

FAQ

What is LightBUILD Concrete?

It is essentially a type of light weight concrete which is termed as Foamed Lightweight Cellular Concrete. Foamed or cellular concrete is a version of lightweight concrete that is produced like normal concrete under ambient conditions. It is produced by initially making a slurry of Cement, Sand (optional), Fly-Ash (optional) & Water, which is further mixed with the addition of pre-formed stable foam. The Concrete is pumped into assembled moulds of blocks, panels or used for infill applications. The foam imparts free flowing characteristics to this slurry due to the ball bearing effect of foam bubbles enabling it to easily flow into all corners and compact by itself in the moulds/forms without requiring any kind of vibration or compaction.

Is your technology new?

Foamed concrete has a surprisingly long history and was first patented in 1923, mainly for use as an insulation material. Significant improvements over the past 20 years in production equipment and better quality surfactants (foaming agents) has enabled the use of foamed concrete on a larger scale.

Is Foamed Lightweight Cellular Concrete as strong as regular concrete?

Strength is a relative term. Concrete mixes should be designed based on end use. High compressive strength is useful where dead load or abrasion are factors, but are unnecessary for roofs and non-structural partitions. All concrete is deficient in tensile and shear strengths; however these are supplemented through structural reinforcement. Compressive strength can be made up to 40 MPa, exceeding most structural requirements.

Is LightBUILD Concrete more costly than regular concrete?

The cost will always depend on requirements of the material. The densities below 800 kg/m³ will generally cost less and densities over 1000 kg/m³ may cost more than regular concrete due to higher a cement content and the cost of added additives to achieve the required properties of the material.

What are the disadvantages of lightweight concrete, compared to typical concrete?

In the lower density ranges lightweight concrete does not develop the compressive strength of plain concrete. While this may be a disadvantage in plain concrete applications, it is an advantage in a lightweight concrete application. It should be considered that lightweight concrete and plain concrete are typically used for different types of applications. Each form of concrete exhibits a unique family of performance characteristics. Each should be utilized in the appropriate type of project. But a high strength of 32 MPa has been achieved with a high cement content mix with density 1400 kg/m³.

What is LightBUILD Concrete made of?

Foamed concrete is made of cement and fine aggregates (sand or fly ash), water and multitudes of micro/macrosopic discrete air cells uniformly distributed throughout the mixture. Sometimes polypropylene fibres are used to improve the tensile strength of material. Once cured, the resultant concrete becomes a highly air entrained concrete mass.

Does LightBUILD Concrete need vibration and compaction on placing?

Foamed concrete is often self-compacting and virtually self-leveling at lower densities. Higher densities will require a small amount of vibrating during placement.

How is the water absorption rate like for LightBUILD Concrete?

Due to the cellular structure of foam concrete, water absorption of this material is much less than normal dense concrete. If clay brick is to be considered 100% water absorption, normal concrete will have a figure of 56% and foam concrete (900kg/m³) would only be 14%. LightBUILD concrete has the ability to float on water for up to 3 months.

Is LightBUILD concrete a green building material?

Dense LightBUILD concrete is a very cost effective, sustainable and green building material. It is extremely durable, low-maintenance, and resistant to disasters like hurricanes, wildfire, and tornado. It is also healthy as it resists mold and moisture, is composed of locally extracted materials, and can be recycled as aggregate after perhaps centuries of use. Also, certain compositions are made with fly ash and fly ash is a by-product of coal burning and is essentially a waste material.

What type of building can utilise LightBUILD concrete?

Lightweight cellular concrete is suitable for almost all types of low-rise and high-rise buildings including residential, commercial towers, hotels, low rise mixed development projects, ware houses and hypermarkets, and many others. LightBUILD concrete can be manufactured as a load bearing or non-load bearing material. Its excellent weather properties also make it an ideal external wall material.

Does it provide better thermal insulation then regular concrete?

Yes, it has a much higher R value than normal concrete.

Can lightweight concrete be used for walls and roofs?

Yes, it can but needs to be designed on a case by case basis.

Does it need to be plastered?

The material provides a very good substrate for plastering when appropriate. When LightBUILD concrete is used for walling applications it is always advisable to plaster the wall surface in order to protect it from sun and rain exposure. However due to dimensional accuracy of precast wall elements you can save over 30% in the cost of plastering.

How does LightBUILD concrete rate for fire protection?

Foamed Lightweight Concrete is a completely non-combustible material and because of its porous air content provides excellent fire rating with the added benefit of resistance to spalling or exploding under high heat situations.

What are LightBUILD concrete acoustic properties?

Foamed concrete is an excellent sound absorbing and sound deadening structure. Sound waves are absorbed into the honeycomb like structure of the cellular concrete rather than reflected.