requirements of this chapter.

Note: Sufficient information may include the diving board manufacturer's installation requirements and skimmer NSF/ANSI 50 ratings.

3. a. Plans and specifications, including adequate supporting design data, shall be prepared by a Wisconsin registered architect or professional engineer and bear that person's seal and signature.

b. Structural review of pool slides shall be based on conformance with the design requirements of slides and tower structures under ch. Comm 62.

4. The design for and extent of replaced or altered equipment and piping shall be included on the submittal of reconstructed or altered swimming pools or water attractions.

5. Pursuant to s. Comm 2.07 (3), the department shall review and make a determination on an application for plan review within 15 business days.

(c) *Revised submittals.* All changes or modifications, involving the provisions of this chapter, shall be approved in writing by the department prior to installation.

(d) *Revocation of approval.* The department may revoke any approval, issued under the provisions of this chapter, for any false statements or misrepresentation of facts on which the approval was based.

(e) *Expiration of approval.* Plans approved by the department shall expire 2 years after the date indicated on the approval letter, if construction has not commenced within that 2-year period.

(f) *Limitations.* A conditional approval of a plan by the department shall not be construed as an assumption by the department of any responsibility for the design. The department does not hold itself liable for any defects in construction or for any damages that may result from the specific installation.

(g) *Fees.* Fees for plan review submittals shall be as specified in ch. Comm 2.

(2) DETAILS. (a) *General.* 1. The name and address of the owner shall be included on the plans or in a separate report.

2. A map indicating the exact location of the facility with street address shall be included on the plans or in a separate report.

(b) *Site.* Site information shall be included on the plans indicating at least the location of all wells and utilities, topography and natural water features.

(c) *Plot plan.* 1. A general map and detailed scaled drawings shall be submitted showing the site plan or floor plan of pertinent portions of the public swimming pool or water attraction structure, public swimming pool or water attraction orientation, including the location of all slides, interactive play attractions and play features. The designed pool water elevation shall be shown on the detailed drawing.

2. All water supply facilities, sources of drinking water, public or private sewers and relative elevations of paved or other walkways and the equipment room floor shall be shown on the plans.

3. When public water and sewer systems are proposed to serve the public swimming pool or water attraction, the elevations of storm and sanitary sewer inverts and street grade shall be shown on the plans.

(d) *Construction plans.* Detailed scaled and dimensional drawings for each individual pool or water attraction shall include at least all of the following:

1. A layout plan showing dimensioned longitudinal and transverse cross sections of the public swimming pool or water attraction. Include location and type of inlets, overflows, pool drains, suction outlets, deck drains, drinking fountains or sources of drinking water, piping, entries and exits, hosebibbs, fences, telephones, design of deck, curb or walls enclosing the pool, paved walkways, overflow gutters or devices, ladders, stairs, diving boards, slides and play features.

2. A flow diagram showing the location, plan, elevation and isometrics of filters, pumps, chemical feeders, ventilation devices, heaters, surge tanks including operating levels, backflow preventers, valves, piping, flow meters, gauges, thermometers, test cocks, sight glasses and the drainage system for the disposal of pool and filter wastewater.

3. The plan drawings for all available sanitary facilities and any bathhouse facilities provided including dressing rooms, lockers and basket storage, showers and all other plumbing fixtures.

4. A single table with the specifications for the pool or water attraction and all associated equipment.

5. The design information used to determine the surface area and volume of the pool or water attraction.

(e) *Specifications.* Complete technical specifications for the construction of the pool or water attraction and all appurtenances to accompany the drawings under par. (d), shall include at least all of the following:

1. All construction details not shown on the plans.

2. Detailed requirements for the type, size, operating characteristics and rating of all mechanical and electrical equipment.

3. Number and location of plumbing fixtures and piping associated with the pool.

4. The sources of all water supplies.

5. Filter media such as diatomaceous earth, sand, gravel or other approved material.

6. Any information related to the project requested on the plan submittal application.

7. Any other information necessary to determine compliance with this chapter.

(3) ALTERNATE PUBLIC SWIMMING POOL OR WATER ATTRACTION DESIGN REVIEW. (a) *Innovation.* The provisions of this chapter are not intended to prevent innovative designs for public swimming pools or water attractions. The department may issue an approval of an alternate design if the design complies with the intent of this chapter.

(b) *Alternate designs.* 1. For an alternate public swimming pool or water attraction design, an approval shall be required before statewide installation and use.

2. Alternate designs submitted for review shall be accompanied by sufficient information for the department to determine if the design and its performance will meet the requirements of this chapter.

3. The department shall review and make a determination on an application for an alternate design submittal within 90 days of receipt of all information and fees required for completion of the review.

4. The department may include specific conditions in issuing an approval for an alternate design, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this chapter.

5. If, upon review, the department determines that an alternate design does not comply with the intent of this chapter, the request for approval shall be denied in writing.

6. If a design receives alternate approval, a plan for the site-specific public swimming pool or water attraction complying with the alternate design approval shall be submitted in accordance with sub. (1).

(c) *Revisions.* If an approved alternate design is modified or additional assertions of function or performance are made, the approval shall be considered null and void, unless the design is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentation of facts or data on which the approval was based, or as a result of design failure.

(e) *Limitations.* An approval issued by the department for an alternate design may not be construed as an assumption of any responsibility for defects in design, construction or performance of any installation or for any damages that may result.

(f) *Fees.* Fees for the review of an alternate design under this section and any onsite inspections shall be submitted in accordance with ch. Comm 2. Fees for any miscellaneous inspections shall be as specified in s. Comm 2.04 (2).

(4) EXPERIMENTAL PUBLIC SWIMMING POOL OR WATER ATTRACTION DESIGN REVIEW. (a) *Experimental Review*. The provisions of this chapter are not intended to prevent

innovative designs for public swimming pools or water attractions. The department may issue an approval of an experimental public swimming pool or water attraction design for the purpose of proving compliance with the intent of this chapter.

(b) *Experimental designs.* 1. Experimental public swimming pool or water attraction designs submitted for review shall be accompanied by sufficient information as requested by the department.

2. The department shall review and make a determination on an application for an experimental submittal within 120 days of receipt of all information and fees required for completion of the review.

3. The department may include specific conditions in issuing an approval for an experimental design, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this chapter.

4. If, upon review, the department determines that an experimental design is not acceptable, the request for approval shall be denied in writing

5. If a design receives experimental approval, a plan for the site-specific public swimming pool complying with the experimental design approval shall be submitted in accordance with sub. (1).

6. The department may limit the number of applications for review of experimental systems.

(c) *Revisions.* If an approved experimental design is modified or additional assertions of function or performance are made, the approval shall be considered null and void, unless the design is resubmitted to the department for review and approval is granted.

(d) *Revocation of approval.* The department may revoke an approval issued under this section for any false statements or misrepresentation of facts or data on which the approval was based, or as a result of design failure.

(e) *Limitations.* An approval issued by the department for an experimental design may not be construed as an assumption of any responsibility for defects in design, construction or performance of any installation or for any damages that may result.

(f) *Fees.* Fees for the review of an experimental design under this section and any onsite inspections shall be submitted in accordance with ch. Comm 2. Fees for any miscellaneous inspections shall be as specified in s. Comm 2.04 (2).

Note: Plans and specifications are to be submitted to the Department of Commerce, Safety & Buildings Division, via the United States Postal Service via P.O. Box 7162, Madison, Wisconsin 53707-7162 or other delivery services via 201 West Washington Avenue, Madison, Wisconsin, 53703.

90.05 Construction. (1) CONSTRUCTION SUPERVISION. (a) *Options.* 1. The installation, alteration or reconstruction of any public swimming pool or water attraction shall be under the supervision of a construction contractor pursuant to s.443.14 (6) stats., or a Wisconsin registered architect or engineer.

Note: Section 443.14 (6), Stats., reads: Notwithstanding any other provision of this chapter, contractors, subcontractors or construction material or equipment suppliers are not required to register under this chapter to perform or undertake those activities which historically and customarily have been performed by them in their respective trades and specialties, including, but not limited to, the preparation and use of drawings, specifications or layouts within a construction firm or in construction operations, superintending of

construction, installation and alteration of equipment, cost estimating, consultation with architects, professional engineers or owners concerning materials, equipment, methods and techniques, and investigations or consultation with respect to construction sites, provided all such activities are performed solely with respect to the performance of their work on buildings or with respect to supplies or materials furnished by them for buildings or structures or their appurtenances which are, or which are to be, erected, enlarged or materially altered in accordance with plans and specifications prepared by architects or professional engineers, or by persons exempt under subs. (1) to (5) while practicing within the scope of their exemption.

2. The supervising construction contractor, architect or engineer shall be responsible for the public swimming pool or water attraction being in conformance with this chapter and the plans and specifications approved by the department.

3. At the time of the arranging the first inspection, the owner or the owner's authorized agent shall designate to the department the name and address of the supervising construction contractor or the name and certification number of the supervising architect or engineer.

(b) *Operation and Maintenance Instructions*. Upon completion of any public swimming pool or water attraction, the owner or owner's agent shall be given complete written instructions concerning operation of the pool or water attraction, all equipment, the circulation system, and the maintenance of the water quality.

(c) *Certification of compliance.* 1. Prior to the completion of the final inspection of any public swimming pool or water attraction, the supervising construction contractor, architect or engineer shall provide to the department a compliance statement.

2. The compliance statement shall certify that the installation is in compliance with this chapter.

3. The compliance statement shall be in a format acceptable to the department.

(2) CONSTRUCTION INSPECTION. (a) Every new installation, alteration or reconstruction of a public swimming pool or water attraction shall be inspected as required in this section.

(b) The construction, alteration or reconstruction of any public swimming pool or water attraction shall be inspected by an authorized representative of the department.

Note: See Appendix A-90.05 (2) for listing of additional authorized representatives of the department.

(c) 1. A rough-in inspection shall be conducted when the piping system is installed and before the piping system is covered.

2. The supervising construction contractor, architect or engineer shall notify the department's authorized representative by telephone when underground work is complete and ready for an inspection to be scheduled.

3. Except as provided under subd. 3., work may not proceed until the inspection has been completed.

4. If the inspection is not made by the end of the normal business day following the day of notification, not including Saturday, Sunday or legal holidays, the installation work may proceed.

(d) 1. A final inspection shall be made when the construction, alteration or reconstruction is complete.

Note: A final inspection includes, but is not limited to, sanitary facilities, pools, fences and decks.

2. The supervising construction contractor, architect or engineer shall notify the department's authorized representative by telephone when all work is complete and ready for an inspection to be scheduled.

3. A request for the final inspection shall be made at least 24 hours prior to the requested time for the inspection.

4. The final inspection shall be completed within 5 business days of the requested inspection date.

Note: Inspections are only available during standard business hours.

(e) The supervising construction contractor, architect or engineer shall provide the necessary equipment and personnel required for the inspection as requested by the authorized representative of the department.

(f) If the authorized representative of the department finds that the installation does not comply with this chapter, necessary corrections shall be made to achieve compliance. The authorized representative of the department shall be notified by the supervising construction contractor, architect or engineer when the corrections are completed.

(3) AUTHORIZED INSPECTION AGENT. (a) Upon request from a governmental unit, the department may delegate to the governmental unit the responsibility to conduct construction inspections of any public swimming pool or water attraction in accordance with this section.

(b) The delegation of inspection authority by the department shall be contingent upon a request by the governmental unit demonstrating sufficient capabilities to complete the construction inspections.

(c) The department shall provide the governmental unit with a written decision of authorization or denial relative to the request under this subsection concerning construction inspection.

(d) The department shall monitor and periodically evaluate the construction inspection functions that are authorized to the governmental unit under this section.

(e) If a governmental unit wishes to discontinue the authorized construction inspection function under this section, written notification shall be made to the department at least 30 days prior to the discontinuance.

(f) The authorization to conduct construction inspections may be revoked by the department at the department's sole discretion.

Comm 90.07 Fines. Any person who violates this chapter or any plan or specification included as part of an approval that is issued under this chapter shall be fined pursuant to s. 145.26 (6) not less than $100 nor more than $5,000 for each violation. Each day of continued violation is a separate offense.

Subchapter II – The Design of Public Swimming Pool and Water Attractions

Comm 90.10 Minimum design requirements. (1) GENERAL REQUIREMENTS. (a) Any construction or alteration of a pool or water attraction shall be designed and installed as specified under this subchapter.

(b) The design of pools and water attractions shall be based on generally accepted engineering practices. Some of the details of design, construction and installation may vary from the specifications of this code, but the basic engineering principles desirable and necessary to protect the health and safety of pool users and patrons shall be used by the department for situations not addressed in this subchapter.

(2) LOCATION. Pools and water attractions shall be located on a site conducive to proper operation, maintenance and safety of the pool or water attraction. The site shall be well drained.

(3) STRUCTURAL STABILITY. All pools and water attractions shall be designed and installed to be structurally sound.

(4) MATERIALS. (a) Pools and water attraction surfaces shall be impervious, easy to clean, inert and nontoxic to humans.

(b) Pools and water attractions shall be constructed of materials that do not create a toxic condition in the environment.

(5) FREEZING. Where subject to freezing temperatures, the basin and appurtenances, piping, filter system, pump and motor and other components shall be designed and constructed to facilitate protection from damage due to freezing.

(6) EQUIPMENT AND MATERIAL APPROVAL. All material and equipment used in the operation of a pool or water attraction within the scope of ANSI/NSF 50 shall conform to ANSI/NSF 50 or the equivalent.

(7) VENTILATION. Ventilation shall be provided for all indoor pools and water attractions.

Note: See Comm 64 for requirements for ventilation.

(8) SLIP RESISTANCE. (a) The surfaces intended to provide patron footing within the pool enclosure or on the deck shall have a slip-resistant surface.

(b) The surfaces intended to provide patron footing include patron walkways, deck, stair treads, zero-depth entries and water levels less than 24 inches in depth.

Note: Slide flume surfaces are not intended to provide patron footing.

(9) CONSTRUCTION TOLERANCES. Construction tolerances may not exceed the applicable design dimensions beyond those designated in Table 90.10.

Table 90.10
Construction Tolerances

Design Dimension	Construction Tolerance Permitted
Water depth in areas greater than 5′ deep	± 3″
Water Depth in areas up to 5′ deep	± 2″
Floor nozzle protrusion	± 1/8″
Stair treads and risers	± 1/2″[a]
Waterline for skimmer pools[b]	± 1/4″
Waterline for gutter and overflow trench pools	± 1/8″
Wall variance from vertical	± 3°

[a] The construction tolerance is measured over the entire staircase at the center of the treads.
[b] The construction tolerance for skimmer pools is measured as the difference between skimmer vertical center lines.

Comm 90.11 Basin design. (1) GENERAL. (a) Except as provided in par. (b) or (c), pool and water attraction basins shall conform to all of the requirements in this section.

(b) Therapy pool basin designs shall comply with the basic principles in s. Comm 90.10 (1) (b).

(c) Competition pool basins may be designed in accordance with the standards of the sanctioning organization.

(d) Competition pool basins that do not comply with s. 90.10 (8) and made available for open swim shall be permitted only where another pool or water attraction that complies with s. 90.10 (8) is available at the site for open swim.

(2) STRESS RELIEF. Provision shall be made for the relief of stress to basin walls and floors which may occur as a result of unbalanced hydrostatic pressures.

(3) DIVING AREAS. (a) Basins that include diving apparatus shall conform to one of the following:

1. The basin shall comply with the standards in this subsection.

2. The basin shall comply with the standards of a sanctioning organization acceptable to the department.

Note: See the appendix for further information.

(b) The design of a basin that includes a diving area shall comply with the profiles in Figure 90.11-1 and Table 90.11-1.

Figure 90.11-1
Diving Area Dimensions

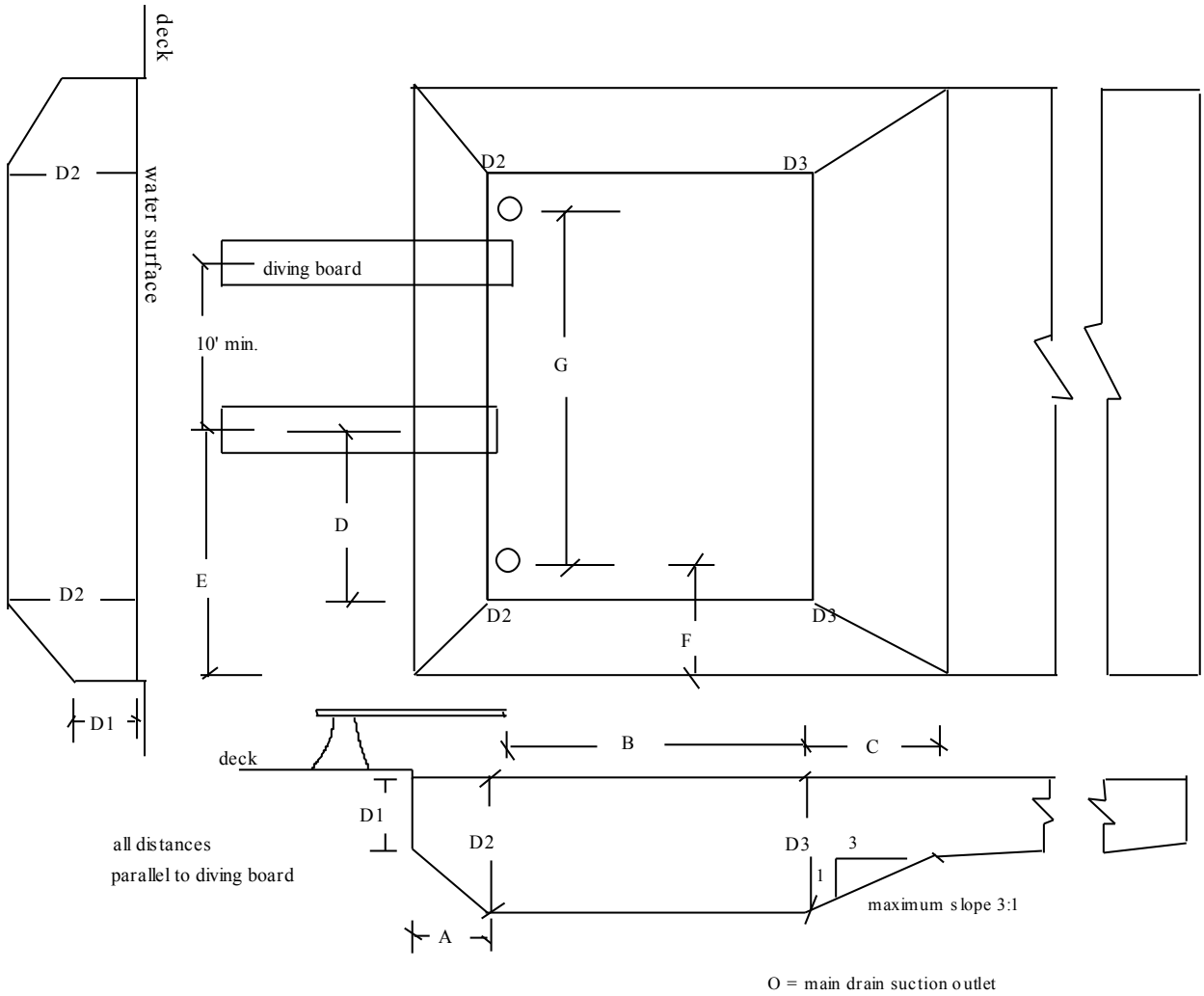

Table 90.11-1
Dimensions Related to Figure 90.11-1

Type of Pool		Depths			Lengths						
		D-1[1]	D-2	D-3	A[2]	B	C	D	E	F[3]	G[3]
With 26″ (2/3 M) Diving Board	Min	5′0″	9′0″	8′6″	2′6″	**	10′0″	5′0″	10′0″	*	*
	Max	D-2	*	D-2	3′0″	*	*	*	*	10′0″	20′0″
With 30″ (3/4 M) Diving Board	Min	5′0″	10′0″	9′6″	3′0″	**	12′0″	5′0″	10′0″	*	*
	Max	D-2	*	D-2	4′0″	*	*	*	*	10′0″	20′0″
With One Meter Diving Board	Min	5′0″	11′0″	10′6″	4′0″	**	15′0″	8′0″	10′0″	*	*
	Max	D-2	*	D-2	5′0″	*	*	*	*	10′0″	20′0″
With 3 Meter Diving Board	Min	5′0″	12′0″	11′6″	5′0″	**	18′0″	10′0″	15′0″	*	*
	Max	D-2	*	D-2	6′0″	*	*	*	*	10′0″	20′0″

* No limiting dimension.
** Distance is as required by the diving equipment manufacturer.
[1] The D-1 measurement shall be taken at the end wall or not more than 6 inches from the wall.
[2] The diving board length extending over the pool shall not be less than "A" and in accordance with the diving equipment manufacturer's installation instructions.
[3] This dimension is only applicable to pools with wall inlets.

(4) BASIN OBSTRUCTIONS. (a) 1. Protrusions, extensions and other functional elements within a basin may not create a safety hazard.

2. Protrusions, extension and other functional elements may not negatively impact the circulation system.

3. When an obstruction is a recreational object in water of 24 inches or more in depth, the obstruction shall be a color that contrasts with the color of the basin.

4. Basin obstructions in public swimming pools shall be no more than 2 feet in diameter, protrude undiminished in diameter to at least 5 feet above the pool floor and no less than 3 feet above the water level.

5. Obstructions including handrails, exercise equipment and therapy structures may only be installed in therapy pools.

(b) Stair and ladder handrails are not considered basin obstructions when installed in accordance with s. Comm 90.12.

(5) WALLS AND BULKHEADS. (a) *Basin walls.* 1. Basin walls shall be vertical.

2. Except for vanishing edge designs, basin walls shall extend above the highest water level at all times during operation.

3. Protruding corners shall be rounded so as to protect users from lacerations.

(b) *Interior walls and common walls.* In addition to the requirements in par. (a), interior walls and common walls may not exceed 18 inches in width.

(c) *Bulkheads*. Bulkheads may be installed only in pools with a department of health services-approved lifeguard staffing plan that addresses supervision of the bulkhead.

(6) COLORS AND FINISHES. (a) All pool interiors shall be light in color, having a value of 6.5 or greater on the Munsell color-order system.

(b) All colors, patterns or demarcation lines may not negatively impact observer's visualization of bathers.

(c) All demarcation lines shall be of contrasting color to the pool interior.

(7) FLOOR SLOPE (a) Basin floors shall slope to drain.

(b) Basin floor slopes may not exceed 1:12 in water depths less than 5 feet.

(8) TRANSITIONAL RADIUS. (a) Basin walls shall be joined to the floor with a tangent radius.

(b) For areas less than 5 feet in depth, the maximum radius between the floor and the basin wall shall be 6 inches.

Note: See the appendix for information on measuring the radius dimension.

(9) WATER DEPTHS. (a) Basin depths for diving areas shall comply with Table 90.11-1.

(b) Basin depths for slide installations shall comply with Table 90.31-1.

(c) Except as permitted for wading pools in s. Comm 90.20, the shallowest water depth of the shallow end of pools shall be a minimum of 30 inches and a maximum of 42 inches.

(d) The water depth at the breakpoint in a combination pool shall be no less than 4.5 feet and no more than 5.5 feet.

(10) VANISHING EDGES. A single vanishing edge basin wall occupying a maximum of 50% of the basin perimeter may be included within a water attraction when all of the following are included in the design:

(a) The vanishing edge is located adjacent to water that is at least 5 feet deep.

(b) A catch ledge, a minimum of 3 feet in width or equivalent protection, is included on the dry side of the basin wall.

(c) The catch ledge shall be located outside of the basin within 3 feet vertically from the top of the basin wall.

(d) The catch ledge shall be designed to prevent a patron from rolling off the catch ledge.

(e) The catch ledge surface shall be constructed of materials that will not cause injury from abrasions or lacerations.

Note: See the appendix for further information on the design of vanishing edge basin walls.

Comm 90.12 Entries and exits, stairs, ladders, swimouts and benches. (1) ENTRIES AND EXITS. The minimum number, type and location of entries and exits shall be in accordance with Table 90.12-1.

Table 90.12-1
Entry and Exit Locations and Type

Basin Type	Entry and Exit Requirements
POOLS	
Swimming Pools	Minimum of two exits Exits within 75 feet along perimeter
Therapy Pools	As approved by the Department
Wading Pools	Minimum of 50 percent of the pool
Whirlpools or Cold Soak Pools	Recessed stairs 25 feet from any point in the pool[a]
WATER ATTRACTIONS	
Wave Pools	Entry and exit at zero-depth entry, only[b]
Activity Pools	Exits within 50 feet from any point in the pool
Plunge Pools	Entry from slide, only Exits within 50 feet from any point in the pool[a]
Leisure Rivers	Minimum of one entry and exit
Vortex Pools	Minimum of one entry and exit
DIVING AREAS as delineated in s. Comm 90.11 (3)	
Diving Areas	On the perimeter of the pool within 50 feet of any point in the diving area[a]
Other Basin Types	Contact the department

[a] Travel to stairs is measured as the most direct path within the basin.
[b] Emergency exits may be permitted with written approval of the department.

(2) ZERO-DEPTH AND SHALLOW ENTRIES. (a) Except as permitted in par. (b) stairs, ladders, recessed treads and swimouts may serve as acceptable entries and exits.

(b) Where the distance from the pool floor to deck surface is 24 inches or less, such areas shall be considered as providing their own natural mode for entry and exit.

(3) STAIRS AND HANDRAILS. (a) *Stairways.* 1. Stairways shall be located only in areas of the basin with less than 5 feet of water depth.

2. Stairways shall be recessed so as not to protrude onto the basin floor.

3. All risers at the centerline shall have a maximum uniform height of 10 inches.

4. All treads shall have a minimum depth of 10 inches.

5. Stairways shall have a minimum width of 17 inches.

6. All treads shall have a minimum unobstructed surface area of 240 square inches.

7. Except as permitted in subd. 8., treads may not project beyond the face of the riser.

8. The maximum cantilevered coping at the deck level is one inch.

9. a. Except as required in subd. 9. b., stairways shall extend to the basin floor.

b. When stairways are located in a water depth over 4 feet, the lowest tread shall be not more than 4 feet below the deck.

10. The bottom riser height shall be allowed to vary from the other risers as may be required to meet the floor.

11 The leading edge of all steps shall be distinguished by a color contrasting with the color of the steps and pool floor.

12. All step corners shall be rounded to a radius of 1/2 inch.

(b) *Handrails*. 1. Handrails shall be provided for all stairways and ramps.

2. Handrails shall be located between 30 and 34 inches above the ramp surface or nosing of the stair treads.

3. Handrails shall be a maximum of 8 feet apart at deck level.

4. Handrails shall return to the pool wall, guard or deck or shall be continuous to the handrail of an adjacent stair.

5. Handrails shall be made of corrosion resistant materials.

6. Handrails shall be securely anchored.

7. Handrails shall be installed so they cannot be removed without the use of tools.

8. The leading edge of stair tread mounted handrails shall be located on the bottom tread.

9. The leading edge of entirely deck mounted handrails shall be located so as to extend to within 3 inches of the vertical plane of the bottom riser.

Note: See the appendix for further clarification of deck-mounted handrail installation.

10. The outside diameter of handrails shall be a minimum of 1-1/4 inches and may not exceed 1-15/16 inches.

11. There shall be at least 3 inches but not more than 6 inches clearance between the pool wall and the handrail.

(4) LADDERS. (a) Ladders shall be provided with two handrails.

(b) There shall be at least 3 but not more than 6 inches clearance between the basin wall and the ladder.

(c) The distance between ladder handrails shall be 17 inches minimum and 24 inches maximum.

(d) There shall be a uniform distance between ladder treads with a 7-inch minimum distance and 12-inch maximum distance.

(e) Ladder treads shall have a minimum horizontal uniform depth of 2 inches.

(5) RECESSED TREADS. (a) Recessed treads in a basin wall shall have a uniform vertical spacing of no less than 7 inches and no greater than 12 inches measured at the centerline.

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

(c) Recessed treads shall have a depth of no less than 5 inches and width of no less than 12 inches.

(d) Recessed treads shall drain into the pool.

(e) Recessed treads shall be provided with a handrail on each side of the treads.

(6) SWIMOUTS. (a) The horizontal surface of a swimout may not be greater than 20 inches below the waterline.

(b) A minimum unobstructed surface equal to that required for a stair under sub. (5) shall be provided in a swimout.

(c) The leading edge of a swimout shall be visually set apart with a marking color to contrast with the swimout.

(d) A swimout may occupy no more than 20 percent of the perimeter of the basin.

(e) The horizontal surface of a swimout may extend no further than 48 inches from the main basin wall.

(7) UNDERWATER SEATS AND BENCHES. (a) Underwater seats and benches shall be located in a recessed area to eliminate any protrusion beyond the main basin wall except in whirlpools and cold soak pools.

(b) 1. The width of the bench seat may not exceed 18 inches.

2. The depth of the water above the bench seat may not exceed 20 inches.

(c) The surface of all underwater seats and benches shall be of a color in distinct contrast to the color of the surrounding basin or have a 2-inch leading edge of contrasting boundary line.

(d) The words “bench below” shall be placed on the deck at the edge of the basin at the bench area in a color in distinct contrast to the deck background.

(e) Underwater seats and benches may not be considered an entry or exit.

(8) LIFT CHAIRS. Water supply outlets serving lift chairs shall terminate within 18 inches of the chair's support post.

Comm 90.13 Deck. (1) MINIMUM DECK. (a) Except as permitted in pars. (b) to (e), deck shall extend around the entire perimeter of all basins within the same enclosure.

(b) A water attractions shall be provided with deck immediately adjacent to a basin where patrons are allowed to walk.

(c) A wading pool shall be provided with deck around at least 50 percent of the basin perimeter.

(d) A whirlpool shall be provided with deck around at least 50 percent of the basin perimeter.

(e) A therapy pool shall be provided with deck at all entry and exit points.

(2) DECK WIDTH. (a) Except as required in pars. (b) to (e) deck shall extend for at least 6 feet from all basins.

(b) Deck shall extend for at least 5 feet from a whirlpool basin.

(c) Deck shall extend for at least 3 feet around deck obstructions and equipment.

(d) Deck shall extend for at least 12 feet from a basin with a water depth exceeding 24 inches to a basin with a water depth less than 30 inches or an interactive play attraction.

(e) Deck shall extend for a minimum 15 feet from a basin to locker or shower room doors where the basin meets all of the following criteria:

1. The basin consists of 3,500 square feet of water surface.

2. The basin has a water depth exceeding 24 inches.

(f) Deck required in par. (e) shall extend for at least 12 feet wide at all locker or shower room doors.

(g) Deck areas that do not provide the minimum deck required in pars. (b) to (f) shall be installed so as to permanently prohibit public access from the deck.

Note: See appendix for further information.

(3) DECK OBSTRUCTIONS. (a) Except as permitted in par. (c), deck obstructions, including roof support columns, may be no greater than 2 feet in diameter and of contrasting color so as to provide adequate clearance, safety, visibility and access where a department of health services- approved lifeguard staffing plan is not required.

Note: Deck obstructions include pillars, play equipment and themeing. Equipment includes but is not limited to ladders, life guard chairs, lift chairs and handrails.

(b) Deck obstructions shall extend a minimum of 3 feet above the deck so as not to create a tripping hazard.

(c) Deck obstructions may occupy a maximum of 10 percent of the pool perimeter for basins where a lifeguard staffing plan is not required.

(4) IN-DECK VENTILATION SYSTEMS. (a) Ventilation registers in decks shall be installed so that water flowing from the surrounding pool deck will not enter the registers, but will flow to the deck drains serving the deck.

(b). Ventilation registers in decks shall be installed so that the registers are one inch higher than the deck drain grating.

(c) Where ventilation registers are installed in decks, the owner of the facility shall obtain approval from the Department of Health Services for their means of deck maintenance.

(5) DECK SLOPES. (a) Except as permitted in subds. 2. and 3., interior decks shall be sloped so as to effectively drain to deck drains.

1. The maximum slope of interior decks shall be ½ inch per foot.

2. A maximum of 6 feet of deck adjacent to a plunge pool exit, stairway or runout slide terminal section may discharge to the surge tank.

3. A maximum width of 20 inches of deck between a wall and a basin may discharge to the basin.

(b) 1. Except as permitted in subd. 2., exterior decks shall be sloped a maiximum of ½ inch per foot as to effectively drain to deck drains, perimeter areas or to the plumbing storm system.

Note: See s. Comm 82.36 for plumbing storm system design information.

2. Exterior elevated decks may be drained to underlying soils to infiltrate.

(c) Decks shall be constructed so that standing water shall be no deeper than 1/8 inch, 20 minutes after the cessation of the addition of water to the deck.

Note: Two USA quarters may be stacked in order to test the standing water depth.

(6) DECKS, RAMPS AND WALKING AND STEP SURFACES. (a) 1. Decks, ramps walking and step surfaces shall be nontoxic.

2. Surfaces shall be slip resistant.

3. Surfaces shall be easily cleanable.

4. Surfaces shall not cause injury to user's feet under normal conditions.

(b) The deck edge that pool patrons may come in contact with shall be radiused, tapered or otherwise relieved to minimize sharpness.

(7) JOINTS. (a) The maximum joint width between pool decks and other decks or walkways, including joint material, shall be 3/8 inch of horizontal clearance with a maximum difference in vertical elevation of ¼ inch.

Note: This section refers to joint widths between the pool deck and other adjacent decks.

(b) Construction joints between pools and concrete decks shall be watertight.

(8) DECK STAIRS. (a) Exterior deck stair risers shall be uniform and have a minimum height of 4 inches and a maximum height of 7 inches.

(b) Exterior deck stair treads shall be uniform and have a minimum depth of 11 inches.

(c) A handrail shall be provided along both sides of stairs having more than one riser including the riser to the deck.

(d) The height of the handrail shall be at least 34 but not more than 38 inches above the nosing of the tread.

(e) Handrails shall return to the pool wall, guard or deck or shall be continuous to the handrail of an adjacent stair.

(e) Handrails shall be located at the outside edge of stairs.

Note: Interior deck stairs shall comply with the requirements in the chs. Comm 60 to 66, the Commercial Building Code.

(9) SERVICE EQUIPMENT. (a) *Access to valves*. 1. Valves installed in or under any deck shall have access provided for operation, service and maintenance.

2. Access covers shall be provided for valve pits.

(b) *Cleaning*. 1. One hose bibb shall be provided in each public swimming pool or water attraction equipment room.

2. Additional hose bibbs shall be provided as necessary, and at intervals so as to permit adequate cleaning of the deck and toilet facilities using a maximum of 100 feet of hose when laid across the deck surface.

(10) LANDSCAPING. (a) Landscaping within the barrier required in s. Comm 90.18 (4) shall comply with at least one of the following:

1. Organic material and inorganic pervious material shall be separated from the otherwise required deck by an additional 5 feet of deck.

2. Organic material and inorganic pervious material shall be installed in a 4-inch depression surrounded by a 42 inch high barrier.

(b) Sand play areas may not be located within a pool enclosure unless all of the following are met:

1. The sand play area is separated from the deck by a 42 inch high rope and bollard or other fence barrier.

2. Foot or body showers shall be provided at any entrances to the deck from the sand play area.

3. Sand play areas shall be located outside the deck required in subd. (2).

Comm 90.14 Circulation systems. A water circulation system consisting of pumps, piping return inlets and suction outlets, filters and other necessary equipment shall be provided that complies with all of the following requirements:

(1) TURNOVER RATE. Circulation system equipment shall be designed to produce a turnover rate as specified in Table 90.14-1 or Table 90.14-2.

Note: See the appendix for further information.

Table 90.14-1
Maximum Turnover Rates[a]

Area/Basin Type[b]	Maximum Turnover Rate (hours)[c]
Swimming/Diving	6
Activity	2[d]
Interactive Play Attraction	0.5
Lap Lanes	6
Leisure River	2
Plunge	1
Runout Slide	1
Vortex	1
Wave	2
Cold Soak	4
Wading Pool	1
Whirlpool	0.5

[a] Calculate an average turnover time for multi-sectional basins.
[b] For pool types not listed herein, contact the department.
[c] Based on flow and pressure drop with a clean filter condition.
[d] Or as otherwise approved by the department.

Table 90.14-2
Therapy/Exercise Turnover Times

Temperature in °F	Load[a] (gals/person)	Maximum Turnover Time (hours)
< 72 – 93	≥ 2,500	4
< 72 – 93	≥ 450	2
< 72 – 93	≤ 450	1
> 93 – 104	N/A	0.5

N/A Not applicable
[a] The number of persons is equal to the posted patron load.

Note: A therapy area within a multi-section pool having a temperature of ≤ 93 °F is considered to be an activity pool.

(2) SEPARATE SYSTEMS. The circulation system shall be separate for each public swimming pool or water attraction.

(3) SEPARATION FROM SLIDES AND PLAY FEATURES. (a) Except as provided in pars. (b) and (c), public swimming pool or water attraction circulation systems may not serve slide or spray features.

(b) A maximum of 10 percent of the required circulation system rate may be provided for the lubrication of slides or to spray features.

(c) Flow in excess of the required circulation rate may serve slides and spray features.

(4) ACCESSIBILITY. Circulation system equipment including but not limited to pumps, skimmers, filters, gauges, meters and thermometers shall be readily accessible for inspection, repair or replacement.

(5) COMPONENT STANDARDS. Equipment that is within the scope of ANSI/NSF 50, circulation system components and related materials, shall be listed by an acceptable listing agency to meet ANSI/NSF 50 or equivalent.

(6) INSTALLATION. (a) Pool equipment and related piping shall be supported to prevent damage from misalignment and settling.

(b) Pool equipment shall be installed in accordance with manufacturer's printed instructions and as specified in this chapter. If there is a conflict between the manufacturer's printed instructions and requirements of this chapter, the requirements of this chapter shall take precedence.

(7) VELOCITIES AND PIPE SIZING REQUIREMENTS. (a) Velocities in the circulation system may not exceed:

1. Ten feet per second in discharge piping other than copper.

2. Eight feet per second in copper discharge piping.

3. Six feet per second in suction piping.

4. One and one-half feet per second through suction grates.

(b) Pool piping shall be sized to permit the rated flows for filtering and cleaning without exceeding the maximum design head of the pump.

(8) GAUGES AND FLOW METERS. (a) A pump suction compound gauge shall be included in all circulation systems.

(b) A pump discharge gauge shall be located upstream of all throttling valves.

(c) A filter pressure gauge shall be included serving all filters in circulation systems.

(d) A flow meter capable of displaying flow during filtration shall be included in all circulation systems.

(9) TESTING. Circulation system piping that is installed onsite shall be subjected to an induced static hydraulic pressure test at 25 pounds per square inch for at least one hour.

(10) FILTERS. (a) *Design*. Filters shall be specified so that when operated and maintained in accordance with the manufacturer's printed instructions, the system provides the water clarity required in ch. HFS 172.

(b) *Maximum Flow Rate*. 1. Filters other than high rate sand filters shall be specified so that the maximum flow rate does not exceed those under ANSI/NSF 50.

2. High rate sand filters shall be specified so that the maximum flow rate does not exceed 15 gallons per minute per square foot or bed surface area.

(c) *Pressure Release*. 1. Pressure-type filters shall be provided with a means to permit the release of internal pressure.

2. Filters incorporating an automatic air vent as the principal means of air release shall have a lid that provides a slow and safe release of pressure as a part of the design and have manual air release in addition to the automatic release.

3. Separation tanks used in conjunction with a filter tank shall comply with subd. 2.

4. The following statement shall be placed within the area of the air release so as to be clearly visible: "WARNING. DO NOT START UP THE SYSTEM AFTER MAINTENANCE WITHOUT FIRST OPENING THE AIR RELEASE AND PROPERLY ASSEMBLING THE FILTER AND SEPARATION TANK."

(11) CIRCULATION PIPING. (a) Circulation piping shall be listed as meeting one of the following methods:

1. ANSI/NSF 50 by a listing agency acceptable to the department.

2. Chapter Comm 84.

(b) All circulation piping shall be listed to withhold a pressure 50 percent greater than the maximum design pressure.

(12) PUMPS AND MOTORS (a) All circulation pumps shall be capable of providing the design flow rates at one of the following minimum total dynamic heads:

1. Eighty feet for diatomaceous earth filters.

2. Seventy feet for sand or cartridge filters.

3. Fifty feet for vacuum filters.

4. A maximum total dynamic head value recommended by the filter manufacturer that allows the filter to function under all operating conditions.

(b) Pumps located below the waterline of a basin shall have isolation valves installed on suction and discharge lines.

(c) Pumps located above the waterline of the pool shall be self-priming or the system shall be designed to provide a means for priming.

(d) Intake strainers shall be provided upstream of all circulations pumps on pressure filter systems.

(e) Mechanical seals shall be corrosion resistant.

(13) RETURN INLETS AND SUCTION OUTLETS. (a) Inlets and outlets shall be provided and arranged to produce a uniform circulation of water and maintain the distribution of sanitizer residual throughout the pool.

(b) *Return inlets*. 1. Return inlets shall be designed and installed so as to not constitute a hazard to the patron.

Note: An example of an inlet installation constituting a hazard to a patron is an inlet installed on a racing lane cross.

2. There shall be at least 2 inlets per circulation system.

3. Except as provided in subd. 4., the velocity of flow through any inlet orifice shall be in the range of 5 to 20 feet per second

Note: See the appendix for inlet velocity information.

4. For pools equipped with skimmers the velocity of flow through any inlet orifice shall be in the range of 10 to 20 feet per second.

5. Except for leisure rivers, the minimum number of return inlets shall be based on at least one additional inlet per 300 square feet of pool surface area or fraction thereof.

6. There shall be at least one wall return inlet for each 10 feet of stairway width, recessed bench length or swimout length or width or fraction thereof.

7. Bottom return inlets shall be flush with the basin floor.

8. Bottom return inlets shall be considered to have an area of influence of a radius of 10 feet.

Note: See the appendix for further explanatory material.

9. Wall return inlets may not extend more than one inch into a basin.

10. Except for leisure rivers, there shall be a wall return inlet within 5 feet of each corner of a basin wall.

(c) *Suction outlets*. 1. Suction system flow through main drains shall be designed to accommodate 100 percent of the circulation flow rate in accordance with all of the following:

a. All basins shall be provided with a suction outlet in the lowest point of the basin in the floor or the wall.

Note: For main drains installed in diving wells, see Table 90.06-1

b. Where 2 or more drains connect within the circulation system, all drains minus any one in the set shall be designed to collectively convey 100 percent of the circulation flow rate.

c. The distance between the bottom of the suction outlet grate and the opening of the suction pipe shall equal or exceed at least 1.5 times the inside diameter of the suction pipe.

2. Suction outlet grates shall comply with at least one of the following requirements:

a. A single grate having at least one dimension of length, width, diagonal or diameter that is at least 36 inches.

b. Two or more grates of any size separated from other suction outlets by at least 3 feet.

3. Suction systems shall be designed so that the maximum flow rates are not exceeded under operating conditions.

4. Suction grates and covers shall be listed as conforming to ASME/ANSI A112.19.8.

5. The maximum opening of any suction grate shall prevent the passage of a ½-inch sphere.

6. a. Barriers shall be provided on all wave pool caisson walls.

b. Openings in caisson barriers shall prevent the passage of a 4-inch sphere.

7. Vacuum fittings are not permitted within public swimming pools or water attractions.

(d) *Surface skimming systems*. 1. Surface skimming systems shall be included in the design of and installed to serve all basins.

2. Surface skimming systems shall be designed and constructed to skim the basin surface when the water level is maintained within the operational parameters of the system's rim or weir device.

3. Skimmers shall be located so as to maintain effective skimming action.

4. Skimmer covers located on a walking surface shall be designed and installed to comply with all of the following requirements:

a. The skimmer cover shall be appropriately seated.

b. The skimmer cover shall be slip resistant.

c. The skimmer cover shall be sufficiently strong so as to withstand normal use.

d. The skimmer cover may not create a tripping hazard.

5. Equalizer lines shall have an anti-entrapment cover or other entrapment protection in accordance with ASME/ANSI A112.19 when suction fittings are located in the wall of a basin.

6. Where automatic skimming devices are used as the sole overflow system, at least one surface skimming device shall be provided for each 500 square feet or fraction thereof of water surface area.

7. Circulation systems shall be designed to carry 100 percent of the rated circulation volume through the skimmers.

8. The flow rate through automatic skimmers shall be no less than 3 gallons per minute per inch of skimmer weir width.

Note: The maximum flow rate through skimmers is determined by the ANSI/NSF 50 rating.

9. Acceptable options for surface skimming systems shall be in accordance with Table 90.15-3.

Table 90.15-3
Acceptable Surface Skimming Systems

Pool Type	Acceptable Surface Skimming Systems
Swimming, whirlpools	Gutters, auto skimmers
Activity	Auto skimmers, zero-depth trench, gutters
Leisure River	Single or multiple weirs, gutters, zero-depth trench or auto skimmers
Plunge	Auto skimmers, zero-depth trench, gutters, weirs
Vortex	Skimmers are not allowed in the side area
Wave	Zero-depth trench, skimmers, gutters, perimeter devices
Zero-Depth Entry	Zero-depth trench, skimmers, gutters, perimeter devices.
Other	As approved by the department

10. When a gutter skimming system is used, the system shall be connected to a circulation system with an adequate surge capacity to permit all phases of operation.

11. a. Except as provided in subd. 11. b., a zero-depth trench shall extend continuously from within 3 feet of one wall of the basin to within 3 feet of the opposite wall of the basin.

b. Where the entire perimeter of the basin consists of a zero-depth entry, 50 percent shall be evenly-distributed zero-depth trench.

Comm 90.16 Mechanical systems. (1) ELECTRICAL. Electrical components shall comply with the requirements of ch. Comm 16.

(2) WATER HEATERS. (a) Water heating equipment shall comply with chs. Comm 64 and 65.

(b) A thermometer accurate to within plus or minus 2°F of the operating range shall be installed in the circulation piping.

(c) The thermometer required in par. (b) shall be accessible for reading.

(d) The use of a toxic solution, such as, but not limited to, heat transfer fluid in a single-wall heat exchanger, is prohibited.

(e) Water heaters and hot water storage tanks shall be equipped with temperature and pressure relief valves in accordance with ch. Comm 84.

(3) ILLUMINATION. (a) Artificial lighting shall be provided so that all areas of the pool, including the bottom shall be visible when the pool or water attraction is used during periods of low illumination.

(b) For outdoor facilities, overhead lighting shall provide a minimum of 3 foot-candles of illumination at the water surface and on the deck.

(c) For indoor facilities, overhead lighting shall provide a minimum of 10 foot-candles at the water surface and on the deck.

(d) 1. Except as permitted in subd. 2., underwater lighting shall provide a minimum of ½ watt incandescent light per square foot of water surface area or equivalent.

2. If overhead lighting provides a minimum of 15 foot-candles illumination at the water surface, no underwater lighting is required.

(e) For exterior facilities, areas that are designed to operate during periods of low illumination shall be provided with sufficient emergency lighting to permit evacuation of the facility.

(f) For exterior facilities, emergency lighting shall activate within 10 seconds of lighting failure.

(4) WATER SUPPLY. (a) *Water quality*. The water supply for all public swimming pools and water attractions shall meet the water quality requirements as listed in ch. Comm 82, Table 82.70-1.

Note: Refer to Appendix A-90.20 (12) for pertinent sections of ch. Comm 82, Table 82.70-1.

(b) *Cross connection control*. Protection of the potable water supply shall comply with s. Comm 82.41.

(c) *Makeup water quality*. Makeup water to maintain the water level in all public swimming pools and water attractions and water used as a vehicle for disinfectants or other pool chemicals, for pump priming or for other such additions shall meet the requirements listed in ch. Comm 82, Table 82.70-1.

Note: Refer to Appendix A-90.20 (12) for pertinent sections of ch. Comm 82, Table 82.70-1.

(d) *Spray feature water*. Water used for spray features or water falling onto patrons shall be disinfected if supplied from a whirlpool or wading pool basin.

(5) WASTEWATER DISPOSAL. Wastewater discharges shall be in accordance with ss. Comm 82.38 Table 82.38-1 and 82.33.

Note: See appendix for a reprint of Table 82.38-1.

(6) EQUIPMENT ROOM. (a) An equipment room or equipment enclosure shall be provided to serve all public swimming pools and water attractions.

1. An equipment room shall be ventilated in accordance with ch. Comm 64.

2. An equipment room shall be drained.

3. An equipment room shall be accessible for operation and maintenance of equipment.

(b) The doors to all rooms in which a chlorine gas feeder is located or a cylinder of compressed chlorine gas is located or stored shall be labeled "DANGER-CHLORINE GAS" in clearly readable letters.

Comm 90.17 Sanitizing equipment. (1) EQUIPMENT STANDARDS. (a) Sanitizing equipment shall be certified to comply with the requirements of NSF/ANSI 50.

(b) A chemical system that provides the residual required by ch. HFS 172 shall be installed when an alternative means of disinfection is proposed.

Note: Alternative disinfection systems include ultraviolet light, ozone and electrolytic chlorine generation, but are not limited to those systems.

(c) Sanitizing equipment shall be capable of introducing a sufficient quantity of a U.S. EPA-approved sanitizer for normal operating procedures.

Note: See ch. HFS 172 for disinfectant concentration and efficacy requirements.

(d) Sanitizing equipment shall be certified by a nationally recognized testing laboratory.

(2) SANITIZING EQUIPMENT. (a) Skimmer baskets may not be used as chemical feeders.

(b) An automatic controller for controlling the sanitizing equipment shall be installed on all public swimming pools and water attractions.

(c) The automatic controller shall include a flow sensor installed so that the chemical feed pump will not operate without a return flow to disburse the chemical.

(d) The automatic controller shall be electrically interlocked with the circulation pump control circuit.

Note: Pool operation requirements are found in ch. HFS 172, Wis. Adm. Code.

(e) The automatic controller and circulation pump shall have separate disconnect switches.

Comm 90.18 Safety features. (1) ROPE AND FLOAT LINES. (a) 1. Except as permitted in subd. 2., a rope and float line shall be provided in all basins:

a. To separate activity areas, such as plunge areas, climbing walls, pad walks and other areas where patron activity may harm others.

b. To restrict access to the caisson wall in wave pools.

c. To identify water depth greater than 5.5 feet in combination pools and activity pools.

2. Rope and float lines are not required in areas where the department determines that the installation of the rope and float line would constitute a safety hazard.

(b) For water depth, the rope and float line shall be located one foot toward the shallow end for each location where the purpose of the rope and float line is to mark a depth change.

(c) A 4-inch wide boundary line of contrasting color shall be installed on the basin walls and floor corresponding to the location of the rope and float line.

(d) For wave generators, the rope and float line shall be located a minimum of 5 feet from the caisson wall.

(e) The rope and float lines shall be securely fastened to wall anchors.

(f) Rope and float lines shall be of sufficient size and strength so as to provide temporary support for a pool patron in the water.

(g) Rope and float lines shall be installed with limited slack so as to provide temporary support for a pool patron in the water.

(2) DEPTH MARKERS. (a) Depth markers shall be installed on all public swimming pools and water attractions that incorporate a water depth over 6 inches.

(b) Depth markers shall be installed at the maximum and minimum water depths and at all points of slope change.

(c) 1. Except as provided in subd. 2., water depth markers shall be installed around the perimeter of the basin at intervals no greater than 25 feet and at lesser intervals when indicating a change in water depth not to exceed 2 feet.

2. Water depth markers for leisure rivers shall be located every 25 feet on alternate side walls and at all entry points.

(d) 1. Depth markers shall be indicated in feet, inches or feet and inches and when abbreviated so indicated as “FT” or “IN.”

2. Depth markers shall be plainly and conspicuously installed at all of the following locations:

a. On the vertical basin wall except where no portion of the basin wall is visible and above the waterline.

b. On the top of the coping or edge of the deck next to the basin.

Note: Additional depth markings may also be indicated in metric.

(e) When additional depth markers are indicated in metric, “meters” shall be abbreviated as “M.”

(f) All water depths indicated on depth markers shall be the depth at the location of the depth marker.

(g) All depth markers installed on vertical basin walls shall be located so as to be read from the waterside.

(h) Depth markers installed on decks shall be located no greater than 18 inches from the basin edge and positioned so as to be read while standing on the deck facing the water along the affected perimeter.

(i) All depth markers installed on decks shall be of slip resistant materials.

(j) The minimum height of depth marker characters shall be 4 inches. Characters shall be clearly visible and of permanent contrasting color to the background on which applied.

(k) Depth markers for water deeper than 5 feet shall indicate the maximum basin depth.

(3) WARNING MARKERS (a) Pools or water attractions having water depths of 5 feet or less shall be provided with diving prohibition markers located on the deck at intervals of no more than 25 feet.

(b) Diving prohibition markers shall be printed with the text, “No Diving.”

(c) The “No Diving” text shall be at least 4 inches in height.

(d) Diving prohibition markers shall include the international “No Diving” symbol.

(e) “No Diving” text and the “No Diving” symbol shall be clearly visible and of a contrasting color to that of the marker background.

(4) BARRIERS. (a) Except as provided in par. (b), public swimming pools, water attractions and water attraction complexes shall be separated from surrounding property by a barrier consisting of a fence, wall or building.

(b) Independent interactive play attractions are not required to be surrounded by a barrier.

(c) A fence or wall shall be constructed so as to afford no external handholds or footholds.

(d) The barrier shall be at least 5 feet in height.

(e) Gates in the barrier shall be equipped with a self-closing, lockable closure mechanism at a height of at least 54 inches from the bottom of the gate.

(f) Fences serving as barriers shall have no opening greater than 4 inches in width or diameter.

(g) The bottom of a fence or wall shall be a maximum of 4 inches from grade.

(h) Doors in fences and walls shall be self-closing and lockable.

(5) EMERGENCY STOP BUTTONS. Wave action pools, vortex pools, water slides and leisure rivers shall have emergency stop buttons accessible to designated staff as outlined in a staffing plan for the purpose of stopping the propulsion system.

Note: See the electrical code, ch. Comm 16, for location and installation requirements.

Comm 90.19 Toilet room and sanitary facilities. (1) GENERAL REQUIREMENTS. (a) Toilet and handwash facilities, and public drinking fountains shall be located so to be accessible by a length of paved walking surface no greater than 300 feet from the nearest rim of the most distant public swimming pool or water attraction.

(b) Showers and dressing facilities shall be provided and located on the premises and accessible by a length of paved walking surface.

Note: All applicable building requirements of chs. Comm 61 to 65 shall apply to the construction of bathhouses.

(c) 1. The floors of toilet rooms and dressing areas serving public swimming pools or water attractions shall have a smooth, hard, nonabsorbent, slip resistant surface.

2. A smooth, hard, nonabsorbent surface shall extend upward on the walls at least 6 inches.

3. Junctions between walls and floors shall be coved.

4. When floor drains are installed, drain openings shall be ¼- inch or less in width or diameter.

(2) DRAINAGE OF COVERED AREAS. (a) Floor drains shall be installed in toilet rooms and locker rooms where sanitary fixtures are located and where the room door is adjacent to the deck or adjacent to the impervious walkway draining to the deck.

(b) Floor drain openings shall be ¼-inch or less in width or diameter.

(c) Floors shall be pitched to drain.

(3) WALLS. Toilet room and locker room walls shall have a smooth, hard, nonabsorbent surface to a height of at least 4 feet above the floor.

(4) LOCKERS. Lockers shall be set either on solid masonry bases at least 4 inches high or on legs extending at least 10 inches above the floor.

(5) REQUIRED NUMBER OF SANITARY FIXTURES. (a) The required minimum number of toilets, lavatories and showers shall be provided in accordance with Table 90.19.

(b) 1. Except as provided in subd. 2., the minimum number of drinking fountains shall be provided adjacent to the required deck in accordance with Table 90.19.

2. For bed and breakfast establishments, tourist rooming houses or private guest rooms, a source of potable drinking water shall be provided in the enclosure by a fixture installed as per ch. Comm 82 or by providing commercially bottled drinking water.

(6) DIAPER CHANGING STATION. (a) Except as permitted in par. (b), all toilet rooms providing the required sanitary fixtures shall be equipped with a diaper changing station.

(b) Diaper changing stations are not required in toilet rooms exclusively serving therapy pools.

(7) SPECTATOR ACCESS. Spectator walkways, restrooms, dressing rooms and seating areas shall be separated from pool patron required deck.

Table 90.19

MINIMUM NUMBER OF SANITARY FIXTURES REQUIRED AT PUBLIC POOLS AND WATER ATTRACTIONS

Facility (example of location and type)[a]	Cumulative Area of Surface Water (in square feet)	Number of							
		Public Toilets		Public Urinals	Public Lavatories		Public Showers		Public Drinking Fountains
		F	M	M	F	M	F	M	
1. Swimming pools, wading pools and whirlpools in conjunction with sleeping or dwelling units having plumbing, except for items 2. to 5. No open swim lessons permitted. (i.e., apartment, hotels, motels, condos and mobile home parks)	< 2000	One unisex		0	One unisex		0	0	1[a]
	2000 – 7500	1	1	0	1	1	1	1	1
	> 7500	See note [b] below for requirements.							
2. Swimming pools, wading pools and whirlpools without living units, except for items 3. to 5. Swimming pools, wading pools and whirlpools with sleeping or dwelling units where open swim or lessons are permitted and water attractions where lessons are conducted. (i.e., municipal pools and campgrounds)	< 2000	1	1	0	1	1	1	1	1
	2000 – 3999	3	1	2	1	1	2	2	1
	4000 – 5999	4	2	2	2	2	4	4	1
	6000 – 7499	4	2	2	2	2	5	5	1
	7500 – 8999	8	2	2	3	2	5	5	2
	9000 – 9999	10	2	3	4	3	6	6	2
	10000 – 12999	12	3	3	4	3	6	6	2
	13000 – 15000	14	3	4	5	4	7	7	3
	>15,000	See note [b] below for requirements.							
3. Water attractions and water attraction complexes with sleeping or dwelling units. No open swim or lessons permitted. Use 300 sq. ft. for slides without basins (i.e,. activity pools, waterslide plunge pools, leisure river or tubing pools and wave pools)	< 7500	1	1	0	1	1	1	1	1
	7500 – 9999	4	1	1	2	2	2	2	2
	10000 – 14999	8	2	2	2	2	2	2	2
	15000 – 22499	12	3	3	3	3	3	3	3
	22500 – 29999	12	3	3	3	3	3	3	3
	30000 – 37500	16	4	4	4	4	4	4	4
	>37500	See note [b] below for requirements.							
4. Water attractions and water attraction complexes without sleeping or dwelling units. No lessons permitted. Use 300 sq. ft. for slides without basins. (i.e., activity pools, waterslide plunge pools, leisure river or tubing pools and wave pools)	< 7500	2	1	1	1	1	1	1	1
	7500 – 9999	6	2	1	2	2	2	2	2
	10000 – 14999	8	2	2	2	2	2	2	2
	15000 – 22499	12	3	3	3	3	3	3	3
	22500 – 29999	16	4	4	4	4	4	4	4
	30000 – 37500	20	5	5	5	5	5	5	5
	>37500	See note [b] below for requirements.							
5. Splash pad (independent of any other pool or attraction)		One unisex		0	One Unisex		One rinse off shower		1
	Patron Load								
6. Therapy/exercise pools.	Up to 10	One Unisex							
	11 – 20	2	1	1	1	1	2	2	1
	21 – 30	2	1	1	2	2	3	3	1
	> 30	Per department approval							

F = female; M = male; < = less than; > = greater than

[a] For pools with spectator areas, see Appendix A-90.16 regarding chs. Comm 61 to 65 that contain the requirements for sanitary facilities.

[b] For water attractions in excess of 37,500 sq ft., use the following additions:

- For each 7,500 sq. ft. or fraction thereof add one sanitary unit – 0.7 male water closets, 1.0 male urinal, 0.85 male lavatories, 1.0 male showers, 0.6 drinking fountains, 4.0 female water closets, 1.0 female lavatory and 1.0 female shower.

For pools in excess of 7,500 sq. ft. and Type 1 above, and for pools in excess of 15,000 sq. ft. and Type 2 above, use the following additions:

- For each 4,000 sq. ft. or fraction thereof, add one sanitary unit – 1.0 male water closet, 1.0 male urinal, 1.0 male lavatory, 4.0 male showers, 1.0 drinking fountain, 4 female water closets, 1.0 female lavatory, 4.0 male showers.

For the requirements listed for additional sanitary facilities each fraction represents an additional fixture.

Subchapter III – Wading Pools, Whirlpools, Interactive Play Attractions and Cold Soak Pools – Special Requirements.

Comm 90.20 Wading pools. Wading pools shall be in compliance with the applicable requirements of ss. Comm 90.04 to 90.19 and with this section:

(1) The maximum depth of water in a wading pool may not exceed 24 inches.

(2) The maximum depth of water at the accessible perimeter of a wading pool may not exceed 18 inches.

(3) A piping system may be used to allow a wading pool to be filled using pool water from an adjacent basin, other than a whirlpool, when the water quality meets the requirements in ch. HFS 172 prior to use.

Note: See the appendix for filling options.

(4) Obstructions extending from the walls or bottom of the wading pool are not permitted except with the approval of the department based on design safety.

Comm 90.21 Whirlpools and cold soak pools. Whirlpools and cold soak pools shall be in compliance with the applicable requirements of ss. Comm 90.04 to 90.19 and with this section:

(1) All walls within 5 feet of the whirlpool or cold soak pool shall be constructed of impervious material to a height of at least 3 feet above the deck.

(2) (a) 1. Except as provided in subd. 2. or 3., an observation window shall be provided if a whirlpool is located in a separate, enclosed room to allow the owner or operator a clear observation of the whirlpool or cold soak pool from outside the room.

2. A private guest room equipped with a telephone.

3. A whirlpool or cold soak pool room where a camera and remote observed monitor is provided.

(b) Where a camera is provided as in par. (a) 3., signage shall be installed to notify patrons of the camera's use.

(3) (a) Except as provided in par. (b), whirlpools or cold soak pools may not be located:

1. Within 11 feet of a basin where the water exceeds 5 feet in depth.

2. Within 11 feet of a basin whose water depth is six inches deeper than that of the whirlpool or cold soak pool.

(b) Whirlpools or cold soak pools may be located adjacent to a pool or water attraction basin if a common wall constructed in accordance with s. Comm 90.11 (5) separates the two basins.

(4) The maximum water depth of a whirlpool or cold soak pool shall be 4 feet measured from the water line.

(5) If the water depth exceeds 24 inches in a whirlpool or cold soak pool, stairs shall be provided.

(a) Stairways shall be recessed and may not extend past a bench installed in the basin.

Note: See appendix for more information.

(b) Recessed stairways shall have a minimum unobstructed horizontal tread depth of 10 inches, with a riser height no greater than 12 inches, and shall be uniform except that when the bottom tread is used for a seat, the bottom riser may be a maximum of 14 inches above the whirlpool floor.

(c) The minimum width of the stairways shall be 15 inches.

(d) Handrails shall be securely mounted on each side of stairways.

(e) The leading edge of deck-mounted handrails shall be located within 3 inches horizontally measured from the vertical plan of the bottom riser.

(f) The two handrails shall be separated a maximum of 3 feet.

(6) A whirlpool water agitation system shall be separate from the water circulation system.

(7) A manually controlled, 15 minute maximum, agitation system timer shall be provided within the pool enclosure.

(8) An emergency stop shall be provided that is tied to the agitation system and circulation system.

Note: See the electrical code for installation and locating requirements.

(9) (a) Except as provided in par. (b), the coping around the perimeter of the whirlpool or cold soak pool may extend vertically a maximum height of 3 inches.

(b) 1. Transfer walls may extend 16 to 19 inches above the deck.

2. Transfer wall widths shall be 12 to 16 inches measured at the top of the wall.

(10) A piping system may be used to allow a whirlpool or cold soak pool to be filled using pool water from an adjacent basin, other than a whirlpool when the water quality meets the requirements in s. HFS 172.14 (4) prior to use.

Comm 90.22 Interactive play attractions. Interactive play attractions shall be in compliance with the applicable requirements of ss. Comm 90.04 to 90.19 and with this section

(1) DESIGN AND MATERIALS. (a) All materials for walking surfaces on an interactive play attraction shall be slip-resistant.

(b) 1. A splash zone of an interactive play attraction shall be sloped to drain to the surge tank or pool within the same basin.

2. All exterior walking surfaces shall be sloped to drain away from the splash zone.

(2) WATER SUPPLY, PIPING, CIRCULATION AND FILTRATION. (a) The circulation system of an interactive play attraction may not be connected with the feature pump system unless otherwise approved by the department.

(b) All nozzles that spray from the ground shall be flush with the floor so as to not create a tripping hazard.

(c) The total water volume of a balance tank including associated piping shall be at a minimum of 4 times the combined flow rate of all the attraction pumps and of a sufficient volume so as to allow operation through all cycles of filtration operation.

(d) All aboveground piping shall automatically drain. Gravity drains shall be of a capacity of at least 125 percent of the discharge.

(e) The suction intake of the circulation pump shall be located in the lowest point of the balance tank.

(3) VEGETATION. Plants or vegetation may not be located in the splash zone area.

Subchapter IV – Play Features and Slides

Comm 90.30 Play features. (1) GENERAL. Structures and devices not intended for patron activities such as climbing, walking and hanging shall be either designed or supervised to prevent such action.

(2) IN-WATER PLAY FEATURES. (a) In-water play features installed shall be subject to this subsection.

Note: Examples of in-water play features include, but are not limited to, floating boats and trucks, floatable walks, floatables, spray pad features not in conjunction with a pool or water attraction with a circulation system and other permanently installed features.

(b) 1. Floating play features may not be installed in pools with water depths of less than 36 inches.

2. a. Except as provided in subd. 2. b., a minimum 3 feet of water depth shall be maintained at least 6 feet in every direction from any tethered play feature.

b. A tethered play feature may be located within 6 feet of a wall when that portion of the wall is padded to a point 6 feet from the play feature.

Note: Padding need only cover the wall above the waterline.

(c) The means of anchoring of tethered play features shall be configured in such a manner as to minimize circumstances of possible entrapment of patrons, bodies, hair, limbs or appendages when in contact with any element of the play feature or its anchors.

Note: The use of jacketed chains or cables meets this requirement.

(d) All in-water play features shall be designed and installed to prevent injury to the user and constructed so as not to create a safety hazard.

(e) 1. Except as permitted in subd. 2., the length and width of a tethered, in-water play feature shall not exceed 42 inches.

2. A tethered, in-water play feature may exceed 42 inches in length when the width, excluding appendages, does not exceed 24 inches.

3. The height of a tethered, in-water play feature shall not exceed 20 inches.

(f) 1. When more than one pad walk is located in the same pool basin, a minimum separation of 10 feet between pad walks shall be provided.

2. All deck or basin obstructions within 6 feet of a pad walk shall be padded or encased so as to protect users from abrasion, laceration or contusion.

(g) Two floatables, other than two pads within a pad walk, shall be separated by a minimum of 10 feet.

(3) ON-DECK PLAY FEATURES. (a) Play features permanently installed on decks shall be designed and installed to minimize injury to the user and constructed so as not to create a safety hazard.

Note: Examples of on-deck play features include basketball hoops, volleyball nets and other water games.

(b) Spray features may not be located so as to spray on the required deck area of a basin.

Comm 90.31 Slides. (1) GENERAL. All slides installed as an appurtenance to a public swimming pool or water attraction shall be designed, manufactured and permanently installed so as to provide a safe and healthy environment for the rider and other occupants of the facility.

Note: For accessibility information, refer to the final accessibility guidelines for recreational facilities, Federal Register, Vol. 67, No. 170, as published Tuesday, September 3, 2002.

(2) DESIGN AND MANUFACTURING. (a) The total water volume of a separate balancing tank serving runout slides shall be a minimum of 2 times the combined flow rate of the pumps or of a sufficient volume based on velocity and time of the propulsion system and backwash requirements.

(b) Pool slides, drop slides and waterslides shall be so designed that parts with external surfaces that may come in contact with a person using the slide are assembled, arranged and finished so that they are smooth and continuous with and will not cut, pinch, puncture or cause an abrasion to any person.

(c) All slide flumes shall be designed and constructed so as each person using the waterslide remains inside the flume path during normal use.

(d) All curves, turns and tunnels on the path of a flume shall be designed and constructed as not to present a hazard to any person using the slide under normal use.

(e) Pool slides, drop slides and waterslides shall be designed to support the intended use.

(f) On-site constructed towers, stairs, platforms and elevated decks providing access to slides shall conform to chs. Comm 61 and 62.

(g) 1. Slides installed in facilities without a lifeguard staffing plan shall occupy no more than 10 percent of the pool perimeter.

2. Slide structures shall have a maximum individual obstruction width of 20 feet.

(h) For waterslides and runout slides, all closed curved flumes shall be a minimum of 32 inches in diameter.

(i) For all other slides listed in Table 90.31-1, the slide terminus shall be designed to not allow riders to cross into the path of another rider.

(3) INSTALLATION. (a) All slide installations shall comply with the parameters as specified in Table 90.31-1.

Note: See the appendix for further explanation.

(b) Except where a lifeguard staffing plan has been approved by the Department of Health Services, children's slide obstructions shall comply with all of the following requirements:

1. The side view of the obstruction, as viewed from any point, shall be less than 50 square feet.

2. The square footage of the obstruction shall be measured to a height of 6 feet above the water line.

3. Individual obstructions shall have at least a 10-foot horizontal separation.

4. No more than 20 percent of the pool basin shall be occupied by obstructions.

Table 90.31-1

INSTALLATION PARAMETERS BY SLIDE TYPE[a]

Slide Type	Maximum Slide Height Measured Vertically From the Slide Entrance (in feet)	Slide Terminus Drop to Water Level (in inches)	Water Depth Allowed for Slide Installation (in feet)	Minimum Clear Space In Front of Slide Terminus and Pool Wall (in feet)	Minimum Distance from Slide Flume or Entry to Side Obstructions, unless protected (in feet)	Minimum Separation Distance Between Slides in Same Structure Measured from Side of Sliding Surface, unless protected (in feet)	Maximum Overhang Distance for Deck-mounted Slides (Slide terminus extension into pool) (in feet)
Children's slide	≤ 4 to slide terminus	≤ 6	≤ 2	≥ 7.5	≥ 4	As per manufacturer's recommendation	N/A
Pool slide	≤ 4 to deck	≤ 6	≤ 2	≥ 7.5	≥ 4	As per manufacturer's recommendation	N/A
Pool slide, discharging into water ≤2 feet deep	> 4 and ≤ 6 to deck	≤ 6	≤ 2	≥ 10	≥ 5	As per manufacturer's recommendation	2
Pool slide, discharging into water ≤2 feet deep	> 6 to deck	Not permitted.					
Pool slide, installed in water ≥ 3 feet deep	≤ 6	≤ 6	≥ 3	≥ 15	≥ 5	≥ 5	≤ 2
Pool slide, installed in water ≥ 3 feet deep	> 6	≤ 6	≥ 3	≥ 20	≥ 5	≥ 5	No maximum
Drop slide, short drop	No limitation	20 to < 30 [b]	3.5 to 6 [b]	≥ 15	≥ 5	≥ 5	No maximum
Drop slide, long drop	No limitation	30 to 60	6 to 12 [b]	≥ 15	≥ 5	≥ 5	No maximum
Waterslide[c]	No limitation	≤ 6 or as per manufacturer's recommendation	≥ 3	≥ 20	≥ 5[e]	≥ 5	No maximum
Runout slide	No limitation	N/A	N/A	For deceleration area, as per manufacturer's recommendation	≥ 5[e]	≥ 3	—

N/A = not applicable; ≥ = greater than or equal to; ≤ = less than or equal to.

[a] Slide installation as per manufacturer's requirements if more stringent. For slide types not specifically listed in this table, contact the department.

[b] Interpolation would be used for increasing drop and increasing depth proportionally.

[c] Water slides with a drop shall comply with drop slide requirements in this table.

[d] No minimum separation distance where slide exit prevents exiting over adjacent slide path

[e] Minimum distance may be reduced if slide terminus is designed and installed to restrict patron exit angle.

(4) SLIDE FLUME WATER. (a) Except for waterslides, water for flume lubrication shall be a maximum of 10 percent of the circulation flow.

(b) The balance tank for runout slide flume lubrication systems shall be at a minimum of 2 times the combined flow rate of the water attraction pump and of a sufficient volume to allow operation through all cycles of filtration operation.

Subchapter V – Incorporation of Standards

Comm 90.40 Incorporation of standards by reference. (1) CONSENT. Pursuant to s. 227.21 (2), Stats., the attorney general has consented to the incorporation by reference of the standards listed in sub. (3).

Note: Copies of the adopted standards are on file in the offices of the department and the legislative reference bureau. Copies of the standards may be purchased through the respective organizations listed in Tables 90.40-1 to 90.40-2.

(2) ALTERNATE STANDARDS. (a) 1. Alternate standards that are equivalent to or more stringent than the standards referenced in this code may be used in lieu of the referenced standards when approved by the department or if written approval is issued by the department in accordance with par. (b).

2. Upon receipt of a fee as specified in ch. Comm 2 and a written request, the department may issue an approval for the use of the alternate standard.

3. The department shall review and make a determination on an application for approval within 40 business days of receipt of all forms, fees and documents required to complete the review.

(b) Determination of approval shall be based on an analysis of the alternate standard and the standard referenced in this code, prepared by a qualified party.

(c) The department may include specific conditions in issuing an approval, including an expiration date for the approval. Violations of the conditions under which an approval is issued shall constitute a violation of this code.

(d) If the department determines that the alternate standard is not equivalent to or more stringent than the referenced standard, the request for approval shall be denied in writing.

(e) The department may revoke an approval for any false statements or misrepresentations of facts on which the approval was based.

(f) The department may reexamine an approved alternate standard and issue a revised approval at any time.

(3) ADOPTION OF STANDARDS. The standards referenced in Tables 90.40-1 to 90.40-2 are hereby incorporated by reference into this chapter.

Note: The tables in this section provide a comprehensive listing of all of the standards adopted by reference in this code. For requirements or limitations in how these standards are to be applied, refer to the code section that requires compliance with the standard.

Table 90.40-1

ANSI	**American National Standards Institute, Inc.** **11 W 42nd Street** **New York, New York 10036** **Phone: (212) 642-4980** **Web: www.ansi.org/public/std_info.html**
Standard Reference Number	**Title**
ANSI/NSF 50-2001	Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs

Table 90.40-2

ASME	**American Society of Mechanical Engineers** **3 Park Avenue** **New York, New York 10016-5990** **Phone: (800) 843-2763** **Web: www.asme.org/catalog/**
Standard Reference Number	**Title**
ANSI/ASME A112.19.8-2007	Suction Fittings for Use in Swimming and Wading Pools, Spas and Hot Tubs

END

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EFFECTIVE DATE

Pursuant to s. 227.22 (2)(intro.), Stats., these rules shall take effect on the first day of the month following the publication in the Wisconsin Administrative Register.

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