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How the ANSI/APSP-7 Standard for Suction Entrapment Avoidance Strengthens the ICC Codes

On September 21, 2008, in Minneapolis, MN, code official members of the International Code Council (ICC) overwhelmingly approved the proposal of APSP to incorporate the ANSI/APSP-7 Standard for Suction Entrapment Avoidance into both the International Building Code (IBC) and the International Residential Code (IRC), Appendix G.

Question #1: What are the ICC Codes?

Answer: The International Code Council (ICC) publishes the International Residential Code (IRC) for residential construction and the International Building Code (IBC) for public construction. Both model codes address numerous aspects of construction, a small but significant portion of which relates to pools and spas.

Question #2: What changes have been made to these codes with regard to pool and spa safety?

Answer: As a result of the September 2008 vote at the ICC final action hearing, the *ANSI/APSP-7 2006 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins* is now incorporated by reference into the body of the 2009 IBC, and into Appendix G of the 2009 IRC. All entrapment language presently in the 2006 IBC and 2006 IRC is deleted and (by reference) replaced with the language in the ANSI/APSP-7 standard.

Question #3: What does this change mean for pool and spa safety and construction?

- Answer: It means that pools and spas will be safer and built to prevent ALL forms of entrapment ALL the time because--
 - 1. ANSI/APSP-7 specifically permits pools and spas to be built without submerged suction outlets or drains. No drains means no hazard to protect against.
 - 2. ANSI/APSP-7 requires that whenever submerged outlets are present they be protected by outlet covers that comply with the most current (2007) version of ASME/ANSI A112.19.8. The ANSI/APSP-7 standard

recognizes that there is no substitute for a compliant outlet cover because no other device can provide protection against all five recognized forms of entrapment.

- 3. ANSI/APSP-7 is the first standard that limits flow rate. The flow rate must not exceed 6 fps, or 3 fps when divided amongst dual outlets. This lower suction force helps prevent hair entrapment and limits the differential pressure when one of the multiple outlets is blocked.
- ANSI/APSP-7 provides for either multiple outlets or an unblockable outlet. Multiple outlets must be spaced three feet apart or on different planes so as to ensure that a single bather cannot block both outlets. Unblockable outlets must exceed 18"x 23" or be in the form of a channel drain.
- 5. ANSI/APSP-7 provides that where a single outlet is present, one must do one of the following: disable the drain, convert the outlet to a return, add a properly spaced second outlet, use a Safety Vacuum Release System (SVRS), vent line, gravity system, or any other method that would comply with ASME/ANSI A112.19.17- 2002, the standard for *Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems.*

Question #4: How do these changes compare to the language in the current and previous editions (2003, 2006) IRC and IBC?

- Answer: The adoption of ANSI/APSP-7 will enhance safety and make both of these ICC codes stronger and more demanding. The 2006 IBC and IRC provided no protection against hair entrapment, evisceration, or mechanical entrapment (jewelry, clothing). The 2006 codes addressed some forms of entrapment some of the time. The 2009 IBC and IRC are now designed to protect against all five forms of entrapment and will protect against all forms of entrapment all the time.
 - The IRC and IBC will now require covers that meet the new 2007 ASME/ANSI A112.19.8 drain cover standard, as required by the Virginia Graeme Baker Pool and Spa Safety Act. The 2007 cover standard requires improved fastening so covers are less likely to come loose, improved resistance to ultraviolet light, and improved resistance to hair entrapment. The 2006 codes allowed for covers that met the 1987 edition of the drain cover standard.
 - The IRC and IBC will now regulate water velocity. The 2006 codes did not. It's important for builders to be aware of this requirement. The regulation of water velocity is the most important protection against hair entrapment, which is a leading cause of entrapment injuries.
 - 3. The IRC and IBC will now specifically state that drains are optional. "No drains" means complete elimination of the hazard. Hence, new construction

can employ properly configured multiple outlets, an unblockable outlet, or no outlets. Previous IRC and IBC language was ambiguous and often interpreted in the field to require outlets.

4. The IRC and IBC will now join with Congress, the CPSC, many states, and ANSI/APSP-7 in stating that whenever a drain cover is broken or missing, the pool or spa must be closed to bathers. Because some forms of entrapment can occur even when the pump is off, approved drain covers are the only thing that can prevent all five forms of entrapment. There is no such thing as a backup to a broken or missing cover.

Question #5: How do the changes to the IRC and IBC compare to the new federal Virginia Graeme Baker Act?

Answer: By adopting ANSI/APSP-7, the 2009 IRC and IBC will now meet and exceed all of the requirements of the Virginia Graeme Baker Pool and Spa Safety Act. The adoption of the ANSI/APSP-7 standard brings the IBC and IRC in line with the Virginia Graeme Baker Act. The fact that the ANSI/APSP-7 standard is consistent with the Virginia Graeme Baker Act was an important consideration in the ICC adopting the ANSI/APSP-7 standard.

The 2006 IBC and IRC were in direct conflict with the VGB Act because they allowed for covers that complied with the 1987 ASME A112.19.8 drain cover standard, and for flat grates on drains in public pools that are 12"x12" or larger.

Question #6: How does the ANSI/APSP-7 Standard Compare to the Virginia Graeme Baker Act?

Answer: The ANSI/APSP-7 standard is consistent with the Virginia Graeme Baker Act. For a point-by point comparison review "Comparison of the Virginia Graeme Baker Act and ANSI/APSP-7 Standard for Suction Entrapment Avoidance," which is posted on the APSP website.

Question #7: Do the IRC and IBC have legal or binding effect?

Answer: The IRC and IBC are model codes and have effect only when adopted by a specific state. A vast majority of states typically adopt the IBC. While most states have also typically adopted the IRC, adoption of Appendix G (where the entrapment language is found) requires separate state action and only a few states have done this with the 2006 IRC. The APSP will be encouraging ALL states to adopt the 2009 IBC, the 2009 IRC, and Appendix G of the 2009 IRC as quickly as possible.

Question #8: Do the IRC and IBC require retrofitting of existing pools and spas?

Answer: No. The IRC and IBC only apply to new construction. The new federal law does require retrofitting of public facilities, however, and states that wish to apply for a grant from the CPSC under the Act may also require retrofitting of existing residential facilities.

Question #9: Will SVRS devices be required on dual drain pools?

Answer: As a result of the adoption of the ANSI/APSP-7 standard, the 2009 IBC and IRC will no longer require backup devices on dual drain pools. The ANSI/APSP-7 standard does not require backup systems for dual drains. This is one of the important changes in the 2009 IRC and IBC. However, SVRS devices are an appropriate *option* as a backup for single drain installations. The ANSI/APSP-7 standard and the Virginia Graeme Baker Act are consistent on this point.

APSP opposes mandating SVRS devices on multiple drain pools because testing and research confirm that while SVRS devices can help mitigate at least one form of entrapment injury in a single outlet installation, they do not reliably activate when there is more than one source of suction, even when one of those sources is blocked.

Question #10: How does the ICC action affect me as an APSP member?

Answer: APSP is the trade association for the pool, spa, and hot tub industry and the ANSI/APSP pool, spa and hot tub standards are an essential member benefit and a valuable resource. The ANSI/APSP standards set voluntary minimum guidelines that, when adopted by regulatory agencies, and by state and local governments, have the force of law.

The ICC adoption of the ANSI/APSP-7 is one of the most significant pool and spa safety advances ever. The ICC's action now sets the stage for significant safety improvements across the country as states begin to either adopt the 2009 ICC codes or adopt directly the ANSI/APSP-7 standard. It also creates greater consistency between federal and state law and protects the industry from conflicting requirements.

By following the ANSI/APSP-7 standard you can have a competitive edge in the marketplace and demonstrate your commitment to your customers' satisfaction and safety. You may also want to educate your local code officials about the ANSI/APSP-7 standard and be proactive in building a good working relationship with your local building officials and public health officials.

Question #11: I understand my state has adopted a prior version of the IRC and IBC, what does that mean?

Answer: All 50 states have adopted a prior edition of the IBC and 46 have adopted a prior edition of the IRC (but only a few have adopted Appendix G). Because different states have adopted different versions (2003, 2006), that's why APSP will urge states not to wait to adopt the new 2009 ICC codes, but to adopt the ANSI/APSP-7 standard now.

Question #12: What's the next step?

Answer: APSP will be going out to code officials around the country to urge that their state adopt the ANSI/APSP-7 standard now even if they are not yet ready for adoption of the 2009 ICC code revisions. Immediate state adoption of the ANSI/APSP-7 standard will provide the latest technological solutions to prevent suction entrapment and the ANSI/APSP-7 standard is consistent with the Virginia Graeme Baker Pool and Spa Safety Act.

Question #13: How can I get a copy of the ICC codes?

Answer: Call the International Code Council, 1.800.786.4452 or visit: www.iccsafe.org

Question #14: How can I get a copy of the ANSI/APSP-7 standard?

Answer: To order a copy of the standard, contact APSP Member Services (memberservices@APSP.org or 703.838.0083, ext. 301).

New APSP members automatically receive a free CD with the ANSI/APSP standards. For an APSP membership application, contact APSP Member Services (memberservices@APSP.org or 703.838.0083, ext. 301).

Question #15: What is the ICC?

Answer: The ICC is a nonprofit organization, founded in 1994, and dedicated to developing a single set of comprehensive and coordinated national model construction codes. The founders of the ICC are Building Officials and Code Administrators International, Inc. ® (BOCA®), International Conference of Building Officials® (ICBO®), and Southern Building Code Congress International, Inc. ® (SBCCI®). Since the early part of the last century, these nonprofit organizations have developed the three sets of model codes used throughout the United States. Most U.S. cities, counties, and states that adopt codes choose the International Codes developed by the International Code Council.

In addition to the International Residential Code and the International Building Code, ICC also publishes international codes for the following areas: electrical, energy conservation, existing buildings, fire, mechanical, plumbing, and property maintenance/zoning. The ICC currently has 14 Code Committees, which are responsible for the review and evaluation of code change proposals submitted to the 14 International Codes.