TEXT OF SECTION 2.13 INLETS/OUTLETS

2.13 Inlets/Outlets – Suction outlets that are a part of the filtration system shall be arranged to produce a uniform circulation of water and maintain the distribution of sanitizer residual throughout the pool. Suction outlets for pools, spas and other water recreation attractions shall be designed to protect against entrapment and not constitute a hazard to the user. Any suction outlet system for a pool, spa or water recreation attraction circulation or filtration system, booster system, automatic cleaning system, water feature circulation system, etc. shall be designed to protect against suction entrapment, evisceration, or hair entrapment/entanglement hazard and shall comply with the following:

2.13.1 All grates, covers and fittings on suction outlets shall comply with ASME/ANSI A112.19.8MR96 "Suction Fitting for use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances."

2.13.2 There shall be a minimum of two hydraulically balanced suction outlets for each pump suction line unless the grate is eighteen inches by twenty three inches (18"X23") or larger. Multiples sets of pump suction lines shall be permitted into two or more suction outlets as long as they are hydraulically balanced and meet the requirements these rules and regulation and the code. The distance between suction outlets shall be a minimum of three feet.

2.13.3 At least one set of filter recirculation outlets shall be located at the deepest point of the pool. Spas shall have at least one of the drains at the deepest point of the floor and the second can be on the floor or in the wall. No means of isolating suction outlets is permitted that could allow one suction outlet to serve as the sole source of water to a pump unless the outlet has at least one dimension that is eighteen inches by twenty three inches (18"X23") or larger. Suction outlets not related to the filtration system may be located in the floor or walls of the body of water.

2.13.4 Water velocity through outlet grates shall not exceed 1.5 feet per second. Water velocity through anti-vortex suction outlet covers shall not exceed six feet (6') per second. Suction outlets exceeding 1.5 feet per second are permitted provided each suction outlet has a cover that has been tested and approved for such velocities by AMSE/ANSI A.112.19.9M R96. The maximum velocity in the pump suction hydraulic system shall not exceed 6 feet per second when 100 % of the pump flow comes from the main drain system and any suction fitting in the system in completely blocked. The flow through the remaining suction grate outlet or outlets shall not exceed 1.5 feet per second.

2.13.5 All suction outlet covers, grates, anti vortex outlets, etc. shall be secured in such a way that they can be removed only with the use of a tool.

2.13.6 The main drain shall be plainly marked by a contrasting color on all pools.

2.13.7 Outlets on pools wider than 20 feet shall be spaced not less than three feet (3'), nor more than thirty feet (30') apart, no more than fifteen feet (15') from side walls and shall be hydraulically balanced.

2.13.8 The width of grate openings shall not exceed ½" in suction outlets.

2.13.9 A pool shall not be operated if any outlet grate or cover is missing, broken, or secured in such a way that it is removable without the use of tools.

2.13.10 A hydrostatic relief valve shall be provided for in-ground pools.

2.13.11 Grates that exceed the size covered by ASME/ANSI A112.19.8M R96 must comply with all other aspects of Section 2.13.

2.13.12 Existing facilities shall have the suction outlet system serving the pool, spa, or water recreation attraction that does not constitute an entrapment hazard, meeting all requirements of Section 2.13 of the code. All existing spas, pools, and/or water recreation attractions shall comply by December 20, 2008. This work is considered a repair by the Department to fix a potential safety hazard. The outlet system shall be modified with one of the following:

A. A single outlet equipped with an eighteen by twenty-three inches (18"X23") or larger grate.
B. A minimum of two outlets spaced at least three feet (3) apart.
C. A single outlet protected by a safety vent pipe or a safety vacuum release system.
D. Or other method approved by the Director.