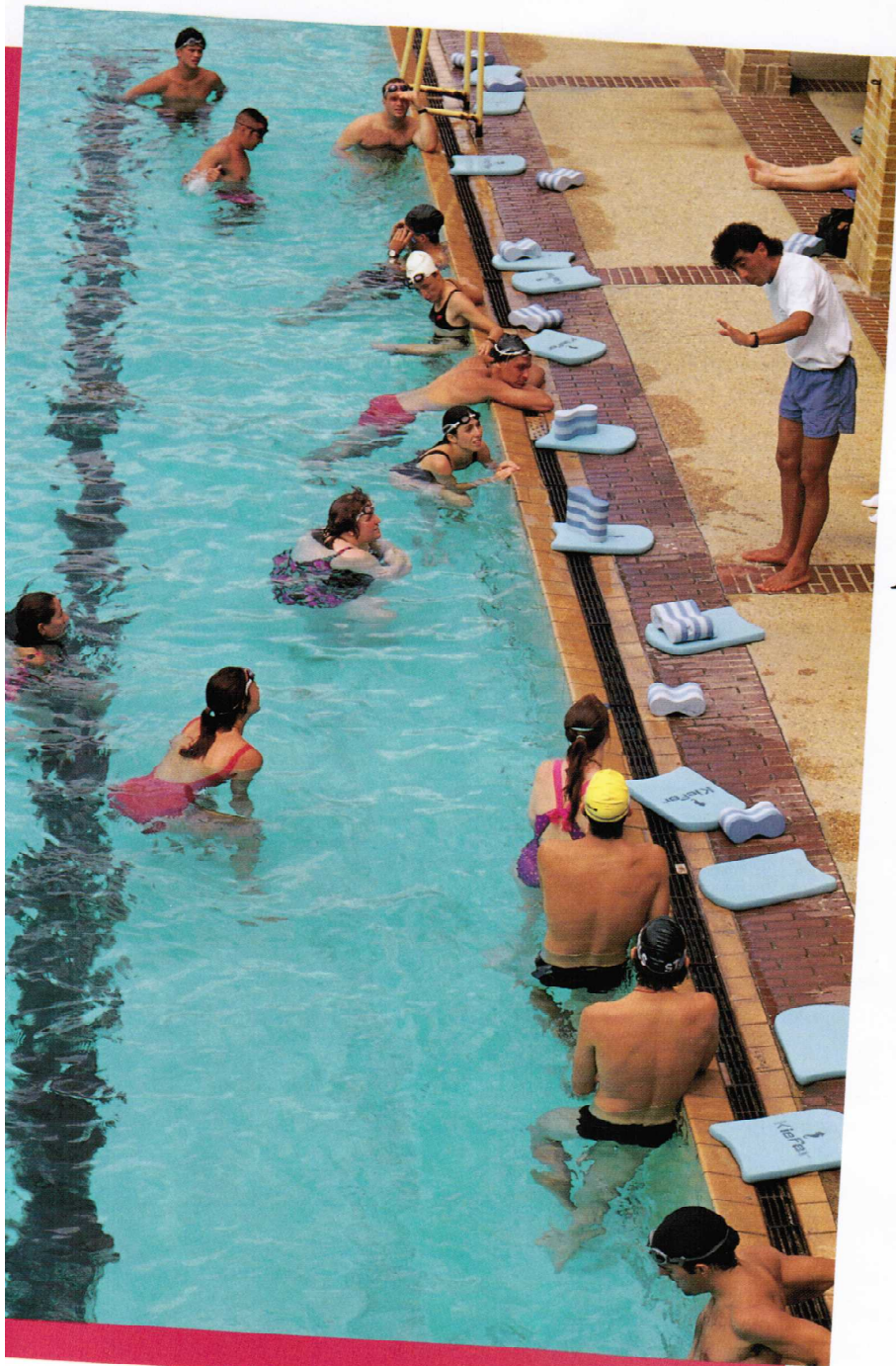


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The outdoor pool at the Steiner Aquatic Center in Salt Lake City, Utah, has an extended swimming season. The facility uses insulating pool blankets to retain heat in the cooler months.



## Closed for the Season — Managers Must Choose Winterizing Option Wisely

**N**ow, in the heat of the summer, when your outdoor pool is filled with people, it is difficult to find the time to even think about — let alone plan for — the coming winter. But, now is the time to start planning for the off-season maintenance of your pools, and doing so can result in a smooth transition from summer to fall and an even smoother opening next spring.

What happens to a pool while it is closed to the public is almost as important as what happens during the height of the season.

Pools can be properly winterized or, in milder areas, they can be placed on "idle." Even in areas with harsher climates, facility managers can take steps to extend the season beyond the traditional Labor Day closing.

Which option is best for your facility? It depends.

### Traditional Pool Winterizing

There are three schools of thought on traditional pool closing and winterization:

- Drain the pool and let it sit empty for the winter.
- Turn off the circulation pump and wait for spring.
- Winterize properly.

Many commercial pool operators, through laziness or ignorance, still make the wrong choice.

A pool should not be drained and left empty for the winter. The pool shell may "pop" or "float" out of the ground as a consequence of high groundwater table, hydrostatic pressure or ground movement resulting from soil expansion and freeze-and-thaw cycles. Pipes, skimmers and waterline and gutter cap tile may crack. The pool surface or coatings, particularly paint or plaster, may be damaged from exposure to the elements. An empty pool also can be a target for vandals and graffiti "artists." Skateboarders, having found an ideal skating surface, may damage the pool shell.

Many outdoor public pools, such as the Fairfax County Park Authority's Lake Fairfax Pool, Fairfax, Va., were not designed for year-round operation. The water is not heated, so the pool is winterized five to six weeks before the first freeze. Prior to the end of the swim season, around Labor Day, winterization procedures begin.

John McCarthy, aquatics operations specialist for the Park Authority, uses a traditional winterizing method to close the

pools for the season. "The water level is dropped 8 to 10 inches below the skimmers, and algaecide is added to the water. We used to use simazine, but because it has been banned by the Environmental Protection Agency (EPA), we're now using other products to prevent algae growth in the pool over the winter," McCarthy said.

The EPA in March announced that the pesticide simazine may pose unacceptable risks to children and adults using facilities treated with it, and products containing it have been withdrawn from the market by the manufacturers.

Trying to close down an aquatic facility amid the pandemonium and confusion that typically exists on the last day of operation usually leads to the "just turn off the circulation pump and let the seasonal opening staff worry about it next spring" method of winterization. But the water in pools that have not been properly winterized rapidly turns stagnant. Swampy water conditions may pose a public health risk, and an algae-filled, discolored pool is a potential safety hazard. Leaves, algae and dead animals will ac-



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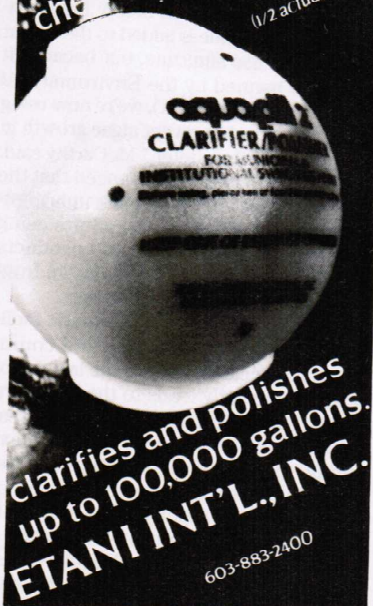
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## POOL WINTERIZING CHECKLIST

- \_\_\_ 1. Adjust chemical balance of pool water to recommended levels.
- \_\_\_ 2. Superchlorinate.
- \_\_\_ 3. Add an algicide to prevent algae growth.
- \_\_\_ 4. Add sequestering or chelating agents to prevent mineral staining and scale build-up.
- \_\_\_ 5. Clean and vacuum the pool, because any debris left in the water will consume chlorine during the off season.
- \_\_\_ 6. Empty and store skimmer baskets and hair-and-lint traps for the winter.
- \_\_\_ 7. Backwash the filter thoroughly.
- \_\_\_ 8. Clean the filter media or elements.
- \_\_\_ 9. Drain sand filters. Remove cartridges or DE filter elements, inspect for tears or excessive wear and store for the winter.
- \_\_\_ 10. Lower the water level to below the skimmers and return lines. If needed, remove the remaining water from the recirculation lines using an air compressor or industrial type tank vacuum cleaner.
- \_\_\_ 11. Open all pump room valves and loosen the lid from the hair-and-lint skimmer. However, if the filter is below pool water level, close the valves leading from the pool to the filter.
- \_\_\_ 12. Grease all plugs and threads.
- \_\_\_ 13. Add a non-toxic antifreeze such as propylene glycol (1 part antifreeze diluted in 2 parts water) to the pipes to prevent freeze damage and possible bursting. Do not use automotive antifreeze.
- \_\_\_ 14. Plug skimmer or gutter lines. Winterize with antifreeze and expansion blocks. Secure skimmer lids to the deck to prevent their loss.
- \_\_\_ 15. Plug vacuum and return lines and the main drain.
- \_\_\_ 16. Make sure the hydrostatic relief valve is operational.
- \_\_\_ 17. Drain and protect recirculation pumps. If a pump and motor will be exposed to severe weather, disconnect, lubricate, perform seasonal maintenance, replace seals and store. Add antifreeze to help protect pumps and seals from any residual water left after draining.
- \_\_\_ 18. Clean surge pits or balancing tanks.
- \_\_\_ 19. If underwater wet-niche lights are exposed to the elements, remove them from their niches and lower them to the bottom of the pool.
- \_\_\_ 20. Disconnect all fuses and open circuit breakers.
- \_\_\_ 21. Drain pool water heater. Grease drain plugs and store for the winter.
- \_\_\_ 22. Turn off the heater gas supply, gas valves and pilot lights.
- \_\_\_ 23. Install the winter safety cover.
- \_\_\_ 24. Return any unopened chemicals and empty storage containers to the distributor.
- \_\_\_ 25. Properly store opened chemicals in tightly sealed containers in a well-ventilated room. Dispose of test reagents, sanitizers and other chemicals that will lose their potency over the winter.
- \_\_\_ 26. Disconnect, clean and store the chlorinator, controllers and other chemical feed pumps. Store controller electrodes in liquid.
- \_\_\_ 27. Clean and protect gauges, flowmeters, thermometers and hygrometers.
- \_\_\_ 28. Store all deck furniture (chairs, lounges, tables, umbrellas). Identify and separate all furniture in need of repair.
- \_\_\_ 29. Remove deck equipment, hardware and non-permanent objects such as ladders, rails, slides, guard chairs, starting blocks, drinking fountains, disabled lifts, portable ramps, clocks, weirs and rescue equipment to prevent vandalism. Store the items in a clearly marked, identifiable, weather-protected location. Cap all exposed deck anchors or sockets.
- \_\_\_ 30. Remove the diving boards. Store the boards indoors, upside down and flat so they will not warp.
- \_\_\_ 31. Open hose bibs and fill spouts.
- \_\_\_ 32. Turn off the water supply to restroom showers, sinks and toilets. Drain the pipes; add antifreeze. Remove any shower heads and drinking fountain handles.
- \_\_\_ 33. Have the phone company disconnect the pool telephone and discontinue service for the winter.
- \_\_\_ 34. Install a pool or deck alarm system.
- \_\_\_ 35. Inventory supplies and equipment. Make suggestions for preventive maintenance and repair, upgrading and needed equipment purchases.



cumulate in the water over the winter months and begin to decay with the spring thaws. Seasonal start-up procedures will be unpleasant, take more time and involve greater expense than if the pool were properly winterized.

One way McCarthy prevents animals from becoming trapped in the pool water is to place a tilt board in the pool, "so if animals fall in the pool, they can climb out. The pool deck is fenced, but small animals like squirrels and opossums still seem to fall into the water with some frequency and drown," he said.

When correctly winterizing a pool, the water should be left in to protect surfaces. Adding logs, tires or other objects in an attempt to prevent freeze damage to the pool is a waste of time.

The water in the pool can be allowed to freeze, but the pipes and equipment must be protected to avoid damage. McCarthy wraps heat tape around the ends of the main drain and return pipes where they are exposed in the pump room to help keep the pipes from freezing during the cold months. These lines cannot be completely drained because of their location. Heat tape has a filament wire running through it. The tape is wrapped around the circulation lines and plugged into a socket. When outside temperatures

drop below 35°F, the heat tape turns on and off to generate heat and keep the water trapped in the pipes from freezing.

It is crucial that proper steps be taken during the winterization process to protect the pool structure and equipment from damage by the elements. In addition, several security precautions must be taken to protect the facility from damage by intruders. A pool and deck alarm system, for example, will notify security personnel of the presence of trespassers in the pool area during the off-season. Barrier fences also will help secure the facility, but only if the gates are locked. (See "Off Limits: Security Devices, Barriers and Alarms Deter Access to Closed Pool Facilities," AQUATICS INTERNATIONAL, November/December 1993.)

At least once a week, the pool operator should check the facility to make sure that things are as they were left, that the pool has not been vandalized, that the winter cover is in place and that damage from the elements has not occurred. In Fairfax County, this is done more frequently — at least three times a week.

Also, the water level in the pool should be checked to make sure water is not being lost due to a leak in the system or from the pool shell. Periodic chemical adjustments also may be necessary.

Taking the time to properly close down a pool for the winter makes opening back up in the spring that much easier.

### Idling Pools

It's not always necessary to "winterize" a pool. As a matter of fact, most outdoor pools in warm or mild climates close for just a few months of the year. These pools commonly are "idled," rather than winterized. When drought restrictions are in effect — making it impossible to drain and refill a pool — or when the pool is closed for a long holiday vacation break, idling may be the wisest choice.

"Because of the continuing drought problems and a need to be concerned about water conservation and public image, it is not cost-effective for us to drain the pools. We drain them only if major maintenance or renovations are needed," said Belinda Bencomo, supervising recreation specialist — aquatics, City of San Diego Park & Recreation Department, San Diego, Calif.

To idle a pool, time clocks can be installed to circulate the pool water intermittently, cycling on and off for a few hours every day. Start by cutting back from continuous 24-hour circulation, to on-off cycles every other hour, to eventually circulate one hour out of every four

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# A Guide to Pool Winterizing Products

Following is a list of suppliers of equipment that can be used to winterize outdoor pools. The list is intended as a resource for readers, not as an inclusive list of all suppliers.

## Enclosures

Air Structures American Technologies (Circle 237)  
Air Structures (Circle 238)  
Air Technology (Circle 239)  
Aluma-Glaze (Circle 240)  
Atria (Circle 241)  
Custom Enclosures (Circle 242)  
Delta Products (Circle 243)  
Florian Greenhouse (Circle 244)  
Four Seasons Solar Products (Circle 245)  
Glashouse, Div. of United Skys (Circle 246)  
Kalwall Corp. (Circle 247)  
Leisure Products Systems (Circle 227)  
Openaire (Circle 248)  
Plastimayd (Circle 249)  
Skytech Systems (Circle 250)  
Solar Additions (Circle 251)

Structures Unlimited (Circle 252)  
Sunrite (Circle 253)  
Tensar Structures (Circle 254)  
Texlon North America (Circle 255)  
Thermo-Flex (Circle 256)  
Vegetable Factory (Circle 257)  
Yeadon Fabric Domes (Circle 258)

## Pool Covers/Blankets

AVI (Circle 214)  
Alta Enterprises (Circle 215)  
Anchor Industries (Circle 216)  
Aquamatic Cover Systems (Circle 217)  
Blue Shield Poly Laminating (Circle 218)  
Cantar Corp. (Circle 219)  
The Cover Co. (Circle 220)  
Cover-Pools (Circle 221)  
Coverall Tarp (Circle 222)  
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Dearing Solar Systems (Circle 224)  
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Meyco Products (Circle 231)  
Poolsaver (Circle 232)  
Spectrum Pool Products (Circle 233)  
Superior Aqua Enterprises (Circle 234)  
USA Products (Circle 235)

## Winterizing Chemicals

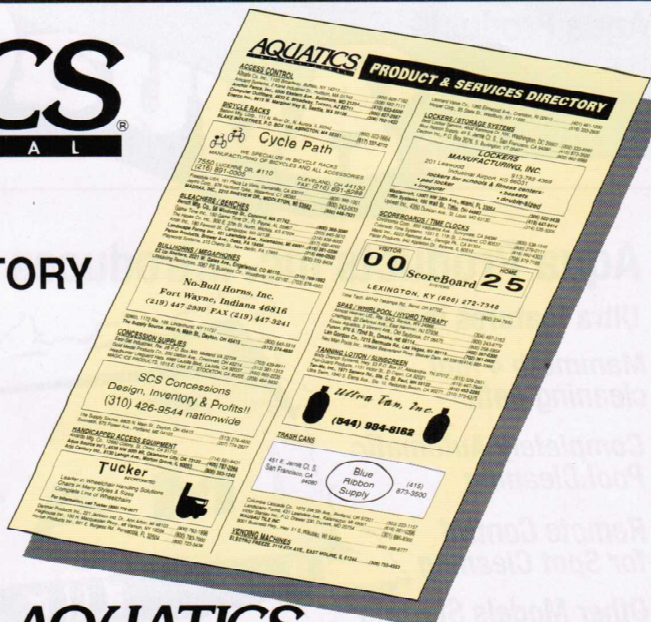
A&V (Circle 200)  
Alfa Products (Circle 201)  
Aqua Clear Industries (Circle 202)  
Applied Biochemists (Circle 203)  
Bel Aqua (Circle 204)  
BioLab (Circle 205)  
CPC Chemical Div., Richey Industries (Circle 206)  
Etani International (Circle 207)  
Florida Water Works (Circle 208)  
Great Lakes Biochemical (Circle 209)  
N. Jonas & Co. (Circle 210)  
Olin Corp. (Circle 236)  
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to still permit at least one complete turnover of water per day. Circulation pumps should not be shut down when the pool is open for operation, closed for the evening or on weekends. This may lead to unacceptable water quality and may be a violation of state or local health and safety codes. If water quality deteriorates, increase the duration or frequency of circulation time.

Water should be filtered and chemically treated throughout the idle period to remove particulate matter, keep the water balanced, prevent damage to the pool surface and equipment and inhibit bacteria and algae growth. To keep the pipes from freezing in cold climates, water should be heated and circulation pipes should be insulated to prevent heat loss.

### Installing a Safety Cover

The pool should be covered with a winter safety cover that meets standards set by the American Society for Testing and Materials (ASTM) to prevent large debris, animals or people from entering or accidentally falling into the water. Because of safety concerns, some health and safety codes do not permit the use of traditional insulating pool blankets, solar covers or vinyl winterizing covers on public pools when they are closed for long periods. Trespassers can slip unseen below these blankets. Children have been known to drown on top of winter covers on which shallow pools of water and debris have collected.

Safety covers have a continuous connection between the pool and deck and can prevent unauthorized access to pool or spa water. They are installed in a track, rail or guides or are otherwise locked or secured into the deck. The covers are either made of mesh, which allows water to drain through, or are sold with automatic auxiliary pumps that prevent the accumulation of standing water. Safety covers are capable of supporting a 400-pounds-per-square-foot load and bear an identification label indicating the name of manufacturer, installer and compliance with ASTM safety cover standards.

A safety cover is not the only security measure that should be taken. "When we've emptied the pools in the past, skateboarders showed up almost immediately. Word seems to travel fast among them that a pool has been drained. If our pools are emptied for repairs or resurfacing, we now keep safety personnel on the premises 24 hours a day," Bencomo said.

"The pools are fenced and secured. We keep in close contact with our local police and let them know when the pools are not open for use by the public. Most of our pools are located near a recreation center, and the recreation leaders check each pool several times a day to make sure there hasn't been any vandalism and

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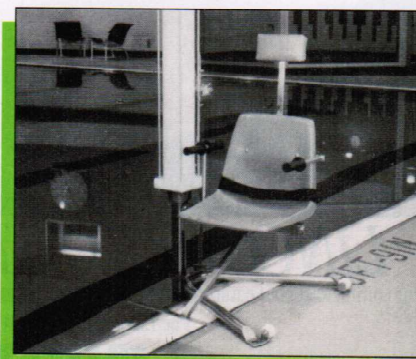
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that there are no other problems. The pool service technicians stop at each pool at least once a day to check the pools, circulation and chemical treatment equipment," Bencomo added.

When pools are properly idled, there is no need to drain the pool before reopening it. Only minor adjustments in water chemistry are needed to bring the facility back up to ideal operating conditions.

### Extended Operation

Some outdoor pools, such as the one at the Steiner Aquatic Center operated by the Salt Lake City, Utah, Parks & Recreation Department, get the most from their facility by extending the season.

This practice has been common in mild climates and in cold weather resort areas. It also is more prevalent throughout the country as the need to meet or exceed expenditures and to justify building of new aquatic facilities becomes more common. Most communities no longer can afford to build a recreation facility that generates revenue only three months out of the year.

The indoor pool, outdoor pool and spa at the Steiner Aquatic Center are 92 percent self-sufficient and are nearing the ability to cover the cost of operation, thanks to the extended season. The fa-

cility was named the Outstanding Recreation Facility in the State of Utah by the Utah Recreation and Park Association. "We're getting about 3½ more months out of our outdoor swimming season than any other public facility in the state," said Brent Sheets, director of the facility. "We're very heavily used and tightly scheduled 16 hours a day. We'll keep the pool open for use by swim teams, lap swimmers or any other interested group. If people will use it, and we can justify it as a customer service, we'll do anything we can to extend the season."

To keep a pool open in cold weather, it is necessary to keep the water circulating continuously. Pool circulation and filtration equipment should be installed in a sheltered, heated and well-ventilated room. The pool heater should be properly sized and installed as close to the pool as possible to reduce heat loss. Pipes and the back of the pool shell can be sprayed with foam insulation to further reduce heat loss. In the unlikely event that moving pool water in the circulation pipes freezes during unusually cold weather, the lines can be unfrozen by pouring warm water in through the hair-and-lint skimmer. Frozen equipment should be removed and thawed in a warm room.

Pool water must be heated to the de-

sired temperature. When not in use, the pool must be covered with an insulating pool blanket. Windbreaks, such as landscaping, also can prevent loss of heat, and heating elements, if permitted by electrical code requirements, and solar lines can be buried in the deck to keep snow from accumulating and to warm the decks for barefoot bathers. Locker rooms and deck areas also must be heated.

Shortly before allowing patrons to enter the facility, the pool blankets must be removed. The steam layer, which will rise over the pool and deck, will keep bathers remarkably comfortable in all but the most severe weather conditions.

Too many pool owners and managers make the mistake of closing the pool too early in the year, draining the pool and going into hibernation. By planning for the off-season operation and maintenance of outdoor pools, managers can gain valuable operating time and save expenses that will make spring start-up much easier.

*Alison Osinski, Ph.D., is the principal consultant with Aquatic Consulting Services, San Diego, Calif., and runs the Swimming Pool Hotline at (900) 446-6075, ext. 820.*



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