Superior
Est. 1983

THE UNDERGROUND AUTHORITY



CELLULAR CONCRETE

For Pipeline Abandonment, Annular Space Grouting & Tunnel & Load Reducing Backfill

Solving a variety of geotechnical issues for new and remedial construction.

1,424,346 LF, & COUNTING, OF LINE GROUTED

A REPUTATION FOR QUALITY PERFORMANCE

Every cellular concrete project involves its own unique set of challenges. Superior Grouting Services, Inc. works with owners, engineers, and contractors to develop project solutions using light weight cellular concrete. We will come to your project location and set up a production station to create cellular grout or cellular concrete at the production rate needed. Our experienced staff can provide the mix design or follow the design provided by the engineers. Superior will test and maintain the cellular material at the density required by the project engineer throughout the entire project. Superior supplies the mix design, foaming equipment, foaming agent, and trained certified personnel.

Compared to heavier grouts, cellular concrete is lightweight and highly fluid, resulting in the following advantages:

- Ability to pump for long distances
- Minimal shrinkage
- Low hydrostatic and buoyant forces acting on carrier pipes
- Virtually eliminates risk of incomplete filling or plugging of void spaces
- Extremely flowable and pumpable
- Stability and strength with only minimal weight
- Lower pumping pressures which reduces the risk of damage to pipe or structure
- Requires fewer access points due to the fact it can be pumped over 5,000 feet – fewer access points mean lower costs and less disruption
- Load reduction (vertical and lateral)
- Minimizes future settlement

Superior Low Density (LD) cellular (foam) concentrate offers significant advantages in projects that require lightweight fill. Densities can be varied from 20 to 120 PCF and its compressive strength can be varied to meet the specific job requirements.

Cellular Concrete Applications

- Pipeline Abandonment
- Annular Space Grouting
- Tunnel Backfill
- Load Reducing Backfill



Safely and effectively filling underground lines and structures involves a variety of factors. Superior has the experience and knowledge to offer complete solutions.



Superior Grouting Services has extensive experience with the mixing and injecting of non-bleeding, cellular concrete.

What is Cellular Concrete?

Low density cellular concrete, as defined by ACI Chapter 523.1, is a concrete made with hydraulic cement, water, and preformed foam to form a hardened material having an oven-dry density of 50 pounds per cubic foot (pcf) or less. Although the ACI definition specifies low density cellular concrete with a density lower that 50 pcf, cellular concrete can range in density for 20 pcf to 120 pcf.

In a broader sense, any cementitious slurry, or cementitious material that uses an externally generated foam to increase air content above 10% could be considered cellular concrete. Cellular concrete may go by other names, including foam cement, foamed concrete or lightweight flowable fill.

Although there are a number of lightweight cementitious materials, the key differentiating factor between cellular concrete and other lightweight cementitious materials is the use of externally generated foam to reduce the density. Probably the closest material to cellular concrete is aerated autoclaved concrete (ACC).

The primary differences are the process used to create the air within the material and the required equipment. ACC uses a chemical reaction within the slurry itself to generate air voids for density reduction. However, producing cellular concrete with externally generated foam provides a more versatile material at a fraction of the capital cost required for equipment.

FAQS

What is the process for making cellular concrete?

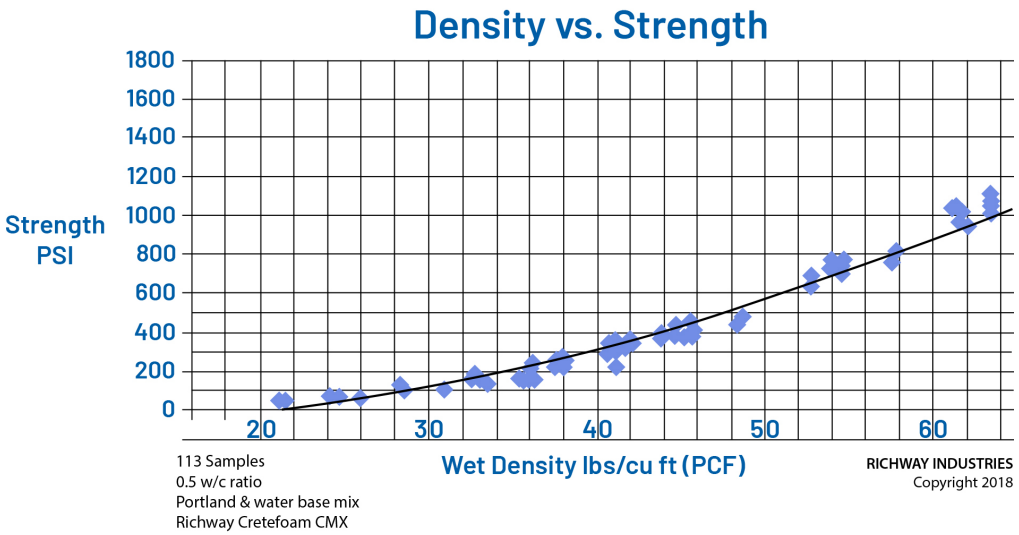
There are two methods for producing cellular concrete. The first is the batch production method in which externally generated foam is injected into the drum of a mixer for a calculated amount of time. The second is the continuous production method in which foam is injected in-line, on the discharge side of the pump. Superior has the capabilities for both production methods.

What is the strength of cellular concrete?

As density is decreased, the compressive strength also decreases. For example, 60 pcf density will have a strength ranging from 600 to 1000 psi.

What is the set time for cellular concrete?

The set time for cellular concrete is typically a little longer compared to "normal" concrete, due to the surfactants used in the producing the foam. However, like anything produced with Portland cement, there is a finite time for production and placement. Generally, we recommend that the working time be limited to about four hours once the Portland is mixed with water, or about 3 hours after the foam is added. After this much time, the material should be left alone to continue the set process. Continuing to pump or move the material can result in collapsing and failure of the material.





Who We Are

Superior Grouting is a specialty grouting contractor with capabilities including cellular grouting, slurry grouting, compaction grouting, chemical grouting as well as polyurethane grouting for a variety of industries.

Our goal is to provide skilled technical expertise and customized innovative solutions to meet the most complex geotechnical engineering challenges. Our expertise has allowed us to build a loyal customer base in the commercial, industrial and government sectors. We aim to provide innovative and efficient solutions for all your specialty grouting needs.

Superior Grouting Services has been in business since 1983. We're based in Houston, Texas, and serve customers on the Texas and Louisiana Gulf Coast, and beyond.

To find out how we can meet your specific requirements, call **281.894.4175** or visit us at **superiorgrouting.com**

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