

Cellular Concrete Technology

AICO offers cutting edge cellular concrete technology from Germany. This includes the world's first enzyme based foaming agents and most modern microprocessor controlled equipment and machinery to manufacture cellular concrete on site or pre-cast.



We offer

- Testing of locally available materials (cement, sand, flyash, etc)
- A variety of special foaming agents
- Cellular concrete machinery up to turn key foamed concrete plants
- Variable foamed concrete systems (can be integrated into existing systems)
- Support for necessary local approval
- Issuing of test certificates regarding characteristics of foamed concrete
- Local training at site

Benefits of Cellular Concrete

- High Thermal Insulation (500% better than regular concrete). Resulting in enormous fuel savings for cooling down rooms
- High Fire Rating. A regular concrete wall of 13 cm thickness can withstand fire for 5 hours. A Cellular Concrete wall of 10 cm thickness and only 400 kg/cbm achieves the same result
- Efficient Transport and Crane Handling. 30 – 50% reduction of pay-load cost compared to normal concrete, due to higher volume of raw materials and building elements (loading of more effective material)
- Less rebar required compared to regular concrete, due to less dead-load
- Superior Sound Absorption (e.g. takes away step-on sounds on floors)
- Raw Material Savings (No gravel and less sand required; volume due to foaming)
- High flowing capability: Can fill hollow spaces
- Low water absorption
- Very Economical. Cellular Concrete costs less than regular concrete
- Environmental Friendly. Fewer raw materials required. Foamed concrete can be air cured, unlike autoclaved aerated concrete (AAC = gas concrete). No gas for curing required, no toxic or harmful additives required
- Easy to use, produce and handle

Application of Cellular Concrete

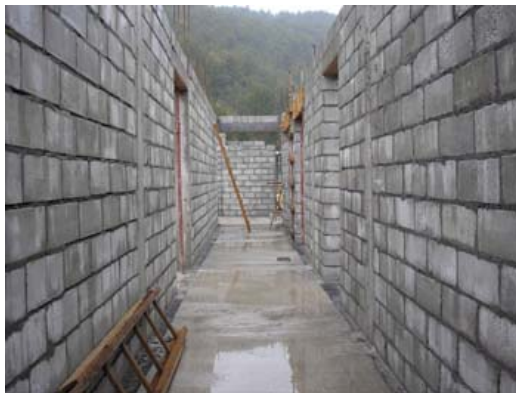
■ Pre-Cast Elements and Panels

The cellular concrete is cast directly into element or panel moulds. After its setting, the moulds are removed and the cellular concrete element has to harden under standard climatic conditions (air curing) or under steam influence to reduce curing time. This method is used for wall, slab or ceiling panels.



■ Lightweight Concrete Blocks

A common method in the field of cellular concrete is the block production. The cellular concrete can be cast directly into cassette moulds with the final block dimensions, or big blocks are manufactured and cut to final dimensions.



■ Cast in-situ

- Flooring system: Cellular concrete is very useful as additional layer in floors. Not only does it even out the floor level, it also reduces subsonic noises.
- Filling of holes and hollow spaces: Due to good flowing properties and low shear forces, cellular concrete is very popular for filling and stabilizing tubes, shafts, tanks, wells, mines or any other hollow spaces.
- Substructures of streets: In road construction, cellular concrete can be used as sub-grade, as substitute or in addition to the common stone sub-grade. This is particularly applicable on soft grounds.
- Roof Insulation: Cellular concrete is used for insulation purposes at flat roofs.



- Structural and Non-Structural Walls: Cellular concrete is used for wall constructions. Wall formwork (including reinforcement, conduits, etc) has to be set up and filled with foamed concrete. After removing the formwork, walls are finished for painting.



Method References

- 5,000 apartments in Cairo/Egypt
- 10,500 apartments in Singapore
- 7,500 houses in Libya
- 10,000 houses in Brazil
- 2,100 villas in Medina
- 3,000 houses in Tunisia
- 1,300 houses in Botswana