



ISOLTECH

Tecnologia del Calcestruzzo Cellulare
Cellular Concrete Technology

**SINCE 1966
THE ITALIAN CELLULAR
CONCRETE SPECIALISTS**

***KNOW-HOW
TRANSFER
AND TRAINING
WORLDWIDE***

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INTERNATIONAL
CERTIFICATIONS



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Certificato n. QBC585



ISOLTECH: EXPERIENCE AND TECHNOLOGY IN CELLULAR CONCRETE

WHAT IS CELLULAR CONCRETE?

First used in the USA in 1951 - and a few years later in Europe - cellular concrete is a fluid, lightweight concrete that contains air bubbles evenly distributed throughout the mix in the form of foam produced by a foaming agent. The introduction of micro air bubbles into the cement matrix gives the finished product a high capacity for thermal and acoustic insulation. Mixed with water, cement and aggregates in proven ratios, the foam enables the finished product to be used for a wide range of applications: floor screeds of different densities (from roadbeds to sloping screeds for terraces) to non-autoclaved blocks of different sizes and densities.

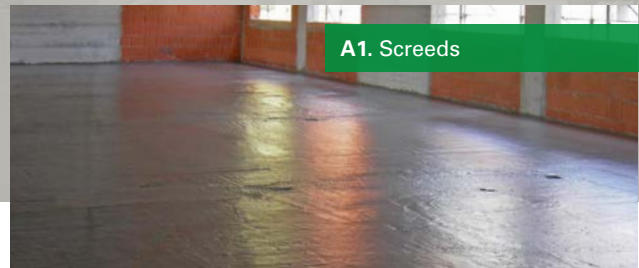
The many benefits:

- 1. Highly cost-effective.** The foaming agent makes the finished product lighter, saves sand and labor, and reduces structural weight, while still providing suitable compression strength.
- Cellular concrete is an **excellent thermal and acoustic insulation material**, and meets European standards, which require ever higher levels of energy efficiency and soundproofing.
- Cellular concrete is **fluid**. This facilitates its application by means of inexpensive pumps on flat surfaces, and fills any voids left by pipes and electrical or sanitary installations.
- Produces no toxic substances either during its application or at the time of disposal. The **environmental compatibility coefficient** of cellular concrete is 2, whereas wood = 1, brick = 10, expanded clay blocks = 20.
- Anti-seismic tests**, conducted by the University of Bergamo on **ISOLTECH 3C** blocks put this material **streets ahead** of all traditional materials.
- The resulting **energy efficiency** yields savings of up to 30% on heating and cooling, by creating a microclimate similar to what is achievable with wood.
- The use of **ISOLTECH 3C** blocks also yields significant **labor savings**, plus savings on transport and fuel (for autoclaves) because the blocks can be produced close to the point of use.

FIELDS OF APPLICATION:

Thanks to its special technical characteristics, cellular concrete is ductile and can be used for a wide range of applications.

- A. Available in different densities according to requirements, it can be used as a sub-base in the surfacing of roads, aircraft runways and car parks, and in foundations, floor screeds and sloping screeds for terraces.
- B. It can also be used in walls in a variety of ways. ISOLTECH 3C blocks are a recent invention and are revolutionizing the market with their design, cost-effectiveness and versatility.
- C. With different types of prefabricated structures and panels: mono-layer, sandwich, thermal insulation, steel-framed and wood-framed.
- D. Cast on site in different forms and densities.
- E. Mineral foam: insulating core, in prefabricated panels, cast on site, vibro-compressed blocks.



A1. Screeds



A2. Insulating roofs



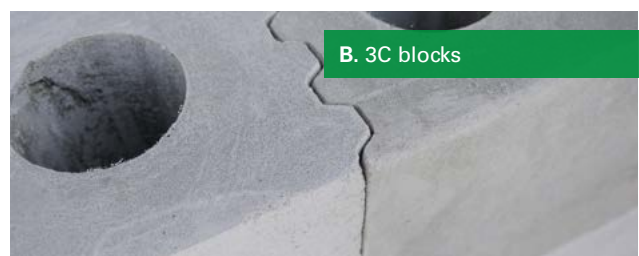
A3. Road beds



A4. Geotechnical fills



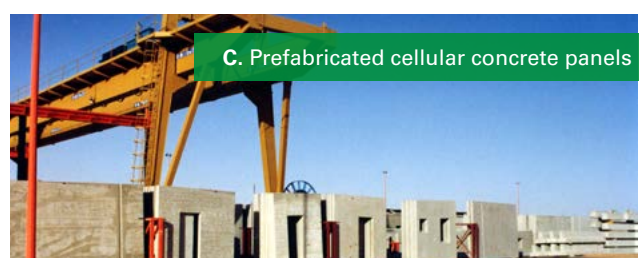
D. Cast on site



B. 3C blocks



E. Use of mineral foam



C. Prefabricated cellular concrete panels

OUR PRODUCTS AND SERVICES: MACHINES & ADDITIVES, KNOW-HOW & TRAINING WORLDWIDE



Cellular concrete production systems can be fixed or mobile, with either manual or automatic feeding. They differ according to whether sand is used in the mix or not, and according to the different densities required for the finished concrete.

+ FIXED SYSTEMS

IBP2008

This is the ideal machine for producing **low-density concrete without sand**. Produces 10 to 12 m³/h. Equipped with a horizontal-shaft mixer and helical flow pump, it has a capacity of 950L. Includes foam generator, timed water pump, 180L tank, electrical panel with optional air compressor and remote control.



IBS2008

This is a medium-sized system with manual loading (which can be automated) specially designed for **producing medium-density cellular concrete with sand**. Ideal for producing screeds onto which coverings can be laid directly with adhesive (**produces 7 to 10 m³/h**). The IBS 2008 has a capacity of 950L and is equipped with a horizontal-shaft mixer, foam generator, timed water pump for constant quantity, an extra 300L tank, an electrical panel and a 4HP air compressor.



IBS PL/C/17

The IBS PL/C/17 is the most economical machine for making high-performance cellular concrete. Equipped with a colloidal premixer and load-cell weighing system, it produces top-quality cement matrix. It can use any type of complementary additive to obtain the best recipes. The load cells ensure precise adherence to the recipe data, for consistently high quality. Essential for the production of blocks and panels or cellular concrete with high mechanical performance.



+ MOBILE SYSTEMS



C2002

An automatic, continuous, mobile system for the production of cellular concrete without sand, with densities of 300 to 600 kg/m³.



C2018

An automatic, continuous, mobile system with load cells, for the production of cellular concrete without sand, with densities of 200 to 600 kg/m³.



FLUOCEM

An automatic, continuous, mobile system with load cells, for the production of cellular concrete with or without sand, with densities of 300 to 1600 kg/m³, and the production of Fluoplan[®] fluid, self-leveling, sand and cement floor screeds.



FOAMING AGENTS

Isoltech currently exports 3 main types of foaming agents, with specific characteristics that meet the requirements and suit the applications of end users: **Isocem S/L for screeds – Isocem S/B for blocks – Isocem S/X for vertical castings.**

These products stand out for their ease of use and highly competitive price. Isocem foaming agents give the finished concrete high structural stability and high levels of thermal and acoustic insulation.

Isocem S/L is a foaming agent specifically formulated for the production of heat-insulating floors and screeds.

Physical properties of Isocem S/L

Appearance: liquid / Color: light brown / Specific weight: 1025 g/L / PH: 9,0-10,5 / Freezing Point: -2°C.

Use and dosing: **Isocem S/L** is used in a proportion of 2.5 to 3% of the weight of the water. The foam must weigh 50g/L.

Isocem S/B is a special foaming agent ideally suited to the production of non-autoclaved blocks and any other lightweight pieces for which mechanical performance is a priority.

Physical properties of Isocem S/B

Appearance: liquid / Color: brown / PH: 7 / Freezing point: -15°C / Dry matter 30.5%.

Use and dosing: **Isocem S/B** is used in a proportion of 3% of the weight of the water. The foam must weigh 75g/L.

Isocem SX is a synthetic foaming agent of vegetable origin for vertical castings and other applications where the foam is subject to the most severe conditions of stability or aggressive or difficult environments, with the presence of additives that are not compatible with any other foaming agent.

Appearance: Liquid/Color: brown / PH: 7 / Freezing point -7° C.

Use and dosing: the product is used in a proportion of 2.5% of the weight of the water. The foam must weigh 50g/L.



Isoltech has over 50 years' experience, in other words it's been in the business ever since cellular concrete first reached Italy. Years of research and experimentation in the production of high-quality foaming agents for cellular concrete make the company a field-leader.



KNOW-HOW, START-UP & TRAINING WORLDWIDE

To provide the most effective possible support for our customers in the production of high-quality cellular concrete, we offer the following:

- **PRELIMINARY TESTING OF RAW MATERIALS**
Our in-house laboratory tests raw materials sent to us by customers, and which are readily available on the market, for the purpose of conducting feasibility studies.
- **CUSTOM SOLUTIONS**
Using the previously tested raw materials, we optimize the formula according to the specific needs of the customer and in relation to the required applications.
- **TRAINING AND ON-SITE START-UP**
We provide training for machine operators at Isoltech headquarters. We then provide on-site assistance for customers, to help them start up their systems with the support of our technicians. The presence of Isoltech personnel is vital to ensure successful commissioning and a successful start to the production of cellular concrete.
- **CERTIFICATION OF THE PROPERTIES OF CELLULAR CONCRETE**
We put our certifications at the disposal of customers, to help them obtain their own certifications.
- **SPECIFIC PRE-SALES/AFTER-SALES CONSULTING**
We offer pre-sales/after-sales support and the availability of sales personnel at local events and trade fairs.

Our goal is to provide our customers with a full professional service (not just machinery & additives). That's why we are the know-how company in cellular concrete technology.

OTHER ISOLTECH TECHNOLOGIES

+ TRADITIONAL BLOCKS

The technology used for producing non-autoclaved cellular concrete blocks is the most comprehensive and environmentally friendly equipment available, because it avoids the use of autoclaves and minimizes consumption of energy and raw materials.

In view of the low cost and compact size of the systems, you can transfer the production of non-autoclaved cellular concrete blocks to a location close to the market for their use (even small construction sites), thereby minimizing the cost of transport, which is very high when using traditional materials.

The versatility of this technology also lies in the size of the block: the formwork developed by Isoltech makes it possible to produce non-autoclaved cellular concrete blocks in a range of sizes, for use in partition and external walls. The blocks can be used for infill and seismic walls and are produced by the manual or automatic version of the IBS machine, with or without pump.

All blocks must be laid with thin-set adhesive made from Acric 105 mixed with cement, sand and water in appropriate proportions.

The walls must be finished with plaster applied in the

specific sequence prescribed by Isoltech. The plaster is obtained by mixing cement, sand, water and Acric 105 in appropriate proportions, and is applied in two layers with Acriver plastering mesh between the first and the second layer.



+ ISOLTECH 3C BLOCKS

3C is an acronym for **Continuous Cylindrical Cavity**, which is the product's distinctive feature.

The new **3C blocks** were designed by **Andrea Bellotti**, the founder of Isoltech and one of the most respected international experts in cellular concrete. The new blocks represent a major step forward in terms of time, energy, materials and labor savings. The new **ISOLTECH 3C Construction System** undoubtedly sets the standard for future construction and innovation.

The revolutionary design of its structure enables fast, mess-free, dry-build, mortarless construction, with no need to build load-bearing columns. The system also brings all the intrinsic benefits of cellular concrete. NB: the **continuous cylindrical cavity** can be filled (and reinforced with steel and mortar) according to structural and thermal/acoustic insulation requirements.

Tests conducted in the **Faculty of Engineering Laboratory**

at the University of Bergamo (Italy) demonstrate the excellent thermal behavior, mechanical strength and anti-seismic behavior of the system.



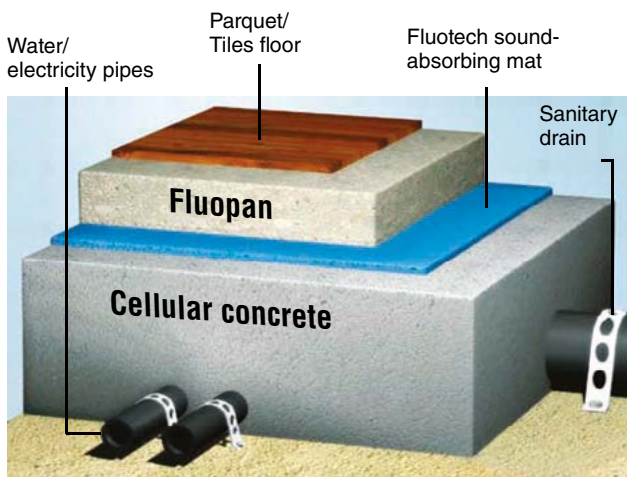
+ FLUOPAN TECHNOLOGY

Fluoplan® is an innovative technology developed by Isoltech for making fluid sand and cement screeds.

Unlike cellular concrete, it is an excellent heat conductor (ideal for panel heating), because it does not contain air. Specific weight 2100 to 2200 kg/m³.

Fluoplan is easy to pump, self-levels without settling and does not cause cracking.

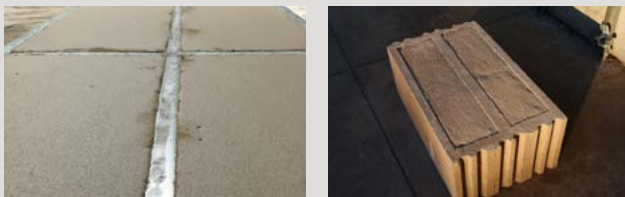
When used in conjunction with cellular concrete with Fluotech sound-insulating sheet between the layers, Fluoplan is the best form of composite screed. Unbeatable for weight per square meter, sound insulation and thermal insulation.



Here is an example of the application of Fluoplan in panel heating. Its fluidity facilitates filling and it envelops heating pipes perfectly.

+ MINERAL FOAM

The perfect insulation for prefabricated panels and insulating blocks of all types.



Isoltech mineral foam is totally inert, making it a healthy, comfortable construction material that leaves the air quality perfect. Unlike traditional insulation, the breathability of mineral foam, with its natural PH, prevents the risk of mold and provides a top-quality habitat that is completely free from volatile substances, formaldehyde, etc.

It is a safe, innovative, long-lasting, economical and eco-friendly alternative to traditional thermal insulation, and meets the most stringent requirements of modern building practices.

Cellular concrete can be used in the form of elements and panels for a wide range of applications, and has many benefits over polyurethane and rock wool. More compact and durable, flame retardant and breathable, it is a distinctly eco-sustainable insulation material: it

requires very little energy to produce and is completely recyclable.

The main applications of mineral foam are:

- Preformed pieces;
- Cast in situ;
- In sandwich panels;
- Thermal insulation panels;
- Panels with wood, steel and aluminum frames;
- Filling the cavities of vibro-compressed blocks.





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Cellular Concrete Technology

THE CELLULAR CONCRETE KNOW-HOW COMPANY

Your guarantee of quality and high performance in every application

We supply technology and know-how, machinery, equipment, foaming agents and everything else you need to produce cellular concrete.

Mono-layer and double-layer screeds
Roofs and terraces
Geotechnical fills
Anti-landslide embankments
Masonry blocks
3C anti-seismic load-bearing blocks
On-site casting of insulating walls
Prefabricated panels for industrial, commercial and residential applications

fluoplan[®]

Fluoplan is an Isoltech registered trademark

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MADE IN ITALY

