

The Concrete Producer

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Concrete Wins!

California Producers Prevail in Court Battle

Tim Toland, president of National Ready Mixed Concrete, stands by his product.

NATIONAL READY
CONCRETE

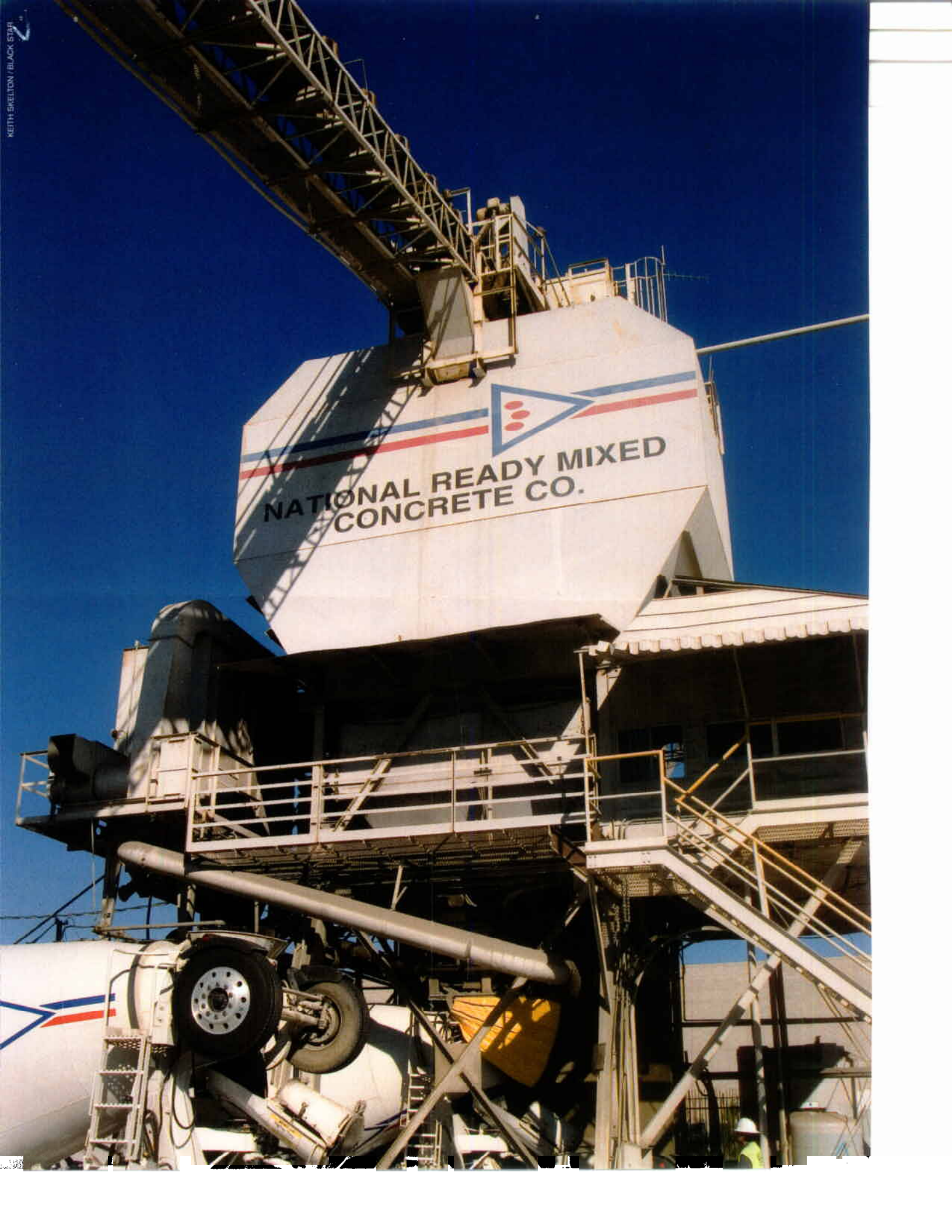


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Judgment Day

They are attractive houses, with flagstone paths and two-story entryways, lined up on quiet cul-de-sacs just three minutes from the freeway in Mission Viejo, Calif. They are comfortable homes, 2,000-2200 square feet each, with current asking prices approaching \$900,000.

All seems fine to an ordinary passerby. "California Dreaming," one might think.

But about six years ago, their owners were warned that these houses were full of defects and could be crumbling under their feet. That was the genesis of the lawsuit, *Castron v. Fieldstone Pacific*, in which the concrete producer defendant, National Ready Mixed Concrete, stood its ground, went to trial, won, and even got a judgment against the homeowners to pay for defense costs.

Although the appeal will likely last well into summer 2007, there are already indica-

tions this case has changed the climate of sulfate attack claims. There are also considerable doubts about the future, because new laws and changed building codes may alter the ground rules completely.

The trial concerned external sulfate attack, which has been at the center of millions of dollars in litigation the past 12 years. Sulfates dissolved in groundwater are alleged to seep into concrete foundations and slabs and react with chemicals in the concrete. They form microscopic crystals, which break down the structure of the concrete.

For sulfate attack to occur, there must be sulfates in the soil, they have to get into the concrete, and the concrete must contain the chemicals that react with them. When the phenomenon was discovered more than 50 years ago, special types of cement were developed, Type II and Type V, which resist sulfate attack because they

► California producers successfully defend themselves in court against sulfate attack allegations.



Facing page: National Ready Mixed Concrete Co. successfully defended itself in a lawsuit alleging concrete it sold was subject to sulfate attack. **Left:** The Castron home in the Pacific Hills section of Mission Viejo, Calif., was one of 25 homes involved in the original lawsuit.



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— Joe Ferrentino, attorney with Newmeyer & Dillon.

contain less of the chemicals that react with the sulfates.

Code changes

For decades, Southern California residential projects built on soils containing sulfates were specified for 2000-pound concrete using Type V cement. In 1985, the Uniform Building Code regarding sulfates was changed. A sulfate resistance table was added, which called not only for sulfate-resistant cement, but also a lower water/cement ratio: 0.5 for moderate sulfates, 0.45 for severe sulfates. That translates to about 4500-pound concrete. Theoretically, this denser concrete would be less permeable to groundwater and the sulfates dissolved in it.

The legal problems arose because the code changed, but the practice in Southern California did not. “Engineers kept specifying 2000-pound concrete even when they found severe levels of sulfate in the soils,” says William Ingalsbe of Monteleone and McCrory, the lead attorney who defended National Ready Mixed Concrete. “They would specify Type V cement, which, in practicality, had worked for the past 30 years.

“Some engineers believe the code was

never intended to apply to residential concrete,” explains Ingalsbe. “Residential concrete falls within the definition of ‘plain concrete’ under the code, different from reinforced or structural concrete. Arguably, the requirement for sulfate resistance applies to all concrete, but engineers never interpreted it that way. No building official ever interpreted the code to apply to residential construction or required them to use 4500-pound concrete.”

Concrete producers were caught in the middle. “The engineer designs the concrete. He is the guy licensed by the state of California to do so, not the ready-mix supplier,” says Ingalsbe. “Developers kept issuing specifications designed by their engineers, and ready-mix suppliers kept supplying orders with 2000-pound concrete.”

The California law firm Kasdan Simonds Vaughan & Riley specializes in construction defect lawsuits. In 1994, it pioneered sulfate attack litigation by adding it to the list of defects alleged in a suit on behalf of five high-end homes in Yorba Linda, Calif.

In *Emery v. Brighton Estates*, the Kasdan attorneys argued that the concrete did not conform to the Uniform Building Code, the soils had tested positive for severe sulfates in some of the lots, and therefore, the concrete had to be ripped out and replaced. The case was settled out of court for \$630,000 per home, higher than the original purchase prices in some cases.

Sulfate litigation then spread throughout the state, with most cases settled out of court. Construction defect suits have resulted in settlements worth “many millions of dollars” for their clients, according to Kasdan Simonds’ Web site. Adding in attorneys’ fees and experts’ fees, “a couple of billion dollars have changed hands in the last few years,” says Ingalsbe.

Kasdan Simonds won a jury trial based largely on sulfate attack for the first time in 1998 in Orange County, resulting in a \$1.75 million judgment. Only three suits before Castron went through trial to a judgment. The plaintiffs won them all.

Kasdan Simonds became a leading force in construction defect suits in California. They issued press releases with headlines

like, “GOT ANY CONCRETE PROBLEMS?” and “DEFECTIVE CONSTRUCTION OF YOUR HOME: DON’T PUT UP WITH IT!” They also advertised in newspapers and magazines.

Apparently, they also did direct advertising, which is how Castron began. In 2000, homeowners in Mission Viejo received mass mailings from Kasdan Simonds. “The letters informed them of defects in their houses, and encouraged them to contact the firm,” says Ingalsbe. “If they didn’t respond to the first letter, they got a second letter, and even a third letter.”

Eleven homeowners, including the Castrons, filed suit. The developer, Fieldstone Pacific, was named a primary defendant.

The complaint

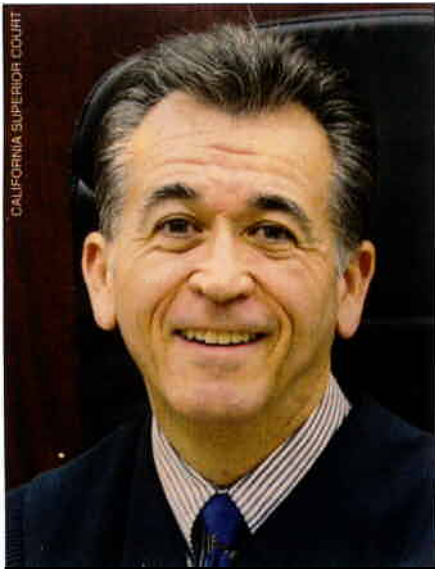
The homeowners “saw efflorescence and fretting of the concrete,” says Michael Turner, the Kasdan Simonds attorney who took the case to trial. They approached the developer with their complaints. Turner adds that Fieldstone began replacing some of the concrete and then stopped. The homeowners then filed suit.

Joe Ferrentino, the attorney with Newmeyer & Dillon who represented Fieldstone Pacific and has battled Kasdan Simonds in



“Homeowners saw efflorescence and fretting of the concrete

— Michael Turner, attorney with Kasdan Simonds



“There is insufficient evidence to prove the concrete supplied by National was damaged by external sulfate attack.”

— Judge David C. Velasquez

almost 20 cases, says homeowners called the attorneys because they had window and roof leaks. “I have not seen one case where a homeowner was concerned about their concrete until they met Mr. Kasdan’s firm,” he says. Fieldstone did not replace any concrete, he adds.

Indeed, the lawsuit alleged a wide range of defects. This appears to be a personal cause for Kasdan Simonds attorney Barry Vaughan, who is eloquent about the quality of modern construction. When he describes being a boy in California and watching the first mass-produced homes being built, one senses a feeling of loss, perhaps even betrayal, at the changes wrought by the post-World War II building boom.

“We were appalled at the quality of the work,” says Vaughan. He declares emphatically that he would far prefer to live in a 65-year-old, individually built pre-war house than a modern tract home.

The *Castron* complaint lists eight areas of defects, including windows, roofs, waterproofing, plumbing, electrical and mechanical systems, and concrete foundations and flatwork. The final element of the complaint states, “The concrete violates provisions of

the Uniform Building Code with regard to the type of concrete used and the water-cement ratio of the concrete, resulting in excessive porosity, which permits sulfate attack.”

Kasdan Simonds conducted testing at the houses and determined that there were extreme sulfate levels present at some place on every lot in question, says Turner.

“There wasn’t any damage,” Ferrentino states flatly.

The suit was filed Jan. 15, 2002. In addition to the developers, the suit eventually named 49 defendants or cross-defendants, including concrete suppliers and installers. Many defendants also became cross-complainants as everyone counter-sued each other in self-defense. Forty-one law firms became involved.

The number of homes grew to 25 as two other suits were filed. The cases were consolidated and, in May 2003, assigned to Superior Court Judge David C. Velasquez.

The original concrete supplier for 19 of the 25 houses, United Ready Mix, had been bought by National Ready Mixed Concrete, of Encino, Calif., during the intervening eight years, so National inherited the suit. Standard Concrete Products Inc., of Santa Ana, supplied concrete for the other six houses.

The only defendants who didn’t settle out of court were the concrete producers. “Fieldstone had been sued on a number of claims by the Kasdan firm, and by the time we got to *Castron*, we were pretty fed up with bogus concrete allegations,” says Ferrentino. “The company wanted to fight all the concrete claims through trials, but the insurance company decided to resolve its claims.” Asked how much Fieldstone paid, Ferrentino replies, “Too much.”

Not enough defendants stand up to the Kasdan suits, says Tim Toland, president of National Ready Mixed. “People settle, and that’s why they’re still doing this stuff. People don’t want to take the time and spend the money.”

“I think even in the settlement cases, those slabs have not been removed,” adds Don Unmacht, president of National Cement, parent company of National Ready Mixed. “Sulfate attack hasn’t appeared to

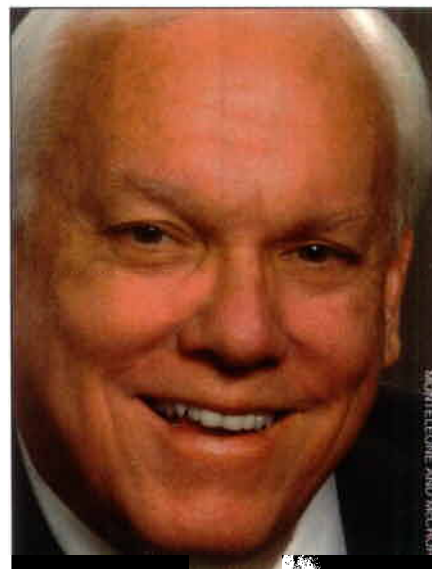
be the major problem in residential construction, which the proponents of such suits claim.”

Indeed, while defending an earlier case, the Newmeyer & Dillion law firm researched Kasdan Simonds’ previous concrete cases. According to Ferrentino, they investigated 150 to 200 houses that had won either judgments or settlements for sulfate attack. “We didn’t find any that had a building permit to repair the concrete,” says Ferrentino.

“I challenge the Kasdan firm to point out homeowners who have taken this money they’ve gotten and used it to repair their concrete,” adds Ingalsbe. “I believe they’ve used it for vacations, to buy cars, and to send their kids to college, but not to repair concrete. That tells me that these cases do not have merit.”

Trying to settle

Settlements from all the other defendants probably amounted to \$60,000 to \$70,000 per home, according to Ingalsbe and other sources. During the trial, one homeowner testified that he received about



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\$20,000, the rest having gone to pay the attorneys and their experts.

The concrete producers actually tried to settle the *Castron* suit. In April 2004, National offered \$1000 per home, which was rejected. Standard made a similar offer. The plaintiffs were demanding \$10,000 per home for the concrete complaint. In June 2004, National increased its offer to \$3001 to settle. Ingalsbe recalls that the plaintiffs rejected it and increased their demand to \$25,000.

The settlement demands stand in stark contrast to the monetary claims made in the trial, where the plaintiffs asked for more than \$200,000 per home for repairing the concrete, alternate housing, loss of use, and related expenses.

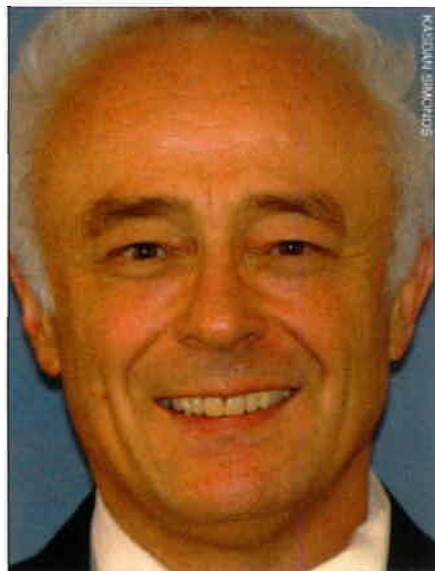
Their proposed repair method involved isolating the concrete from the surrounding environment with an epoxy grout, including drilling holes in slabs and injecting epoxy underneath. Around the foundation perimeter, they proposed digging a trench and installing .45 water/cement ratio concrete, married to the original foundation with steel dowels.

This method was actually first suggested about eight years ago by Geoffrey Hichborn Sr., president of the Hichborn Consulting Group and a nationally recognized concrete expert who was a key defense witness in *Castron*. It was suggested by the defense in a different case, as a less expensive alternative to jacking up the house and replacing all the concrete. What they had expected to do with a \$25,000 settlement remains unsaid.

Junk science

In a pre-trial hearing, the defendants asked the judge to exclude much of the plaintiffs' scientific evidence under California's Kelly-Frye rule, which is intended to prevent a jury of laymen from being overwhelmed by scientific evidence which they are not qualified to evaluate. The plaintiffs also challenged one of the defense's methods.

On Nov. 29, 2004, the day the Kelly-Frye hearing was set to begin, the plaintiffs waived the right to a jury trial, but Ingalsbe convinced Judge Velasquez to hear



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the expert testimony anyway and rule on its admissibility.

The evidentiary hearings took five months. Ingalsbe and Hichborn argued that the plaintiff's methods were not “generally accepted in the relevant scientific community,” and in some cases, that the tests were not performed properly.

In June 2005, the judge ruled, allowing the defense's strength-testing evidence and excluding five out of six types of the plaintiffs' technical evidence. This decision was later widely publicized as “Judge Throws Out Junk Science.”

Vaughan points out that the judge never said “junk science,” and traces that term solely to a public relations firm's press releases. He says some of the plaintiffs' evidence was excluded, not because it was junk, but because it was cutting-edge.

Under the rule, “If it's new and it's novel, it doesn't matter whether it's right or wrong. It's not admissible,” says Vaughan. “There have been numerous instances in which the law has kept evidence out because it's not generally accepted. Then the

scientific community catches up with the innovator and that kind of testimony is then accepted.”

The trial

In July 2005, on the day the trial was to begin, the plaintiffs made Standard an offer which “our client couldn't refuse,” says Standard's attorney, Mark Petersen. Sources put that figure at more than \$8000 per house.

Asked why the plaintiffs would settle with Standard and not with National, Petersen suggests that Standard had “some factual and expert advantages” that may have made the risk of trial less appealing to the plaintiffs. Turner recalls that Standard had concrete delivery tickets indicating what type of cement was used; none were available for National. “Some of the defendants had floods and fire that destroyed documents,” adds Turner. “We would never suggest it was deliberate. It's just odd.”

The next phase began Aug. 1, 2005, with National as the sole defendant.

Many issues were contested. Ten-year-old records were incomplete or contradictory. It was never agreed whether Type V cement, Type II cement, or Type II with fly ash had been used. There was general agreement that the strength was 2500 pounds or less. The plaintiffs argued that if Type V or Type II cement was ordered, that should have put the supplier on notice of sulfate conditions, and that a .70 water/cement ratio was not appropriate, so the producer had failed in his responsibilities. The defense argued that there was no damage to the concrete and no evidence of sulfate attack.

The judge rules

Judge Velasquez ruled on Dec. 19, 2005, that “the plaintiffs and cross-complainants (homeowners) did not carry their burden to prove by the preponderance of the evidence that the concrete supplied in the construction of their homes by the defendant and cross-defendant (National) was defective,” the judge wrote.

They did not prove the concrete was incorrectly proportioned or contained the wrong type of cement. Finally, he ruled there was insufficient evidence that the concrete

was damaged by external sulfate attack.

The judge's ruling contains a thorough explanation of sulfate attack, with details about the pattern of cracking, angles and shapes of cracks, and the appearance of their edges. He also notes that discovering various symptoms of sulfate attack is not enough; they must be "observed to be operating in relationship to one another."

Judge Velasquez said the plaintiffs failed to prove the water/cement ratio was incorrect, adding that it didn't even matter because the concrete was chemically sulfate-resistant.

"Because Type II cement with a class F fly ash was also used in the mix, the concrete was fundamentally durable against sulfate attack," he wrote.

He suggested that the only evidence of actual damage presented, spalling at the leading edges of the garage slabs, was "most likely caused by improper floating and edging techniques used by the installer."

Who pays?

Castron was the first sulfate attack case that was successfully defended. The defense then asked the court to make the plaintiffs pay for defense expenses. Two kinds of expenses are eligible. Court costs totaling \$150,000 are unquestioned. The judge can also consider the defendant's expenses for paid experts (attorney's fees don't count) under two conditions:

1) The winning party had to have made a good-faith offer to settle, which was rejected; the defense made an official settlement offer of \$3001 per house.

2) The losing party had to do worse as a result of trial than they would have by accepting the offer; the *Castron* plaintiffs lost and got nothing at trial.

Ingalsbe's claim for expert's fees totaled more \$2 million.

Vaughan argued that the \$3001 settlement offer was not made in good faith, and therefore didn't qualify. The defense argued that, historically, the average settlement of sulfate attack claims is about \$2000, so the \$3001 offer was credible and made in good faith. The judge ruled that the fact that the defense won (they had a defensible case but tried to settle anyway) was evidence that it was a good faith offer.

In July 2006, Velasquez ruled half of the defense's \$2 million—the portion racked up before a September 2004 settlement conference—was a reasonable investment. Beyond that date the expenses didn't make strict business sense on either side, he said. He addressed a central problem for defendants: "There is the great temptation by plaintiffs to use the cost of litigation to bludgeon a settlement out of a defendant."

Considering the homeowners' limited ability to pay, he awarded only one-third of the allowed costs, \$357,767, to be split among 19 homes. Added to the court costs, it came to about \$26,700 per home.

The appeal was filed in August 2006. The court costs are automatically stayed

Sulfate Attack: A Breakdown

Sulfate attack is a breaking down of concrete caused by crystal formation in the concrete's natural microscopic voids. External sulfate attack—the kind alleged in most of the California lawsuits—results from sulfates in the soil becoming dissolved in groundwater and penetrating the concrete. The sulfates react chemically with free calcium hydroxide and tricalcium aluminate (commonly called C3A), normal products of portland cement hydration.

The reaction forms ettringite (calcium sulphoaluminate) and gypsum (calcium sulfate) crystals, which take up more space than the separate chemicals that formed them. It is much like water crystallizing into ice and expanding. The growing ettringite and gypsum crystals push against the sides of the void; when the crystals are big enough, the cement paste gets cracked. If this happens in enough of the voids, the concrete begins to crumble.

In concrete that suffers sulfate attack, certain symptoms would be observed happening together, although this interaction may only be observable with a microscope. A forming crystal pushes outward in all directions, so cracks would move outward from a central point; a crack with one wide end and one narrow end would not be typical. The cracks would join at 120-degree angles, as opposed to 90-degree angles, which is more typical of dry shrinkage.

The cracks typically have smooth edges, not stair-stepped edges. The voids would be filled with ettringite, distributed in a connected way; isolated deposits of ettringite are common in healthy concrete. Efflorescence occurs during sulfate attack, but it also occurs in healthy concrete, and by itself can't be considered a symptom of sulfate problems.

Cement containing less tricalcium aluminate resists sulfate attack. Type II cement, for moderate sulfate conditions, can contain no more than 8% tricalcium aluminate by weight. Type V cement, for severe sulfate conditions, can be no more than 5% tricalcium aluminate. Theoretically, if sulfates do penetrate the concrete, they will have less tricalcium aluminate to react with, minimizing damage.

Denser concrete with fewer and smaller pores is less permeable to groundwater and sulfates that may be dissolved in it. Using a lower water/cement ratio makes the hardened product denser and less permeable, therefore "mechanically" resistant to attack.

Pozzolans like fly ash, silica fume, or high reactivity metakaolin, also help resist sulfate attack. Fly ash binds with free calcium hydroxide, thereby making it unavailable for sulfate reactions. It also makes the concrete denser.

Isolating concrete from groundwater also helps. Sulfate attack typically only occurs where the groundwater table is high or where there is improper drainage, so dissolved sulfates have access to the concrete. Standard construction practices for drainage and a moisture barrier under slabs help isolate concrete from external sulfates.



Concrete has deteriorated due to sulfate attack.



Left: Batchman Richard Bowman (left) talks with Tim Toland, president of National Ready Mixed Concrete Co., at its plant in Van Nuys, Calif.

during the appeal. Vaughan says that the discretionary costs, \$357,767, have been paid, but he will not say by whom.

The lessons

First, the *Castron* decision sets no legal precedent. It does not protect anyone from anything in any other case. No judge is bound by the decision. Only other Orange County judges may, if they wish, rely on the pre-trial evidentiary rulings. Beyond that, any future case must stand on its own.

Second, the case is a landmark, but perhaps more psychologically than legally. "We tried three cases that resulted in judgments that there was sulfate attack," says Vaughan. "Now we have one case where the finding was to the contrary."

Ingalsbe stresses that homeowners were ordered to pay costs. "Mass mailings go out to a tract and people are encouraged to file lawsuits, told that they could recover hundreds of thousands of dollars, and there's no downside to it," he says. "Now, there's a decision that prevents plaintiff's attorneys, ethically, from saying there's no downside."

Third, the case may be a turning point. Insurance industry sources say that settlements for sulfate attack on concrete have dropped dramatically, to about \$500 per home, since the *Castron* decision.

But suits are still being pursued, with ongoing cases in San Diego and Scottsdale, Ariz.

Two changes in the law may yet alter the landscape of sulfate attack suits. One affects only California, which has been the scene of most cases until recently. A law covering houses built after 2003 removes

the requirement to prove damage. A plaintiff only needs to show that the concrete does not meet the applicable building code. Few of these cases have come up yet, but interested parties on both sides say it will have an impact.

Those on the concrete industry side seem worried. Ingalsbe notes the long list of specific requirements in the bill, such as, "The concrete shall not contain significant cracks." "What does that mean?" he asks.

Petersen, the attorney for Standard, perceives the potential for a dramatic increase in lawsuits against placement contractors, general contractors, and suppliers. "It could have a significant effect on the cost of housing in California," he says.

ACI responds

More recently, in November 2006, the American Concrete Institute clarified ACI 318, the source of the Sulfate Resistance Table in the Uniform Building Code. Kasdan Simonds has repeatedly claimed that concrete which does not meet the table's requirements is illegal. Defense attorneys and their experts have claimed that the table was never intended to apply to residential concrete.

ACI 318 has verified that its application to residential concrete was not its intention, and eliminated the table from the residential concrete code, effective in 2008. It remains to be seen whether that decision will influence cases of concrete poured under the older code.

There is discussion in the concrete industry about possible changes in practices to provide better legal safeguards, such as changing the language of delivery tickets.

Also, Kasdan Simonds' Vaughan hopes for a better way to move these cases through the court system. He advocates settling quickly. "You don't want all the money to go to the lawyers and the experts and not get the homes fixed. You also don't want to have a litigation process where you spend as much money fighting over the case as you do getting rid of it. They claimed \$2.2 million for a matter that could have been settled for under \$200,000. That is a very expensive process. It looks like it was designed by the Pentagon."

Vaughan is also passionate about what he sees as the cause of the problem. "We're all under competitive price pressure," he says. "My industry exists because there has been a significant decline in the quality of construction because of the constant pressure to save costs in materials and, more importantly, in labor. Despite all the puffing you see in every Sunday supplement about the wonderful new entry-level homes, the quality of those homes stinks."

"But consider the difference in cost between concrete that would be corrosion-resistant and fully satisfy the code requirements, and concrete that clearly doesn't," Vaughn adds. "If suppliers don't resist those pressures and don't insist on delivering a quality product, they can wind up getting sucked into these things."

For producers responding to future lawsuits, perhaps the least biased opinion comes from the insurance industry. Insurers want to avoid paying claims, but they have no stake in one strategy over another. CNA, National's insurer, apparently felt that a \$3 million to \$4 million fight was worth it for the long-term goal of discouraging unfounded lawsuits.

National Cement's Unmacht echoes that sentiment "You've got to look at the facts clearly and say, 'is this a claim that we should deal with as responsible people, or is this a totally bogus thing where somebody's trying to get some money out of us,'" he says. "The facts didn't support the claim against us, and therefore you have to stand up and be counted. Otherwise you can't be a viable business." **TCP**

Author Steven H. Miller is a California-based freelance writer.