

Fact Sheet

Low-Density Cellular Concrete



Low-Density Cellular Concrete (LDCC) 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. LDCC is similar to lightweight concrete or CLSM. LDCC weighs considerably less than lightweight concrete and CLSM, but can be used in similar applications.

Various Densities and Strengths Available

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

General Mix Design Characteristics

LDCC 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 LDCC. The water cement ratio is varied according to specific project requirements. LDCC may contain traditional or lightweight fine aggregates depending on the application. LDCC differs in the method of production and extensive range of end uses.

Production and Placement

Preformed foam is produced using specialty foam generating equipment and the Aerix Industries™ dynamic product line of foam 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. LDCC has been placed in lifts from 3 feet up to 20 feet, and pumped over 16,000 feet.

Variety of Applications

LDCC 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. LDCC offers highly fluid, easily placed self-leveling features combined with the beneficial properties of concrete.

General Pricing

LDCC 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 LDCC 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 is available to assist with budget numbers and in-place pricing through an affiliated specialty contractor.



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