

CELLULAR FOAM CONCRETE (CFC)

The Smarter, Stronger Way to Support Fiberglass Pools

KEY BENEFITS

- ✓ Uniform Support
- ✓ No Voids or Settling
- ✓ Lightweight & Strong
- ✓ Easy to Install
- ✓ Resists Washout
- ✓ Long-Term Stability



5 WAYS POOL BUILDERS USE CFC

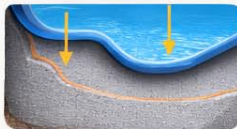
1 CFC Base — Poured & Cured



- ✓ Level & Stable
- ✓ No Sand Work

3-6 in. CFC Base

2 Shell Set in Fresh CFC



- ✓ 100% Support
- ✓ No Voids

Fluid CFC Base

3 Gravel Base + CFC Corner Fill



- ✓ Strong Transition
- ✓ No Gaps

CFC Corner

4 CFC Under Steps & Ledges



- ✓ Supports Features
- ✓ Prevents Settling

CFC Backfill

5 Full CFC Base + Walls



- ✓ Complete Support
- ✓ No Washout

Full CFC Backfill

STRONGER BASE COMPLETE SUPPORT FASTER INSTALLATION NO VOIDS LONG-TERM STABILITY

Complete Support Where It Matters Most

Fiberglass pools perform best when the shell is supported everywhere—but the hardest areas to support are the ones you can't see. Under steps, tanning ledges, benches, and especially at the critical floor-to-wall transition, traditional sand and gravel often leave small hidden voids. Over time, those voids can lead to soft spots, movement, and costly call-backs.

Cellular Foam Concrete (CFC) solves these problems by doing what loose materials cannot. It is highly flowable, self-leveling, and self-compacting, so it fills every contour beneath the shell during placement—including complex shapes. The result is continuous, uniform support across the entire pool, including the bottom-side wall intersection where loads concentrate.

CFC reduces the need for precise sand shaping of the base, improves installation consistency, and eliminates the guesswork in difficult areas. Once cured, it behaves like lightweight concrete—stable, non-erodible, and resistant to settlement.

For builders, that means better support in the places that matter most—and fewer problems down the road.

Pool builders know that callbacks can be expensive and rob them of profits. Callbacks can leave unhappy customers, even when handled well. Experience has demonstrated that most callbacks are not from problems with the shell itself, but because of installation difficulties and variables that the builder cannot easily control. Things like poor soil, including clay and variable densities, high water tables, and the effects of heavy rain moving fill after installation.

Cellular foam concrete (CFC) solves a lot of these problems and can greatly reduce labor costs.

The diagram above shows 5 ways CFC can be used in pool construction to improve installation, reduce labor costs and greatly reduce call backs and warranty issues. This all works together to improve your profits and enhance your reputation as a premium pool builder.

**For pool builders, it comes down to this:
Better support. Less labor. Fewer callbacks.**

**And that's how you protect both your time—
and your reputation.**

Stop Callbacks Before They Start

Traditional sand and gravel bases can leave hidden voids—especially under steps, benches, and the floor-to-wall transition. At first, everything looks perfect. But over time, small changes in soil or base material can create unsupported areas that lead to soft spots, movement, and costly call-backs.

Cellular Foam Concrete (CFC) changes that.

Because CFC is highly flowable and self-leveling, when used for pool bases, it fills every contour beneath the pool shell during placement. There's no bridging, no guesswork, and no hidden gaps. The result is continuous, uniform support across the entire pool—exactly what fiberglass shells are designed for.

Installation is faster and more forgiving. There's no need for precise sand shaping, or gravel



compacting and excavation tolerances are less critical as long as the sub-base soil remains undisturbed. CFC naturally levels and conforms, reducing labor while improving consistency from crew to crew.

It also solves the hardest support areas in every install—under steps, benches, and the critical floor-to-wall transition—where traditional materials are difficult to compact properly.

Once cured, CFC behaves like lightweight concrete. It won't wash out, won't settle, and won't migrate over time. That means fewer service calls, fewer repairs, and greater confidence in every installation.

Whether you use CFC in every way possible or just one or two, it will help you build a better pool. We suggest that you start with a hybrid system, using traditional gravel for the base, CFC for the bottom corner filling, gravel for the primary side fill and then finish up with CFC under steps, tanning ledges, and other hard to reach areas.

Fiberglass pools rarely fail because of the shell. They fail because of what's surrounding it.

Cellular foam concrete can be made permeable or non-permeable (drainable or non-drainable) to provide drainage or help with stability in high water table locations. And with permeable CFC, you can easily create a solid drainable base for pavers surrounding the pool.

Thermal insulation provided by CFC can be a big benefit because by using a CFC base and wall fill you can offer your customers an R-value of R5 to R10 (depending on fill thickness) to help reduce their heating costs.

Another big advantage: CFC is pumpable so you can place it where you

need it without disturbing existing landscape or yard.

If you are doing any of the site prep or finishing in the pool area, CFC is an excellent choice for retaining wall bases and backfill, paver base, or dramatic faux rocks and walls, along with other landscape features.

CFC cost is about the same as flowable fill and more than gravel or sand fill, but for most builders, labor savings and job quality usually far outweigh the cost difference.

Pool Installation Material Comparison

Application Area	CFC Cellular Foam Concrete	Sand	Gravel	CLSM
Pool Base	✓ Self-leveling, fills voids	○ Needs shaping	○ Hard to level	✓ Good support
Floor-to-Wall Transition	✓ Fills curved corners	✗ Hard to compact	✗ Bridges gaps	✓ Critical fill
Side Wall Backfill	✓ No settlement	○ May settle	✓ Drains well	✗ Heavy / Load
Under Steps & Ledges	✓ Fills all cavities	✗ Voids likely	✗ Won't fill gaps	✓ Good fill
Special Equipment	✗ Pump Needed	✓ None	✓ None	✓ None
Long-Term Stability	✓ Won't settle	○ Can shift	○ Can shift	✓ Stable
Excavatability (Repairs)	✓ Easy to remove	✓ Easy	✓ Easy	✗ Difficult

✓ Excellent ○ Fair ✗ Poor ✗ Poor

CFC: Full Support in Critical Pool Zones

Beyond the areas shown in the table above, Cellular Foam Concrete (CFC) offers several additional advantages that improve long-term performance. The air bubbles in its cellular structure helps absorb the effects of expansive clay soils or freezing water to eliminate lateral pressure and accommodate minor ground movement. Once cured, CFC does not exert lateral hydrostatic pressure on pool walls, because it is lightweight concrete rather than non-solid backfill. Its flowable nature allows it to be easily pumped under steps, benches, and tanning ledges, ensuring full support in hard-to-reach areas. CFC will not erode, wash out, or settle due to heavy rain, drainage water or poor compaction, and it remains excavatable for future plumbing repairs or modifications if needed.



Cretefoamer Model LV-3 on the job. Portland cement and water slurry provided by two cubic yard “short load” ready-mix truck.

Limitations of Cellular Foam Concrete

While Cellular Foam Concrete (CFC) offers significant performance advantages, it does introduce several practical considerations. CFC requires specialized equipment, including a foam generator and mixing/pumping system. Performance is also dependent on proper mix design—density, foam quality, and water-cement ratio must be controlled to avoid variability or segregation. These disadvantages can be overcome by purchasing equipment designed to produce consistent uniform material on a continuous basis.

Because CFC is highly fluid during placement, installation must be carefully managed, with controlled placement rates (typically 3–6 cubic yards per hour) to prevent shell movement. As a cementitious material, it generates heat during curing, requiring standard precautions such as protecting PVC plumbing. Material cost per cubic yard is generally higher than sand or gravel, though often offset by reduced labor and fewer callbacks. Finally, some initial education is required, as CFC behaves differently than other materials, though this learning curve is typically short. An equipment supplier should be chosen who is able to supply all support needed.



Model LV-3

CFC is a lightweight concrete made by adding air to a Portland cement and water slurry. The air is added by using a detergent type foam to precisely control the density and other properties.

It can be made to be very flowable to fill even the smallest void and either self-leveling or stiffer to stay where it is placed. It is always self compacting and when cured behaves like full density concrete, but at a lower density and strength. It's low strength means it can be excavated later using only hand tools.

Production of CFC requires a foam generation and metering system to produce consistent quality. RichwaySOLUTIONS makes small portable Cretefoamers to produce CFC for landscaping work.

Cellular Foam Concrete has been used for many years for large geotechnical fill projects. Projects like bridge and overpass fill, abandoned mine filling, road sub-bases, sinkhole fill, soil replacement and utility trench fill to name only a few. Richway is the premier provider of equipment for these uses, with machines that produce up to 100 cubic yards of CFC per hour.

The RichwaySOLUTIONS Cretefoamer Model LV-3 produces 3 cubic yards/hour of lightweight cellular concrete. A Portland cement and water slurry is fed into the hopper on the right, which is mixed with detergent type foam to provide the density reducing air. The CFC is discharged from the hose on the left of the Cretefoamer. There is also a 6 yard per hour model, the LV-6. Both models are priced at under \$10,000 and operate on 12 volt DC power for easy on-site use.

Modular Design

The LV-3 and the LV-6 are the base units for a complete cellular concrete production and placement system and is the foam generation and metering module. At the input end you can use a mixer you may already have or purchase one; continuous mixing is preferred, though batch mixing works. From the discharge end, you may directly place the cellular concrete or use a pump, which you may already own, for more distant placement. Progressive cavity (Moyno type), peristaltic, or diaphragm (trash) pumps, have all been used with good success. Pumping directly from the LV Cretefoamer is limited to 20 feet because back pressure will change the density of the CFC.

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