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- ASHI Certified Member
- FABI Master Professional Inspector
- ICC Residential Building and Plumbing Inspector B1, P1
- Level 1 Certified Infrared Thermographer
- ITA Certified Manufactured Home Inspector
- PsRR Disaster Housing Inspector
- Wind & Hurricane Mitigation Inspector
- Author and national speaker
- Author- Tactical Real Estate Negotiator
- EPA Certified Renovator
- BEST Building Envelope Inspector
- NAMM Certified Moisture Management Inspector
- Remote Airman Certificate with sUAS rating
- NSPF Certified Pool-Spa Inspector
- NORMI Certified Biocide Applicator
- NOA Certified Ozone Technician

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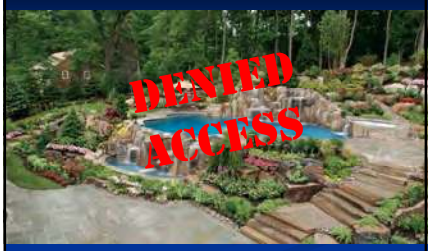
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Today's plan…

Pool construction process and the Standards
Finishes and inspection techniques
Bonding, inspection techniques and profit center
Other electrical
Barrier systems
Other safety issues
Equipment/components and inspection processes
Electronic leak detection
Other problems
One big thing you're probably been missing
Other profit centers

What Are The Inspection Standards?

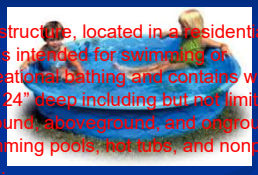
FABI/ASHI
InterNachi
Florida Building Code Residential
International Residential Code
National Electric Code 680

What Are The Inspection Standards?

Limitations & Exclusions

Florida Building Code Residential
International Residential Code
National Electric Code 680

SWIMMING POOL, PRIVATE



Any structure, located in a residential area, that is intended for swimming or recreational bathing and contains water over 24" deep including but not limited to inground, aboveground, and onground swimming pools, hot tubs, and nonportable spas.

Pool Components

- The Shell – Concrete (Shot-crete, Gunite) 4" nominal thickness, Fiberglass, Vinyl Liner. Very old pools are Concrete Block
- The Finish – Concrete only, ¼" nominal
- Pool Equipment – Pump, Filter, Heaters, Chlorinators, Pool Cleaners, Etc.
- Pressure and Suction Plumbing
- Pool Deck
- Pool Barrier – safety and alarms

How it's done…Dig a hole.



Piping installed



Steel is formed in place



Steel is formed and tied



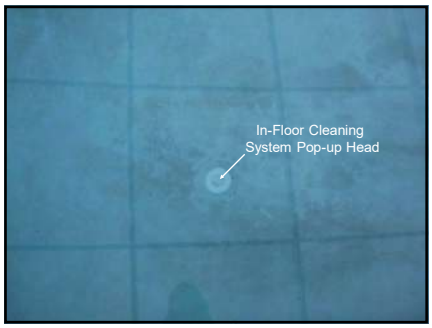
If steel is too close to the surface



Plumbed, steeled







Bond all metal



IRC & FBCR 10-20 322.3

- Slabs, pools, pool decks and walkways shall be located and constructed to be **structurally independent** of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundations are designed to resist the additional flood load.

How it's done…

- Pool shell is shot with concrete



Shot Crete or Gunite is not water proof

Shells are shot and formed









Applying finish




Finishes and inspection techniques 2

Finish Types

- Marcite – White Portland Cement, White Silica Sand, White Marble Dust
- Exposed Aggregate – Colored Aggregate(s) added
- “Pebble Tech” or “Diamond Brite” – Coarse Aggregates added.
- Fiberglass “Re-finish” Applied Over Existing Finish (90s Fibertech)
- Tile













DiamondBrite vs Pebbletech



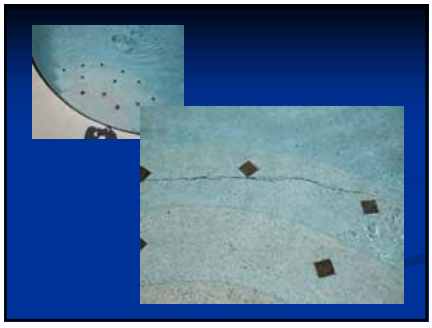
The Hamel scrape method

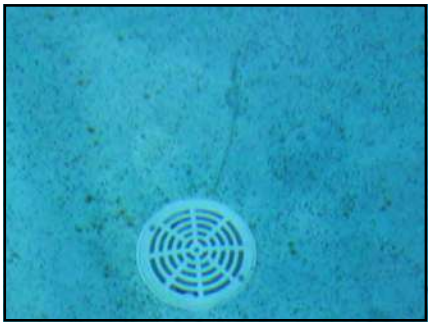
"In ground, exposed aggregate finish. The average life expectancy of diamond brite or pebble tech, with proper chemical treatment and maintenance, is about 12-14 years. Always monitor for cracks, efflorescence, rust, etc that may indicate issues not detected during this inspection. Under-water inspection services are available by specialized contractors. Pool shell finish was inspected using the Hamel scrape method."

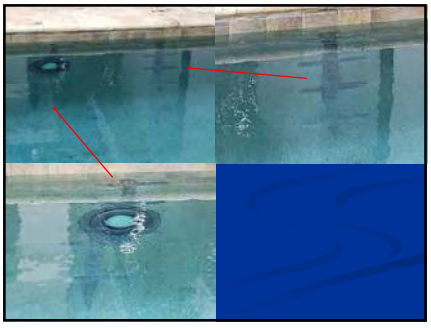


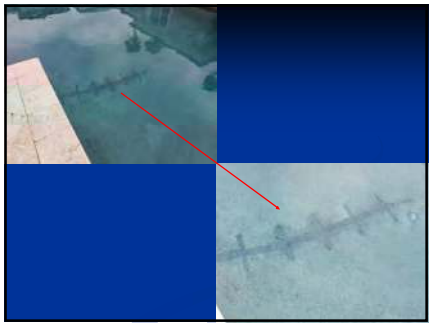


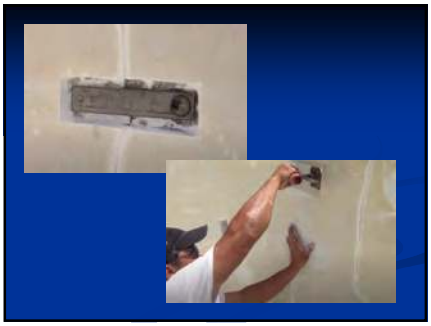






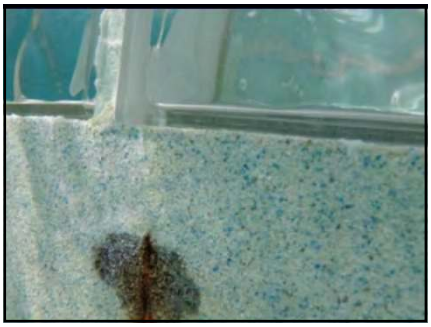


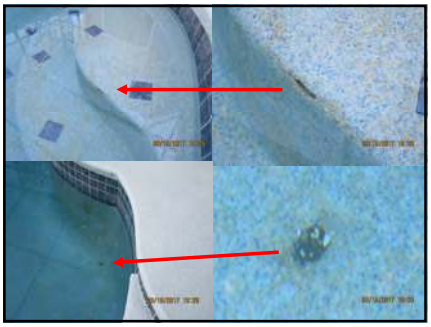


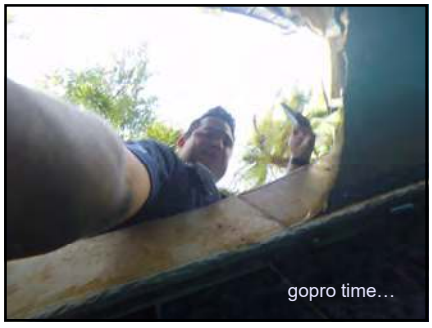











gopro time…





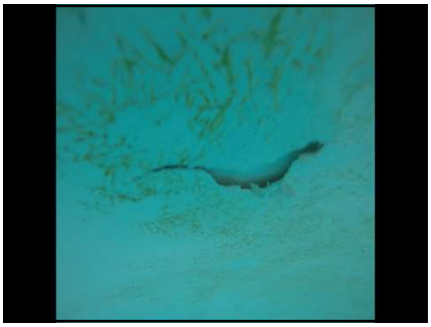














FBCR 04-10 4101.18 &
FBCR 14-20 4501.18 states

"All pools whether public or private shall be provided with a **ladder or steps** in the shallow end where water depth exceeds **24**". In private pools where **water depth** exceeds **5**', there shall be ladders, stairs or underwater benches/swimouts in the deep end."

Tile pools

- Very durable finish
- Look for damaged and missing grout or newly grouted areas.
- Broken tile is sharp, just like glass.
- Hollow not bonded tile areas, find by sounding the pool.





Bonding, inspection techniques and a potential profit center
3

Electrical Requirements

Bonding

NEC 680.26 (A) The bonding required by this section shall be installed to ***eliminate voltage gradients*** in the pool area as prescribed.

Conductor minimum #8 solid copper

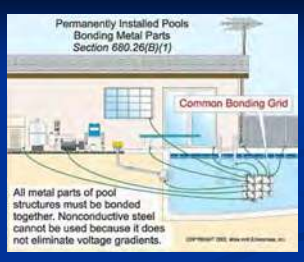
Concept of Equipotential Bonding

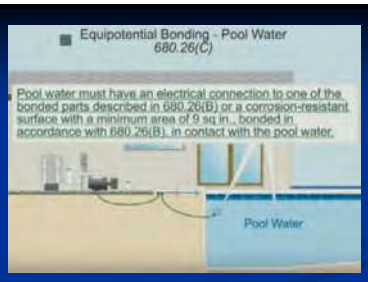
- It is essentially a function of connecting various pool components together with a bare copper wire to make them the same potential.
- The purpose of equipotential bonding is to equalize the pressure around the entire pool so your body doesn't create the circuit between areas of differing potential which would result in getting shocked.

Electrical Requirements

Bonding

- The Following Parts shall be Bonded
  All Metal Components – Pool Shell Rebar, Wire Mesh, Ladders, Pool Light Case, Pump, Heater, Screen Enclosure, Metal window or door frames, soffits/fascia.
  680.26 (5) Metal Wiring Methods and Equipment
  (1) Within 5' horizontally of the inside walls of the pool.
  (2) Within 12' measured vertically above the maximum water level of the pool…
- Look for the bonding lugs and a green insulated #8 or larger copper wire





IRC E4204.3



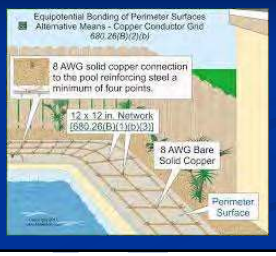
Bond connection to pool steel



Bond connection to pool light



To include adjacent surface



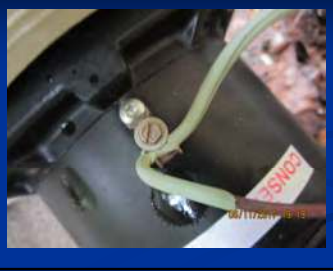
To include adjacent surface



nice try…



Another nice try…















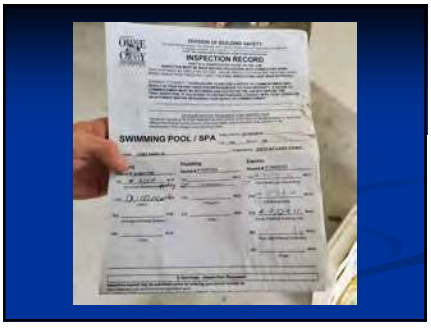











INSPECTION RECORD
SWIMMING POOL / SPA



Run EMT along covered areas to find bond





"Well it wasn't code back then!"



- Swimming pools *first* appeared in the NEC in the 1962 edition and was 3 pages long.

680-7. Grounding
- (a) All metallic conduit, piping systems, pool reinforcing steel, light fixtures, and the like, shall be bonded together and grounded to a common ground. The metal parts of ladders, diving boards, and their support, shall be grounded.
- (b) No pool equipment shall be grounded to an external grounding electrode that is not common to the pool ground (deck box or transformer enclosure).
- (c) An unbroken No. 14 AWG, or larger, insulated copper wire shall be provided for a grounding conductor from the deck box to the distribution panel ground.
- (d) Metallic raceways shall not be depended upon for grounding. Where exposed to pool water and in other corrosive areas such as in pump houses or adjacent to water treating and other equipment, the grounding of the non-current carrying parts shall be by means of an insulated copper conductor sized in accordance with Section 250-95.

The 1965 NEC was similar, expanded with some changes, and the grounding/bonding conductor went to a No. 8 AWG. There were other changes as well.

In the 1968 NEC the grounding/bonding changed to bonding and that is when the 5 feet horizontally of the pool water first came in.

You could say that pool bonding first came into the NEC in 1962, and that bonding as we know it today came into the NEC in 1968, albeit in a much simpler form. Equipotential bonding has continued to improve and change throughout the various code cycles since.

- _____
Jerry Peck, Construction / Litigation Consultant
Construction Litigation Consultants, LLC (www.ConstructionLitigationConsultants.com)

Profit opportunity!









ESD testers/monitors



=/> 20V
$120



=/> 1.7V
$300/$80



=/> .017V
$135



Mike Holt NEV method

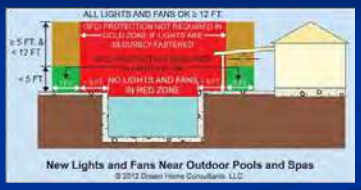


=/> .001V for about $0

Other electrical requirements 4

Electrical Requirements (Cont.)

- All pool deck area wall outlets must be GFCI protected.
- Fixtures above a spa or hot tub must be totally enclosed, GFCI protected and mounted a minimum of 7'-6"above the water height. NEC680.22B2



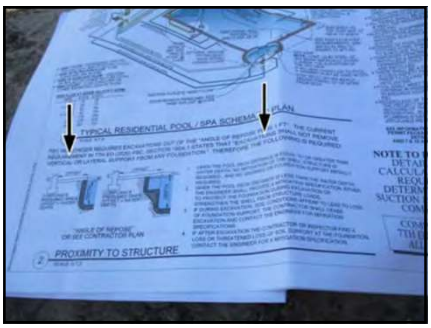
New Lights and Fans Near Outdoor Pools and Spas



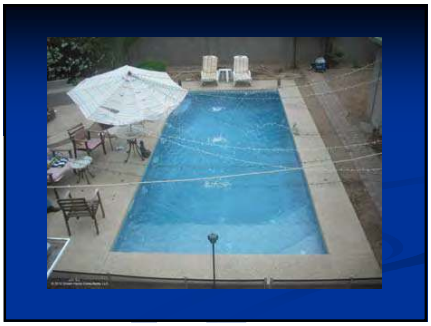
While we're here, angle of repose???

Angle of repose











FBCR14-17 states E4203.4.1 Outdoor location. In outdoor pool, outdoor spas and outdoor hot tubs areas, luminaires, lighting outlets, and ceiling-suspended paddle fans shall not be installed over the pool or over the area extending 5' horizontally from the inside walls of a pool except where no part of the luminaire or ceiling-suspended paddle fan is less than 12' above the maximum water level.



- **FBCR 14/17 E4203.1.1** Receptacles that provide power for water-pump motors or other loads directly related to the circulation and sanitation system shall be permitted to be located between 6' and 10' from the inside walls of pools and outdoor spas and hot tubs... Other receptacles on the property shall be located not less than 6' from the inside walls of pools and outdoor spas and hot tubs. [680.22(A)(2) and (A)(3)]

- **NEC14/17 680.21 C** states, "Outlets supplying pool pump motors connected to single-phase, 120-240V branch circuits, whether by receptacle or by direct connection, shall be provided with ground fault circuit interrupter protection for personnel."

- **IRC/FBCR E4203.2 & NEC 14/17 680 22(C)** Switching devices shall be located not less than 5' horizontally from the inside walls of pools, spas and hot tubs except where separated from the pool, spa or hot tub by a solid fence, wall, or other permanent barrier unless the switches are listed for use within 5'.



Overhead Conductor Clearances

- 22.5' clearance in any direction from water
- 14.5' clearance in any direction from diving platform
- Per NEC 680.8A







Lighting

- Light must be at least 18" below normal water level, per NEC14/17 680.23A5 unless the luminaire is listed for lesser depths. NO luminaire shall be less than 4" below normal water level.
- GFCI or transformer protection





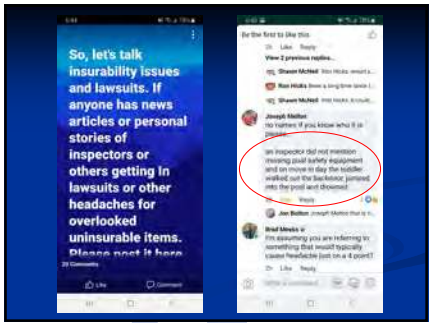








Barrier systems and requirements 5



Barrier Requirements

- In October of 2000 Senate bill 86, Statue 515 went into effect.
- Pool access must be blocked by a fence or screen. Fence gates must swing away from pool.
- Must meet local barrier code requirements for height (48”), deck/ground clearance (4/2”), and have self closing, self latching gates with latches not less than 54” above the deck height. IRC 305 & FBCR 4101













Those mesh fences…

The bottom of the mesh fence shall be not more than 1” above the deck.

Bottom of fence shall not permit fence to be lifted more than 4” from grade or decking.



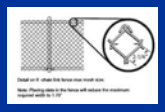
Barrier Requirements

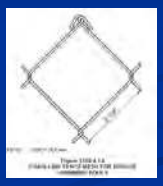
- Different style fences have different "opening size" requirements. R4101.17.1.2 Openings in any barrier shall not allow passage of a 4" diameter sphere.
- Door and window accesses to the pool must be limited by a barrier fence or have a pool alarm.
- All window and door glass within 5' of the pool must be "Safety Glass".

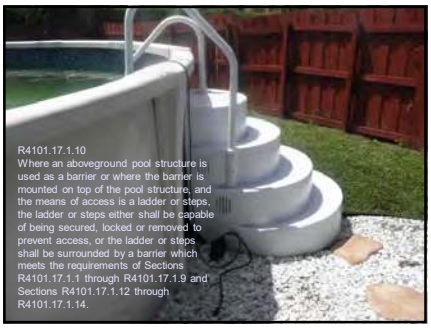




FBCR14/17 R4501.17.1.6 Maximum mesh size for chain link fences shall be a 2 ¼" square unless the fence is provided with slats fastened at the top or bottom which reduce the openings to no more than 1 ¾".

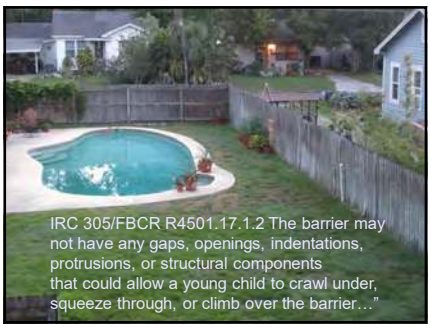






R4101.17.1.10
Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections R4101.17.1.1 through R4101.17.1.9 and Sections R4101.17.1.12 through R4101.17.1.14.



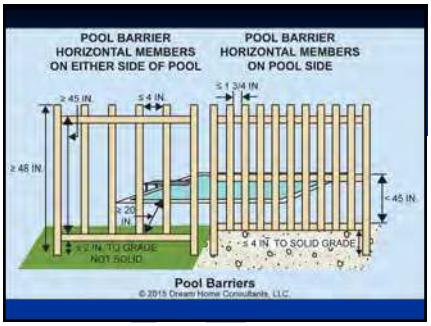


IRC 305/FBCR R4501.17.1.2 The barrier may not have any gaps, openings, indentations, protrusions, or structural components that could allow a young child to crawl under, squeeze through, or climb over the barrier…"



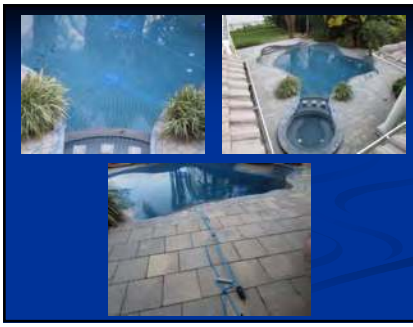
IRC 305/FBCR R4501.17.1.4 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45", the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 13/4" in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 13/4" in width.

IRC305/ FBCR4501.17.1.5 Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45" or more, spacing between vertical members shall not exceed 4". Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 13/4" in width.















FBCR04/07/10/14 4101 & 17 4501, All doors and windows providing direct access from the home to the pool shall be equipped with an exit alarm complying with UL 2017 that has a minimum sound pressure rating of 85 dB A at 10' Any deactivation switch shall be located at least 54" above the threshold of the access. Separate alarms are not required for each door or window if sensors wired to a central alarm sound when contact is broken at any opening.



Exceptions:

a. Screened or protected windows having a bottom sill height of 48” or more measured from the interior finished floor at the pool access level.

b. Windows facing the pool on floor above the first story.



c. Screened or protected pass-through kitchen windows 42” or higher with a counter beneath.





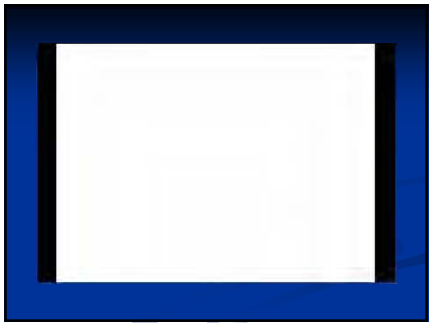








FBCR17 R4501.17.1.9-3. A swimming pool alarm that, when placed in a pool, sounds an alarm upon detection of an accidental or unauthorized entrance into the water. Such pool alarm must meet and be independently certified to ASTM Standard F2208, titled “Standard Safety Specification for Residential Pool Alarms,” which includes surface motion, pressure, sonar, laser, and infrared alarms.



R4101.17.1.14.1 Adjacent waterways. Permanent natural or permanent man-made features such as bulkheads, canals, lakes, navigable waterways, etc., adjacent to a public or private swimming pool or spa may be permitted as a barrier when approved by the authority having jurisdiction.







"Corroded fasteners can experience a reduction in shear and uplift strength making the cage more vulnerable to damage in severe winds. Recommend screen contractor evaluate all points of attachment for repairs/upgrades."





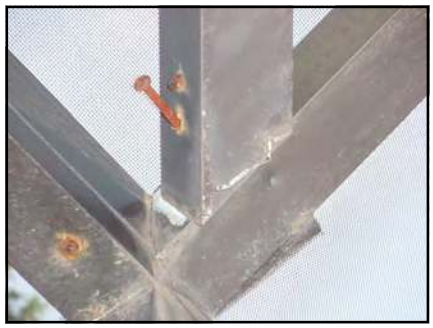






"Some corroded/missing fasteners in bottom rails, some rails have become detached from decking, repair/resecure."









Other safety issues
6

Other Safety Requirements

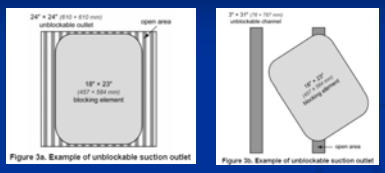
- Pool main drains must have a grate. "Newer pools" require dual main drains. Spa drain covers must be "anti hair entrapment rated".
- Effective September 6, 2011, suction outlet covers manufactured, distributed or entered into commerce in the U.S. must conform to the requirements of ANSI/APSP-16 2011.

- **FBCR14/17 4501.6.6 Entrapment protection.** Entrapment protection for suction outlets shall be installed in accordance with requirements of ANSI/APSP/ICC 7.

ANSI/APSP-7 specifically permits pools and spas to be built without submerged suction outlets or drains.

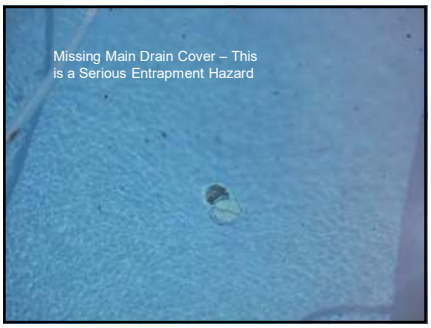
ANSI/APSP-7 is the first standard that limits flow rate. (2006 and prior ICC codes did not) The flow rate must not exceed 6 fps, or 3 fps when divided amongst dual outlets. (8fps current max) This lower suction force helps prevent hair entrapment and limits the differential pressure when one of the multiple outlets is blocked.

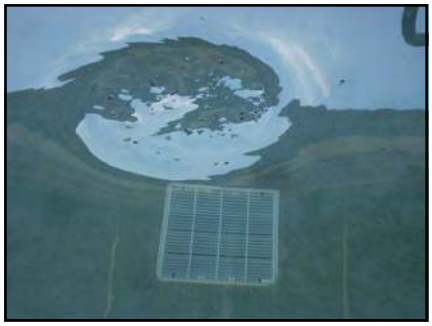
ANSI/APSP-7 provides for either multiple outlets or an unblockable outlet. Multiple outlets must be spaced 3' apart or on different planes so as to ensure that a single bather cannot block both outlets. Unblockable outlets must exceed 18"x 23" or be in the form of a channel drain.



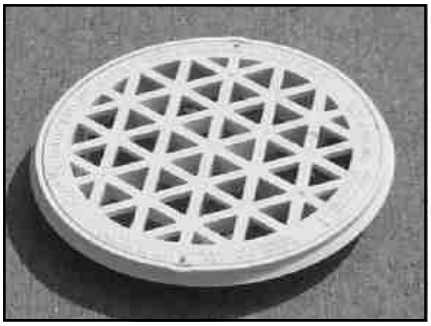




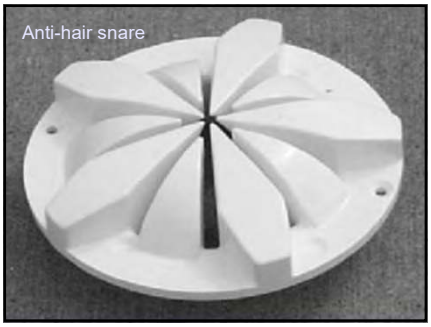


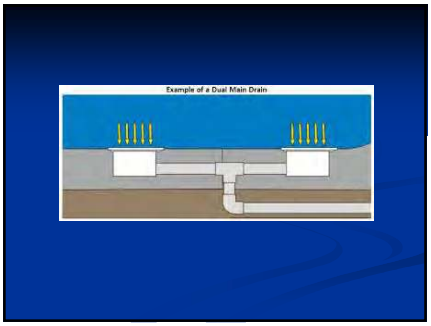
















Equipment, components and inspection processes
7

Pressure type – uses return side piping, pushes debris into a bag



Plug in type – Plugs into the skimmer and uses existing filters to remove debris



Robotic type – Self contained



Skimmers should have floating weir or door.

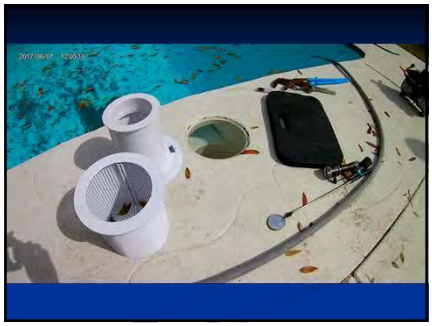




Always look inside for cracks







A result of chlorine tabs in skimmer



A result of chlorine tabs in skimmer







Defeating the purpose…



Very common to see crack repairs at skimmer entry



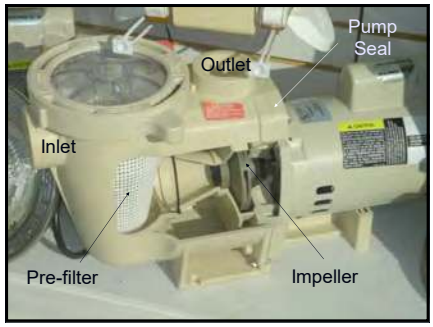


Inspecting Pumps

- Listen for bearing noise
- Check pipe connections for leaking
- Check strainer for leaking and/or cavitation
- Check timer, filter/bleeder, pressure gauge
- Electrical connections must have conduit
- Pump must be bonded
- SOP- start in the same place every time

IRC & FBCR 10-20 R322.1.6

Equipment for pools, spas and water features shall be permitted below the elevation required in Section R322.2 or R322.3 provided it is elevated to the extent practical, is anchored to prevent flotation and resist flood forces, and is supplied by branch circuits that have ground-fault circuit-interrupter protection.





Proving the pump works











High efficiency pumps



HB7135

As of March 15th, State of Florida Building Code regulations will require your new pool pump be a two-speed or variable-speed pump that will reduce dramatically electric usage.

July 1, 2011: Manufacturers sending products into Florida must comply with the new legislative regulations.

December 31, 2011: Contractors can only install products that comply with the new regulations.

Florida Statutes

- **553.909 Setting requirements for appliances; exceptions.**—(1) The Florida Energy Efficiency Code for Building Construction shall set the minimum requirements for commercial or residential swimming pool pumps, swimming pool water heaters, and water heaters used to heat potable water. The code shall further establish the minimum acceptable standby loss for electric water heaters and the minimum recovery efficiency and standby loss for water heaters fueled by natural gas or liquefied petroleum gas.
- (3) Commercial or residential swimming pool heaters manufactured and sold on or after December 31, 2011, for installation in this state must comply with the requirements of the Florida Energy Efficiency Code for Building Construction.
- (4) Residential swimming pool **filtration pumps** and pump motors manufactured and sold on or after December 31, 2011, for installation in this state must comply with the requirements of the Florida Energy Efficiency Code for Building Construction.

Florida Energy Conservation Code R501.5 New and replacement materials.
Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used.

It looks as if, effective July 18 2021, variable-speed pumps will become mandatory for powering a pool's or spa's filtration system and other applications. The U.S. Department of Energy has finalized a federal regulation setting forth minimum efficiency standards that a pool pump must meet to enter commerce in the United States. That being variable speed pumps.

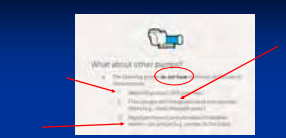
"The new Department of Energy (DOE) Dedicated Purpose Pool Pump (DPPP) regulations go into effect 7.19.21, and most in-ground, single-speed pool pumps will fall out of federal compliance." Pentair

You have a 1 1/2 HP, Single-speed Filtration Pump: Running speed 3,450 rpm 2.76 Estimated Kilowatts used per hr. x $0.14 Average cost per Kw = $0.39 Cost per hour
Average running hrs. 10 Est. cost per day (10hrs x $.39) $3.90 Est. cost per month $117.00 Est. cost per year **$1,404.00**

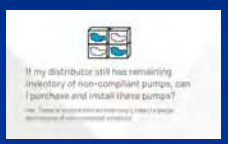
Replace it with a 1 1/2 HP, Two-speed Filtration Pump: Running speed 1,725 rpm .368 Estimated Kilowatts used per hr. x $0.14 Average cost per Kw = $0.05 Cost per hour Average running hrs. 20 Est. cost per day (20hrs x $.05) $1.00 Est. cost per month $30.00 Est. cost per year **$360.00** That is a savings of over $1,000 per year!

Pentair calculator









Energy Code

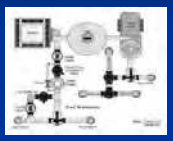
- **403 Pool covers.**
- Outdoor heated swimming pools and outdoor permanent spas shall be equipped with a vapor retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.
- **Exception:** Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required.
  - IRC is 75% over 3 month period.

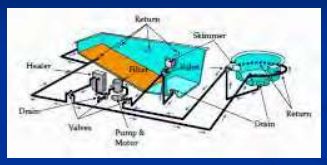
Where do I start?



Peter Frampton's Hair Colored Pink Pump Filter Heater Chlorinator Pool























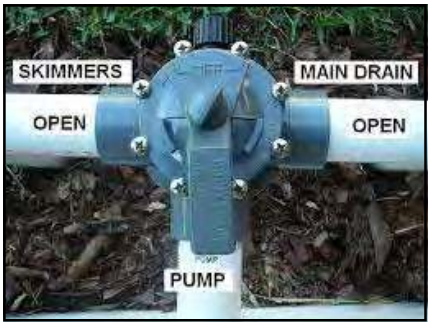
Acapulco

Shaq-apulco



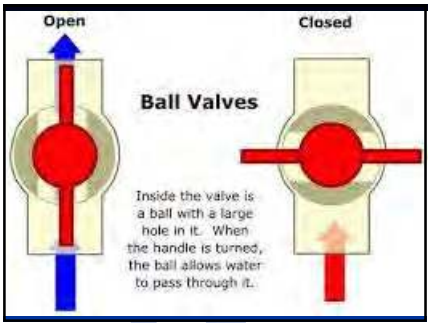












FBCR17 R4501.8.2 Full-way (gate) valves. When the pump is located below the overflow rim of the pool, a valve shall be installed on the discharge outlet and the suction line.



Make sure the chlorinator is last!









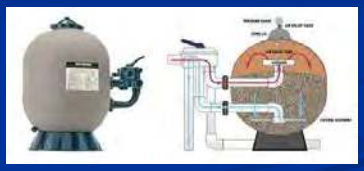
Inspecting Filters

- Identify Type
- Diatomaceous Earth (D. E.) – Very Effective
  Cartridge – Very effective
  Sand - Least Effective
  Glass- Most Effective
- Check Case, Seal, & Plumbing Connections For Leaking
- Water Clarity is a Good Indicator of Filter Effectiveness

Diatomaceous Earth (D. E.)



Sand filter



Glass filter

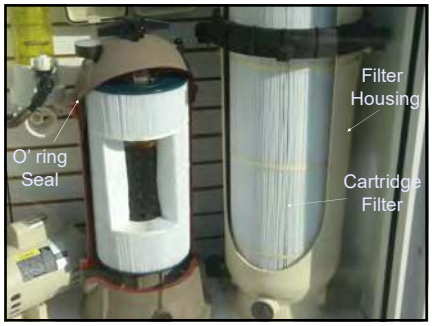


Glass filters



Cartridge filter





Leak



Leak



Check pressure gauge (#20)



Check bleeder valve



But not these…ask me why.













Pool heaters

- Gas (Natural or Propane) – Confirm gas supply, inspect burner compartment, heat roll out, set temperature to fire burners, view combustion. Turn pump off, burners should shut off. Must have TPR valve*.
- Heat pump – Set temperature to start heat pump. Confirm cool air from unit, use amp probe vs manufacturer's max rating.
- Electric – Use amp probe.

FBCR 04-20 M2006.4 states, "...a bypass line and valve shall be installed between the inlet and outlet piping for use in adjusting the flow of water through the heater."

*IRC 2006.3

Floriduh Pools









Require Floriduh Screen Cages



And Floriduh heaters

Propane grillin' heater?



Charcoal heater?



Trash can heater?



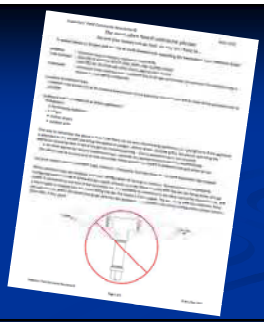
Floriduh solar hose?



Heater clearances



400,000 Btu
vs
250,000 Btu





G2419.4 (408.4) Sediment trap. Where a sediment trap is not incorporated as part of the appliance, a sediment trap shall be installed *downstream* of the appliance shutoff valve as close to the inlet of the appliance as practical.















IRC/FBCR 04-20 M2006.3
Temperature-limiting devices. Pool heaters shall have temperature-relief valves.

"This gas pool heater does not have an external TPR valve. Some units may have an internal pressure and/or temperature sensing/relief switch/es. Consult manufacturer."





Exception?

FBCR04-20 R4501.14.5 Relief valve. When water heating equipment which is installed in a closed system has a valve between the appliance and the pool, a pressure relief valve shall be installed on the discharge side of the water heating equipment.



- Solar Pool Heaters- manipulate valves either manual or automated, visual on panels. Also look for white stains indicating previous leakage. Array straps, previous repairs.



Solar heater?





Rule of thumb

A solar array will be roughly the same size as the footprint of the pool.

Strapped vs Strapless




















How NOT to install solar panels…

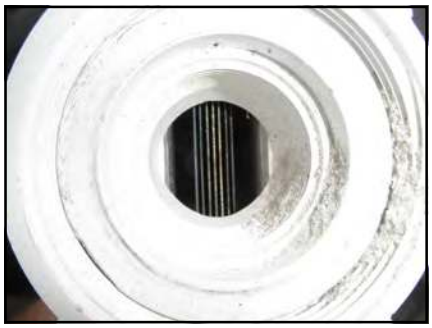


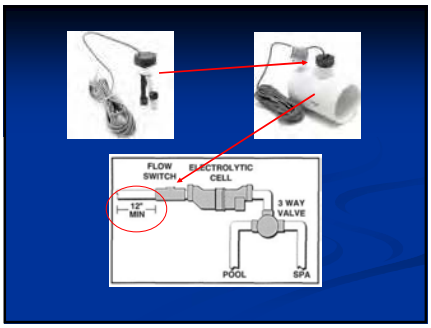







T- Cells
SuperCell SC-48

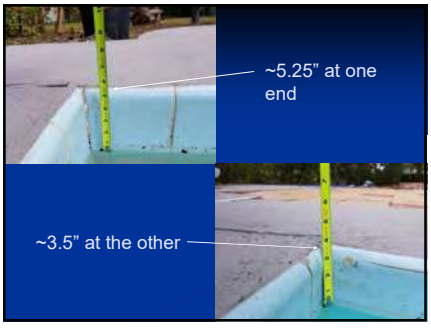



FLOW SWITCH
ELECTROLYTIC CELL
12" MIN
3 WAY VALVE
POOL
SPA




Water level = macro




~5.25" at one end
~3.5" at the other

Electronic leak detection 8

Areas Most Likely to Leak

- Water line tiles
- Skimmers
- Pool light cavity
- Pool shell plumbing connections
- Pool steps
- Air leaks at suction side fittings & unions





Simple Leak Testing

- Normal evaporative loss can be ¼" or more
- Set a 5 gallon bucket on a pool step and fill with water to the same level as the pool.
- Wait 24 hours – The water level in the bucket should be the same as the pool.
- Pool water level less than the bucket water level indicates some degree of leaking from the pool.



MY POOL DOESN'T LEAK!

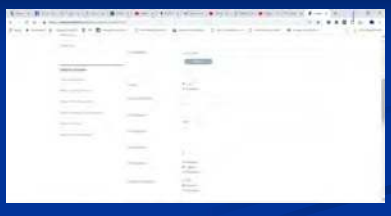




Here's your sign…



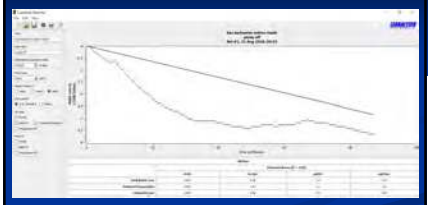
https://www.leaktools.com/evaporation-index.html

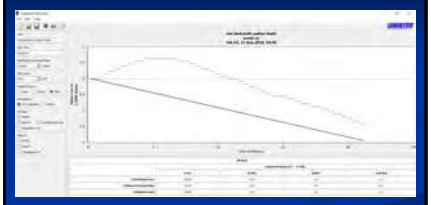


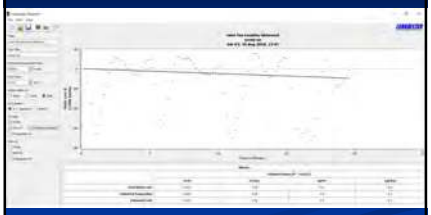


Using the Leakalyzer software









Other problems
9

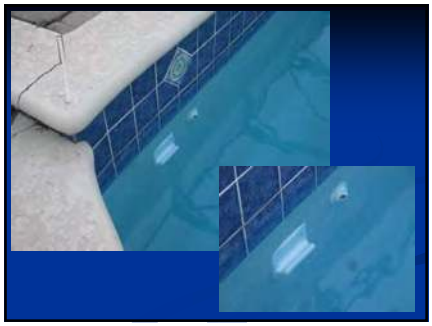
Other problems…

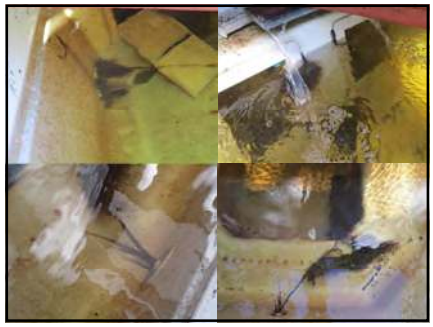




- There are specific design requirements for diving boards but insurance companies do not like them.
- Most residential pools are not designed for diving boards, either in depth or size including slope requirements.
- For diving boards See NSPI-1995-5 as special requirements for these devices exist.







Other problems…homeowners







Home owner crack repairs



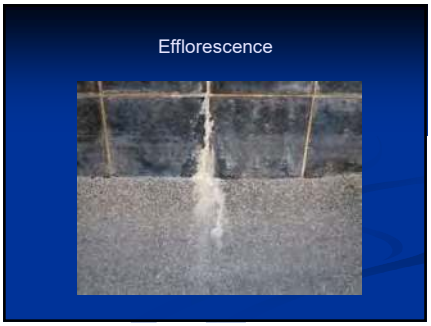


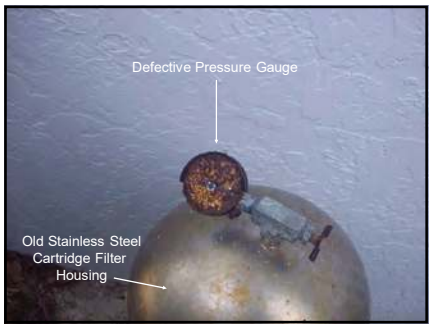


- From the FBC-Building - 424.1.2.5.3 Stairs. Stairs shall have a minimum tread width of 10" and a maximum width of 48" for a minimum tread length of 24" and a maximum riser height of 10". Treads and risers between the top and bottom treads shall be uniform to within ½" in width and height. …The front 3/4 to 2" of the tread and the top 2" of the riser shall be tile, dark in color, contrasting with the interior of the pool. …Vinyl liner and fiberglass pools may use other material for the step edge marking, provided the material is permanent, permanently secured, dark in color, nonfading and slip resistant.




Leaking Problems


Efflorescence


Defective Pressure Gauge
Old Stainless Steel Cartridge Filter Housing


Missing Wiring Cover
Pool Timer








Indoor pool

Indoor pool





Indoor pool










FBCR10 4101.21.4 & 14/17 R4501.21.4 In areas of anticipated water table an approved hydrostatic relief device shall be installed.

Exception: Plastic liner pools (where there is no structural bottom to the pool).

Hydrostatic Pressure Relief Valve





Decks

Must slope away from pool
Safety
Settlement
Odd stuff









Always watch for safety hazards





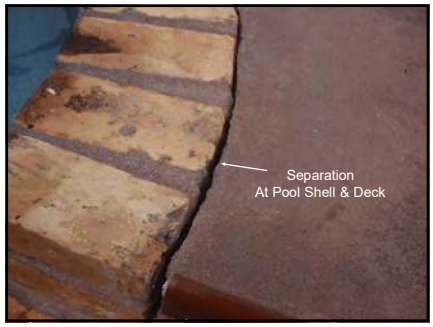
Settlement and damaged curb



One big thing you've probably been missing 10







What's your opinion?



What's your opinion?





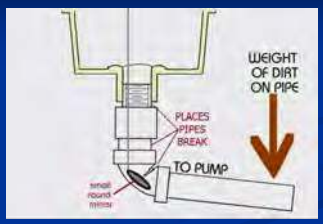
Common pipe crack leaks



Notice the soil voids



Using a small 1" mirror



Using a larger mirror



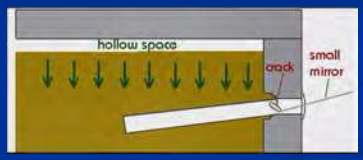
Debris accumulation



Where does the water go?



Soil/deck settlement



Pipe cracks from deck settlement





Crack on top of pipe





More profit centers
11

Profit Centers

- Leak detection
  - Dye testing
    - Simple
    - Difficult
  - Pressure testing
    - More equipment, more difficult,
    - Liability
  - Sounding
    - Expensive
  - Repairs
    - Simple
    - Difficult















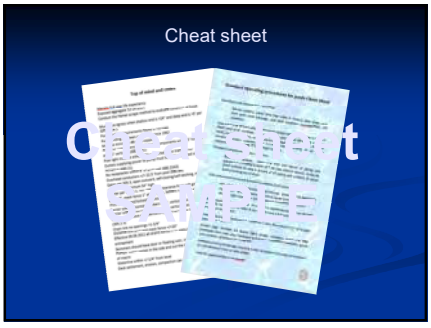


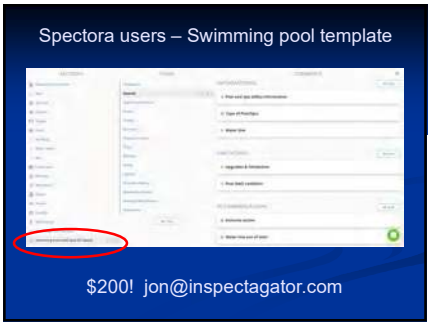





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Cheat sheet


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"Somebody in the hospital is begging God for the opportunity you have right now – step into your moment."

Tony Robbins



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