



Coping With Salt

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A number of builders link coping and deck damage to salt chlorine generators. Here, experts weigh in on the topic.

By Rebecca Robledo Service technician Greg Donoho didn't understand what had happened.

He was on a call to check a fountain made with beautiful, whitish limestone prevalent in his area of Texas, but he certainly didn't expect what he found.

"It really was tragic looking," says Donoho, who is director of IPSSA's Region 9, which covers Texas and Florida. "It looked like somebody had taken a claw hammer and

raked it across the top of the limestone coping. It had deep, deep grooves in it.

"The project was eight months old," he adds.

It was also, he points out, sanitized with a salt chlorine generator.

Long popular in Australia, salt chlorinators have taken the U.S. pool market by storm in recent years, with one manufacturer estimating that 65 percent of new pools



The damage done: Besides erosion on softer stone, some builders blame salt chlorination for grout dissolving out of joints (right) and concrete decks spalling (top). The problems seem to occur where wet and dry conditions exist, builders say, such as on the coping of this beach entry (bottom).

are equipped with the product. Builders and service techs like salt systems' automation, while consumers enjoy the water's softness.

But recently, a number of builders have reported damaged copings and other problems with salt chlorinated pools, particularly in Texas. Some homeowners in these regions have detected the erosion of stone around their vessels in as little as two weeks after the project's completion. Soft types of rock such as limestone seem particularly susceptible.

"The homeowners have been given a beautiful piece of art at quite an expense and then the rock begins to degrade," Donoho says. "But at the same time, they say, 'I really like my salt system. It's just done wonders for me.'"

Many builders are frustrated by what

they see as an unexpected blip in an otherwise excellent product. For their part, manufacturers of salt systems are working to understand the problem and devise dependable solutions. Meanwhile, the Australian pool industry has worked with salt chlorine generators for close to three decades with great success.

Builders: A rude awakening

For American contractors, this problem can be a serious, and costly, matter.

Lew Akins, a builder and consultant, says he has paid more than \$100,000 to replace hundreds of square feet of antique Lueders limestone. The variety is so popular that Akins buys truckloads at a time.

Noting that people were unhappy, Akins, president of Ocean Quest Pools by Lew Akins in Waco, Texas, says, "I just started replacing some of this stone."

In Arizona, Buzz Ghiz noticed the degradation approximately four years ago. It wasn't just stone either. The president of megabuilder Paddock Pools, Patios & Spas, a Scottsdale-based *Pool & Spa News* Top Builder, believes that anything cementitious was being attacked by the salt in the pool.

Affected builders seem adamant that salt chlorine generators cause the erosion. They say the only difference between today's problem pools and decades' worth of previous installations that have gone untouched is the salt chlorine generator. Guy Wood, president of Westside Pools in Fort Worth, Texas, performed an informal experiment. He installed a salt chlorination system on a display home a few months back, but did not run the equipment. After two months, the coping was still as good as new — unlike other installations that started off with salt chlorination and suffered damage in a few weeks' time.

The erosion in these pools seems to crop up in the coping, beach entries and spots where there's splash-out. This may occur because those areas repeatedly go from wet to dry. As the water evaporates, a residue of salt is left behind and over time, with repeated splash-out, it builds up and eventually spalls the rock, some theorize.

"Manufacturers say the water can't do any damage if it's got less than 6,000 parts per million of salt," Akins says. "But once it's evaporated, you have a million parts per million." Donoho says that freeze/thaw conditions can exacerbate the problem.

Builders deal with the problem in dif-

ferent ways. Akins, Ghiz and Wood require customers to sign agreements waiving builder liability if the coping goes bad.

Nevertheless, homeowners still request the product. "Every client is asking for a salt system," Wood says. Even those who have had problems with their coping say they would rather maintain the stone than give up their salt systems.

Wood seals the stone once, then he holds the homeowners accountable. They're supplied with as much information as possible. The literature explains that homeowners must monitor salt and chlorine levels because the machinery doesn't keep tabs. Wood suggests they hose off their decks after using the pools.

Other builders like the product so much that they choose to work around any problems rather than discourage its use. As a policy, Mission Valley Pools of San Diego avoids combining softer stone with a salt chlorine generator, says John Charron, construction superintendent at the firm, which is a *Pool & Spa News* Top Builder.

Others seek the right sealer. Donoho reports that members of the Independent Pool & Spa Service Association in Texas are using a product by Deck-O-Seal that's supposed to last three to five years. Another builder, Bob



Anderson, owner of Custom Design Pools in Friendswood, Texas, recently located a sealer manufactured in Australia that is warranted for 15 years when applied by an accredited professional. The product is called Stain Proof by Dry-Treat Pty. Ltd.

But there are some who think sealants alone aren't the solution. In Texas, an anonymous service professional began his own blog, thepoolbiz.blogspot.com. Entries discuss the problems he finds on salt pools, from stone erosion to metal corrosion. He investigates the technology used on the equipment that measures salt and chemical levels and whether it's accurate. He even discusses the environmental implications of generating saltwater.

To put it bluntly, he wants salt chlorine generators eliminated. "With other products out there, when there was a defect, it would just malfunction or fail," says the blogger, who prefers to remain anonymous to avoid backlash from local distributors. "But this is the only product I've seen that actually damages the whole pool."

Some builders question manufacturer reports that the stone erosion only happens in Texas and Arizona, and with softer stones. The blogger says he's beginning to see erosion on Pennsylvania bluestone, a hard variety used widely in the Northeast.

For Akins, this makes complete sense. "Salt is corrosive, no matter what," he says. "Some substances just take longer to become damaged." But East Coast builders still aren't reporting widespread erosion problems on their saltwater pools.

Manufacturers: looking for answers

For manufacturers of salt systems, these regional complaints of stone erosion now stand front and center. That's why seven of them met last November to examine the issue.

The group plans to conduct research on the topic and have data available by next pool season to share with builders. Ultimately, the alliance plans to commission an independent study about salt chlorination and various stone materials, says David Nibler, vice president of marketing and business development at Jandy, a Petaluma, Calif.-based equipment manufacturer.

The manufacturers want to confirm the reactions of different types of stone to the salt-chlorinated water, and also look at whether sealers can prevent the erosion. In addition, the group sees the problem as complex, and plans to examine all factors, such as the effects of unbalanced water and chemical additives. "There are

lots of other things that go on in a pool now," says Stuart Baker, vice president and general manager of Goldline Controls, an equipment manufacturer based in North Kingstown, R.I.

Finally, they also want to find out if specific chemicals might help. "One pool builder I've talked to does not see this particular problem, and he adds a sequestering agent," Baker says.

Consumer error also must be considered, the group says. Because the product is automated, some homeowners believe the pool takes care of itself.

For the most part, the manufacturers aren't convinced that salt chlorine generators bear the blame. "It could be something else that's causing this," Baker says. "So we need to do some testing."

Some manufacturers say they haven't received complaints about degrading rock. Furthermore, they claim that the salt content in such pools is too low to cause damage.

"I think most of those incidents are more related to pool-chemistry issues than having 3,000 parts per million of salt in the pool," says Don Detwiler, vice president of sales at AquaCal/AutoPilot in St. Petersburg, Fla. He points to concrete seawalls found in Florida. "There



are 35,000 parts per million of salt in seawater, and you really aren't seeing any deterioration on the seawalls."

Manufacturers also say that pools sanitized with regular chlorine eventually develop a salt buildup. After a while, they say, the vessels will have the same salt levels as those with chlorine generators.

A group of pool salt-system manufacturers plans to conduct research on stone erosion and have data to share with builders by the next swim season.

Baker's instincts tell him the stone material on these pools just needs to be sealed. "If anybody were to install natural stone in a bathroom, you'd have to seal it," he says.

For its part, Jandy plans to enhance its literature. A plan calls for verbiage that would suggest asking masons and quarries which varieties of stone are more suitable for pools and encourage diligent chemical balance.

At this point, manufacturers still say their products are appropriate for all installations. "We have absolutely no reservations to put them on any pool," says Bob Trepp, principal at Pool Thing, a salt chlorine generator manufacturer in Tempe, Ariz.

The Aussies: been there, done that

In the land down under, salt chlorine generators have been popular for more than two decades. Australian professionals estimate that more than 90 percent of their pools have the devices.

They've found problems with salt-chlorinated pools, but discovered ways to work around them. "It's about 10 years ago that all the issues and problems were solved, and we just moved onto better practices," says Mark Naughton, managing director of Naughton's Poolside in

Echuca, Victoria, Australia. "There's no one specific answer."

The Australians don't use as much natural stone as Americans. Still, they've seen erosion, so they seal the softer varieties. In many cases, they even seal manmade products.

"The paving industry says you need to seal the pavers around salt pools," says Cliff Cooke, managing director of Cooke's Pools & Spas, in Mildura, Victoria. Paver manufacturers there also recommend avoiding porous products.

More often, the mortar between clay and cast-concrete "copers" erodes, causing pieces to delaminate. In response, the Australian industry makes a heartier concrete. "We used to just mix two [parts] cement per five sand," Naughton says. "Now we do two parts sand and one part cement so the mix is a lot stronger and the salt isn't as detrimental."

They also noticed that light rings, diving stands and other metal parts would corrode. That problem was remedied by using higher-grade stainless steel.

The industry has found other ways to adjust its practices as well. For example, only plants that can tolerate salt-water are used. More importantly, builders dispel the myth that a salt pool requires

no maintenance.

"People tend to neglect the [salt] pools a lot more," says Jack Jakovac, managing director of Majestic Pools & Landscapes in Brisbane, Queensland. He found that clients who meticulously maintained their pools, particularly those who watched pH and salt levels, were less likely to have problems.

"Sometimes the customer will throw salt in without having their pool tested," Naughton says. "If they run their salt levels over 5,000 ppm, it will corrode the pavers a lot faster."

While the chlorine generator takes care of the sanitation of the water, other chemical parameters must be monitored and managed. The pH, in particular, has a tendency to go up on salt pools. Australian industry pros also caution homeowners to lower the chlorine production when covering the pool. Without the sun's ultraviolet rays depleting the chlorine, the chemical will accumulate under the cover.

"Rather than throwing the baby out with the bath water, the industry started installing different types of coping and using sealers to give it as long a life as possible," says Glen Rose, director of Jaymac International in Brisbane, Queensland. ■

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