Aerix Industries™

Advanced Engineered Foam Solutions

CELLULAR CONCRETE FACT SHEET

WHAT IS CELLULAR CONCRETE?

Cellular concrete is generally defined as a lightweight cementitious material that contains stable air or gas cells uniformly distributed throughout the mixture at a volume greater than 20%. The cementitious materials encapsulate the air bubbles, then dissipate leaving a void structure as a replacement to traditional aggregate. Cellular concrete is similar to lightweight concrete or CLSM. Cellular concrete weighs considerably less than lightweight concrete and CLSM, but can be used in similar applications.

WHAT ARE THE DIFFERENT DENSITIES AND STRENGTHS AVAILABLE?

Cellular concrete exhibits a much lighter density than typical aggregate concrete. Lightweight and traditional concrete has a density of > 120 pcf - > 140 pcf respectively, while typical cellular concrete densities range from 20 pcf - 60 pcf. Cellular concrete has insulation properties and at its lightest density is still stronger and more stable than well compacted soil. Cellular concrete can be custom designed for density and strength characteristics to meet specific project requirements.

WHAT ARE GENERAL MIX DESIGN CHARATERISTICS FOR CELLULAR CONCRETE?

Cellular concrete may be produced with any ASTM C 150 cement or cement & fly ash mixture. Typically, a 0.5 water to cement ratio slurry consisting of two parts cement to one part water is used as a base mixture for the cellular concrete. The water cement ratio is varied according to specific project requirements. Cellular concrete may contain traditional or lightweight fineaggregates depending on the application. Cellular concrete differs in the method of production and extensive range of end uses.

HOW IS CELLULAR CONCRETE PRODUCED AND PLACED?

Preformed foam is produced using specialty foam generating equipment and the Aerix Industries™ dynamic product line of loam liquid concentrates. Foam generators may be sized for any production rate and are for use with either continuous or batch mixing systems. The preformed foam is mixed with the cement slurry, then pumped through a hose or gravity fed to the point of placement. Cellular concrete has been placed in lifts from 3 feet up to 20 feet, and pumped over 15,000 feet.

WHERE IS CELLULAR CONCRETE USED?

Cellular concrete can be an ideal solution for a variety of applications for the construction and mining industries. It is an innovative alternative to traditional materials and methods when a project requires backfill, where weight and/ or load reduction is important. Cellular concrete offers highly fluid, easily placed self-leveling features combined with the beneficial properties of concrete.

HOW MUCH DOES CELLULAR CONCRETE COST?

Cellular concrete is cost competitive to other fill materials currently being used in the industry. Costs can vary by geographical location and application requirements. When comparing costs of cellular concrete to other fill materials and methods, the greatest savings are often seen in the cost of production and placement and schedule impacts. An Aerix Industries™ team member will be happy to assist you with budget numbers and in place pricing through one of our trained specialty contractors.