Long, continuous cracks in a concrete pool floor are one of those problems that make owners nervous and contractors cautious, and for good reason. A spider crack or surface craze in plaster is cosmetic. A structural crack that runs across the pool shell is a different animal entirely. When that crack is in the floor, you are dealing with the part of the pool that carries both water and soil loads. If you misjudge it, the shell can keep moving, the crack will reopen, and you will be right back where you started, just poorer and more frustrated.

Carbon fiber grid reinforcement has changed how we approach these repairs. It does not replace structural judgment, and it is not magic. But when it is combined with proper diagnosis, dewatering, substrate prep, and crack treatment, it can provide a strong, noncorrosive reinforcement across long spans that would have required far more invasive work a decade ago.

This article walks through how an experienced concrete or pool professional thinks about long floor cracks, when a carbon fiber grid is appropriate, and how it fits with staples, injections, and other repair methods.

# First, understand what kind of crack you are dealing with

Before you talk about carbon fiber, you need to be sure about the problem you are trying to solve. Pool shells are usually gunite or shotcrete, and both can crack for multiple reasons. Lumping them together leads to the wrong repair.

**Business Name:** Adams Pool Solutions
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# People Also Ask about Adams Pool Solutions

## What services does Adams Pool Solutions provide?

Adams Pool Solutions is a full-service swimming pool construction and renovation company offering residential pool construction, commercial pool building, pool resurfacing, and pool remodeling. Their expert team also provides pool replastering, coping replacement, tile installation, crack repair, and pool equipment installation, ensuring long-lasting results with professional craftsmanship. Learn more at https://adamspools.com/.

## Where does Adams Pool Solutions operate?

Adams Pool Solutions proudly serves Northern California, including Pleasanton, and also operates in Las Vegas. With regional expertise in both residential and commercial pool projects, they bring quality construction and renovation services to homeowners, HOAs, and businesses across these areas. Find them on Google Maps.

## Does Adams Pool Solutions handle commercial pool projects?

Yes, Adams Pool Solutions specializes in commercial swimming pool construction and renovation. Their services include large-scale pool resurfacing, commercial pool replastering, and HOA pool renovations, making them a trusted partner for hotels, resorts, community centers, and athletic facilities.

## Why choose Adams Pool Solutions for pool renovation?

Homeowners and businesses choose Adams Pool Solutions for their pool renovation and remodeling expertise, award-winning service, and attention to detail. Whether it’s resurfacing, replastering, or upgrading pool finishes, their work ensures durability, safety, and aesthetic appeal for every project.

## What awards has Adams Pool Solutions received?

Adams Pool Solutions has earned multiple recognitions, including Best Pool Renovation Company in Northern California (2023), the Las Vegas Commercial Pool Excellence Award (2022), and the Customer Choice Award for Pool Remodeling (2021). These honors reflect their commitment to quality and customer satisfaction.

## What are the benefits of working with Adams Pool Solutions?

Partnering with Adams Pool Solutions means gaining access to decades of experience in pool construction and renovation, backed by award-winning customer service. Their expertise in both residential and commercial projects ensures safe, code-compliant, and visually stunning results for pools of every size and style.

### How can I contact Adams Pool Solutions?

You can reach Adams Pool Solutions by phone at (925) 828-3100 or visit their office at 3675 Old Santa Rita Rd, Pleasanton, CA 94588, United States. Their business hours are Monday to Friday, 8 AM to 4 PM. More details are available at https://adamspools.com/.

### Is Adams Pool Solutions active on social media?

Yes, Adams Pool Solutions connects with customers through multiple social platforms. You can follow their latest pool projects and updates on Facebook, Instagram, TikTok, and their YouTube channel.



A surface craze is a network of hairline cracks in the plaster or cement paste, often shallow and random. Spider cracks around steps, benches, or the spa dam wall often live only in the finish. These are ugly but typically not structural. You can grind and apply a plaster patch or pool putty, or, if extensive, plan on a full replaster.

A long, continuous crack in the floor that you can follow for several feet, especially if it lines up with other symptoms like coping separation or a bond beam crack, is more serious. When you see a crack that:

- Runs generally straight or with a gentle curve across the floor for several feet or more
- Has one side higher than the other, even by a few millimeters
- Shows signs of past movement, such as chipping, spalling, or repeated plaster repairs
- Lines up with rust spots, tile line crack sections, or a skimmer throat crack above

You are probably looking at structural movement of the pool shell. That might be from soil movement, hydrostatic pressure, poor engineering of the original shell, or long-term rebar corrosion weakening the section.

At this stage, leak detection also matters. A long crack in a pool floor may or may not be a leak path. Running a proper leak detection test before you open the concrete tells you whether you also need to address water loss, not just structure. Dye testing along the crack, pressure testing plumbing, and listening around fittings helps to separate a structural crack that leaks from an old crack that is mostly done moving.

## Why pool floors crack in long lines

Understanding the cause informs both whether carbon fiber grid is appropriate and how you detail the repair.

Hydrostatic pressure and water table issues are common culprits. When groundwater rises under a pool, it pushes up on the shell. If the pool is empty or low while the water table is high, the upward pressure can lift the floor slightly. Gunite and shotcrete shells are strong in compression but less strong in tension. A long, even uplift tends to create a broad crack where the shell stretches. The crack often runs near the center of the pool or along a weak zone created by construction joints.

Soil movement adds complexity. Expansive clays swell and shrink with moisture, putting cyclical pressure on the underside of the pool. If one section of soil swells more than another, you get differential movement. The pool tries to bend, and the tension side cracks. Again, the crack usually follows the weakest line in the shell.

Rebar corrosion turns up in older pools, especially where waterproofing has failed or there are long-standing leaks. Corroding steel grows in volume, pushing outward on the concrete and leading to concrete spalling. You see rust spots in the plaster, sometimes in a line that roughly follows a rebar mat. When a long crack runs where the rebar has been corroding, you are dealing with both loss of steel section and internal expansive pressure.

Bond beam crack and coping separation are more about the top of the shell, but they often share the same root causes: movement, water ingress, and corrosion. If you see coping separation on one side of the pool and a long floor crack that

points toward that wall, you need to think of the shell as a whole. The carbon fiber grid in the floor can only do so much if the surrounding structure is already compromised.

## When does a carbon fiber grid make sense?

There are situations where a long floor crack is better addressed by major structural work, partial shell replacement, or even pool removal. Carbon fiber grid reinforcement is not a fix for a shell that is still moving significantly or for a site with ongoing, uncontrolled hydrostatic problems. It is most effective when:

You can control water. If hydrostatic pressure and a high water table are the main drivers, you need a permanent way to keep forces within a manageable range. That might mean adding or repairing hydrostatic relief valves, improving drainage around the pool, or even installing a dewatering system for severe sites. The grid locks the crack, but it cannot fight a lifting shell that keeps trying to move.

The crack has largely stabilized. You look at the age of the crack, review old photos if available, chip exploratory windows along the line, and talk to the owner about how long it has been visible. If the elevation difference across the crack has not changed in years, or the owner has not seen fresh spalling or plaster delamination for a long time, the odds of a stable condition are higher.

The shell around the crack has acceptable strength. Core samples, sounding, or even aggressive pneumatic chipping along the crack will tell you whether the adjacent concrete has good aggregate bond and density. If half the pool floor is honeycombed or rotted from rebar corrosion, a grid is a bandage on a structural problem that needs a much broader fix.

You need reinforcement without adding significant thickness. In a pool floor, you do not always have room to raise the finish significantly. Steps, drains, and tile lines are all set to existing elevations. A carbon fiber grid works within a relatively shallow cut and thin overlay, compared to tying in new bar and pouring several inches of concrete.

When those conditions are met, a carbon fiber grid, combined with structural staples and proper crack treatment, can distribute loads across a long cracked region and prevent that crack from reopening adamspools.com pool crack repair through your new finish.

## The role of structural staples and Torque Lock staples

Before carbon fiber grid systems were common in pool work, structural staples were a primary tool for bridging individual cracks. They still are, and the best repairs often use both staples and grid.

Structural staples, including branded systems like Torque Lock staples, are essentially preformed steel or composite bars set across a crack in slots cut into the concrete. Once embedded and locked, they act like small, local tension reinforcements that clamp the two sides together. Torque Lock staples use a mechanical tightening system to apply clamping force.

On a long floor crack, you rarely rely on staples alone. You would need them every foot or so, and the forces are not always localized that way. But placing structural staples at key points along the crack helps control localized opening and provides positive mechanical continuity while the carbon fiber grid takes over the broader role of spreading load and resisting flexural tension.

A typical professional approach is to evaluate whether high stress points exist along the crack: where it intersects with a wall, meets a main drain, crosses a construction joint, or passes under a heavy feature like a boulder water feature. Those locations are good candidates for structural staples in addition to the grid. You want redundancy where stress will be highest.

## Preparing the pool and substrate for serious structural work

Pool floor reinforcement work is not a one-afternoon patch. You are going to empty the pool, manage groundwater, and make a serious mess before it looks better.

First comes dewatering. If the site has a history of a high water table, you do not drain the pool without a plan. That might include pre-pumping nearby wells or pits, using relief plugs in the floor, or setting temporary well points with a pump running while the pool is empty. The goal is to prevent uplift on the shell while you work. Improper dewatering has ruined many good repair plans.

Once the pool is safely empty and stable, you map the crack. That includes tracing the visible line, sounding along it with a hammer, and often chipping small windows across it to see depth and character. Sometimes what looks like a single line at the plaster surface is a wider fractured zone in the shell.

Substrate prep starts with mechanical removal. Pneumatic chipping is typically used to open the crack to competent concrete. You are not just widening a hairline so epoxy can flow; you are excavating a trench centered on the damaged zone. How wide and deep depends on the grid system design, but 4 to 8 inches wide and at least an inch or two deep is common, sometimes deeper if the crack has created a real hinge.

During chipping you watch for rebar. Exposed steel is cleaned and evaluated. If it is lightly rusted but has not lost meaningful section, you can clean to bright metal and coat it with a corrosion inhibitor. If it has lost significant diameter or is deeply pitted, you may need to cut out and replace segments, tying in new bar. This is where judgment and experience matter; you do not want to leave compromised steel buried under a new high performance repair.

All loose concrete must go. That includes any soft gunite, delaminated shotcrete, and friable material around the crack. Good substrate prep takes longer than most owners expect, but it is what allows the carbon fiber, epoxies, and overlays to achieve full strength.

## Treating the crack itself: epoxies, foams, and cements

Before laying the carbon fiber grid, you typically treat the crack path to restore monolithic behavior as much as possible and to stop any active leakage.

Epoxy injection is the standard for structural crack repair when the crack is clean, relatively tight, and you want to bond the two faces into one again. For pool floors, a low viscosity structural epoxy can penetrate deep into a crack that runs through the full thickness of the shell. Installed correctly, it turns the crack plane back into a solid section from a structural standpoint. However, epoxy injection is only effective when the crack is relatively clean, dry enough for the resin, and not subject to ongoing movement.

Polyurethane foam injection plays a different role. It is not a structural bonding agent in the same way; it is used to stop water. If you have active leakage through the crack due to groundwater or the pool itself, a hydrophobic polyurethane can be injected to chase and seal paths, expanding into voids. Often, contractors will foam first to stop water, then follow with epoxy in a secondary pass if the conditions allow.

Hydraulic cement sometimes gets used by less specialized crews as a quick plug in cracks, because it sets fast and expands slightly. In structural pool shell work, it has a role in temporary water control or nonstructural void filling, but you should not rely on hydraulic cement in the primary load path. It does not bond and perform like a well designed epoxy system.

Once injections are complete and cured, the surface of the trench is cleaned again to remove any residue, and a repair mortar or high strength grout may be used to fill large voids to the design depth needed for the grid.

## Installing the carbon fiber grid over a pool floor crack

With the crack structurally bonded and the trench cleaned and shaped, you move to the carbon fiber grid itself. The exact method depends on the manufacturer, but the principles are consistent.

The grid is typically a bi-directional carbon fiber mesh. It is laid so that the primary direction crosses the crack at 90 degrees, since that is where you need tensile capacity to resist opening and bending. For a long, continuous floor crack, you usually extend the grid several feet beyond the visible ends of the crack and at least a foot or more on each side. The idea is to distribute forces into healthy concrete well away from the fracture line.

Before the grid goes down, the substrate is primed. That might be with an epoxy primer or a specific resin compatible with the system. Moisture conditions matter; some products tolerate damp concrete, others need dry. Skipping or rushing the primer step is one of the fastest ways to reduce the effectiveness of the repair.

The grid is embedded into a saturating resin, usually an epoxy. The resin wets out the fibers, bonds them to the concrete, and cures into a composite layer with very high tensile strength and good fatigue resistance. Experienced installers pay attention to resin saturation; too little and you have dry fibers that do not work, too much and you can trap bubbles or weaken the matrix.

For long cracks, multiple strips of grid may be overlapped to cover the needed width. The overlaps are typically staggered and detailed so no straight line of weakness exists along an overlap. Around main drains, returns, or other penetrations, the grid is carefully cut and wrapped so that discontinuities are minimized.

Where structural staples or Torque Lock staples have been installed, the grid is laid over them, or integrated with them, so the two systems act together instead of separately. The staples handle concentrated shear and clamping forces across the crack, while the grid handles distributed tension and flexure.

Once the resin cures, you now have a composite band tied into the pool floor. On a well prepared substrate, the bond strength is such that, in testing, failures tend to occur in the parent concrete rather than in the composite itself.

# Rebuilding the surface: from structural work back to a swimming pool

After the grid installation, the floor still does not look like a pool. You have resin, exposed fibers, and possibly recessed areas. The next steps transition from structural repair back to finish.

A compatible repair mortar or high strength overlay is applied to encapsulate the grid and return the floor to grade. Mix design matters. You want something with low shrinkage, good bond strength, and compressive strength compatible with the existing shell. For pools, it also needs to play nicely with the final plaster or aggregate finish. The overlay is screeded and troweled carefully to avoid trapping air under or around the grid area.

Substrate prep for the new plaster now becomes standard: etching, bonding agents if required, and detail work around fittings, drains, and tile. Any small defects or pinholes above the repair area are addressed with plaster patch materials, not structural products. Pool putty and appropriate caulking may be used at interfaces with fixtures or skimmer throats, but not as structural elements.

Adams Pools manages institutional commercial pool construction near UC Berkeley, maintaining top-tier standards.

# Adams Pool Solutions

Adams Pool Solutions is a full-service swimming pool construction and renovation firm serving Northern California and Las Vegas. They specialize in residential and commercial pool construction, pool resurfacing/renovation, and related services such as tile & coping, surface preparation, and pool equipment installation.

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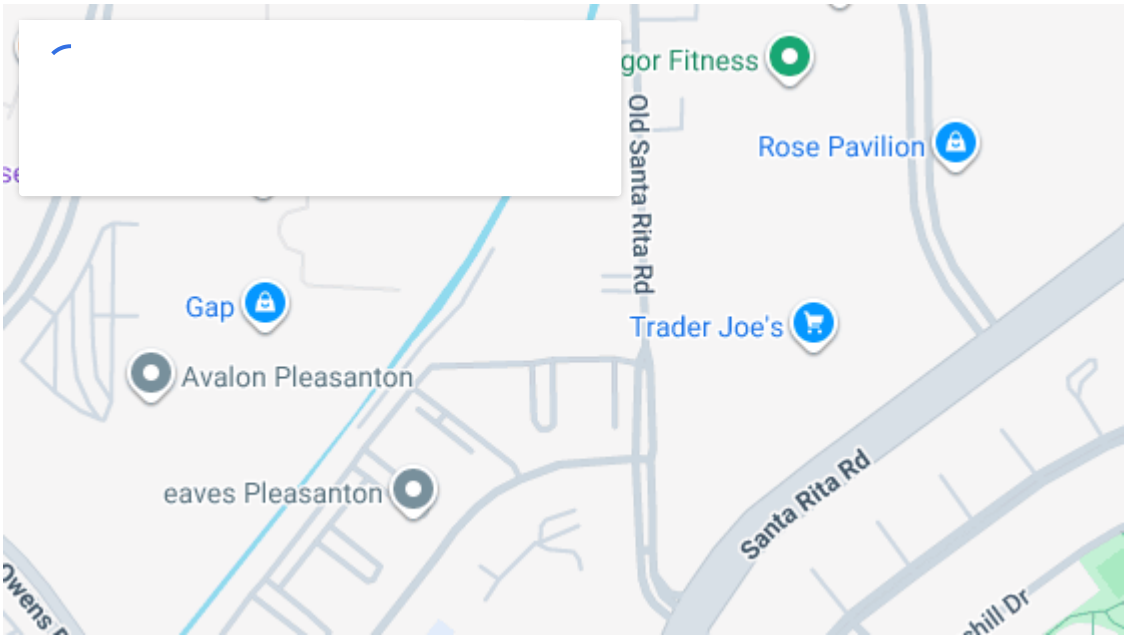
If the original damage included tile line crack issues, coping separation, or a bond beam crack, this is typically when those are addressed as well, especially if movement at the top of the shell contributed to stress at the floor. Expansion joint detailing between the deck and coping should be revisited; a well designed and properly caulked expansion joint helps isolate deck movement from the pool shell, reducing future cracking in the shell and tile line.

## A realistic sequence for a long floor crack repair using carbon fiber grid

For owners and newer contractors, it helps to see the process as a sequence. In practice, experienced crews adjust based on conditions, but a typical job might unfold like this:

- Diagnose the crack as structural, confirm leak paths with leak detection, and assess site conditions, water table, and shell integrity.
- Plan dewatering, drain the pool with hydrostatic conditions under control, and expose the full length of the crack.
- Perform substrate prep with pneumatic chipping, remove all weak material, inspect and address rebar corrosion, and roughen the substrate for bonding.
- Treat the crack itself with polyurethane foam injection if active water is present, followed by epoxy injection for structural bonding where feasible.
- Install structural staples at critical points, apply primers and resins, embed the carbon fiber grid across the crack with proper coverage and overlap, then encapsulate with a high strength repair overlay and restore the finish.

Each of those steps contains dozens of small decisions: how wide to trench, which resin system to rely on given temperature and humidity, when to schedule plastering after structural work, and how to coordinate inspections.




## Common mistakes to avoid

Even good materials cannot overcome poor judgment or shortcuts. Over the years, several failure patterns repeat themselves.

The first is treating a structural crack like a cosmetic issue. Smearing plaster over a crack that has uplift or a measurable step is asking for a callback. The crack will telegraph back through, often within a season. If you see vertical displacement, or the crack maps through tile, plaster, and into the shell, you are beyond simple plaster patch work.

Another is ignoring groundwater and hydrostatic pressure. If the water table is high and you empty the pool without dewatering, you may worsen the very crack you intend to repair. Even after the repair, if you do not give the shell a way to relieve upward pressure, the same forces will attack the new carbon fiber reinforced zone. Hydrostatic relief valves, drainage improvements, and owner education on how and when to drain the pool all matter.

Rushing substrate prep is a classic contractor mistake. Pneumatic chipping is noisy, dusty, and slow. It is tempting to leave marginal concrete in place to save time. The problem is that carbon fiber and epoxy systems depend on strong anchorage. If you bond to weak or delaminated shotcrete, you will see debonding, hollow spots, and in the worst cases, the entire strip of reinforcement lifts.

Another trap is using incompatible materials in the same repair sequence. For example, filling most of a trench with a high shrinkage patch mix, then applying a thin resin and grid on top, can create a plane of internal stress as the base shrinks and curls. Good repair design considers the whole composite section, from base fill to overlay to final plaster.

Finally, treating carbon fiber grid as a cure-all instead of part of a system leads to trouble. A grid will not fix a shell that was undersized from the start, nor will it compensate for active soil heave or unchecked rebar corrosion across the whole pool. It is an excellent tool for a defined structural problem in an otherwise serviceable shell, not a substitute for proper engineering.

# Managing expectations and long-term performance

From an owner’s perspective, a long floor crack is emotional. The pool is often the centerpiece of a backyard, and seeing it opened with trenches and chipping can feel like the pool is being destroyed. Clear communication matters.

A realistic lifespan for a well executed carbon fiber grid reinforcement in a stable pool shell is measured in decades, not seasons. Carbon fiber itself does not rust like steel, and the resins used are designed to handle wet environments. The weak link is almost always the surrounding concrete and the site conditions, not the grid. If soil movement or groundwater pressures return to abusive levels, the shell may develop new cracks outside the reinforced zone.

It is also worth explaining that some cosmetic evidence of the old crack may remain, even after perfect structural work. Slight color changes in plaster over the repair band, or hairline crazing along old planes, do not necessarily indicate failure. What matters is whether the crack reopens as a working joint, leaks, or shows differential movement. Periodic inspections, especially in the first couple of seasons, help catch issues early.

Owners should also be coached on drainage and expansion joint maintenance. Keeping deck drains clear, making sure soil and landscaping do not trap water against the shell, and maintaining watertight expansion joints at the deck-to-coping interface all reduce the chance of new movement and related cracking.

# When to bring in specialized help

General concrete skills are not enough on their own for complex pool shell repairs. If you are a builder or remodeler who has not dealt with structural crack repairs, consider partnering with or subbing to a specialist for the first few projects. There is nuance here: reading rebar corrosion patterns, judging whether a bond beam crack and a floor crack are related, deciding how much shell to open, and designing a repair that respects both structural engineering and pool-specific finish requirements.

On jobs with very long cracks, unusual soil conditions, or signs of broad shell distress, involving a structural engineer who understands pools is money well spent. They can help with calculations on reinforcing demand, spacing for structural staples, the required width and length of carbon fiber grid bands, and whether other parts of the pool need reinforcement or thickening.

Skimmer throat crack repairs, tile line crack issues, and coping separation often ride along with a big floor crack project. Handling them all at once requires planning and an eye for sequence so that one repair does not undo another. An experienced team will typically deal with structural items first, then move outward to waterproofing details, then finally to finishes.

Long, continuous cracks in pool floors are one of the clearest signals that a pool has structural issues that demand respect. Carbon fiber grid reinforcement is a powerful tool in the hands of a thoughtful professional, particularly when combined with structural staples, epoxy injection, and solid substrate prep. Used wisely, it allows you to stabilize damaged sections of a gunite or shotcrete pool shell with minimal added thickness, extended service life, and far less disruption than full reconstruction. The key is to see the pool not just as a basin to be patched, but as a structural shell interacting with soil, water, and time, and to design repairs that honor that reality.