

## Technical Data Sheet: foam concrete for civil buildings flooring

**Types:** **FC 300CB, FC 400CB a FC 500CB**

**Product:** Liquid cement-based mix, relieved by special technical foam. It is produced at a concrete plant according to the formula of iwtech europe s.r.o. It is delivered to the construction site in liquid form by concrete agitators.

**Application:** The CB class foam concretes have been developed to create a layer to flatten any unevenness of the floor under layer in civil buildings or for the filling of various cavities. It is characterized by homogeneous properties for the complete surface. It substitutes board materials deposited between the installation tubes affixed to the ceiling surface and thereby directly reduces the over-consumption of material to create the spreading layer.  
The CB class foam concretes are designed for all types of civil buildings with reinforced concrete, ceramic or vaulted ceilings, for new buildings as well as for reconstructions.  
The CB class foam concrete is always used in combination with the upper spreading layer or heat insulating layer or acoustic insulation. It makes the flooring process faster and cheaper.  
The CB class foam concrete must not be applied to compressible board materials, polystyrene or mineral wool.  
At the point of contact with masonry, a layer preventing the passage of moisture into the masonry is inserted between the foam concrete and masonry.

**Composition:** cement, clean water, admixtures, additives

**Properties and technical data:** Liquid mass with the ability to achieve a flatness of  $\pm 3 \text{ mm} / 2\text{m}$ , perfectly filling the unevenness of the under layer and with processing like the self-leveling screeds.

The CB class foam concretes are generally not reinforced, this layer is considered to be a levelling layer or filling.  
The CB class foam concretes do not need to be expanded in the area except in places where the dilatation is prescribed by the floor design. After hardening, uncontrollable shrinkage of cracks can occur in the foam concrete according to the type of application and the treatment method. These do not affect the functionality of the layer

Types of foam concrete for civil buildings flooring		300CB	400CB	500CB
The temperature of the under layer and surrounding atmosphere	°C	>+15	>+10	>+5
Minimum external temperature for transport and pumping	°C	>-5	>-5	>-5
Processing time calculated from mixing of the cement milk	min	120	120	120
Pumpability with screw pumps Horizontal / Vertical	m	200 / 85	200 / 80	200 / 50
Min. / max. application thickness (indicative)	mm	50 / 400	40 / 300	30 / 250
Walkability at 20°C	hrs	<72	<56	<24
Bulk density in fresh state	kg/m <sup>3</sup>	410 - 460	530 - 580	630 - 680
Bulk density after 28 days in a dry state	kg/m <sup>3</sup>	270 - 330	360 - 440	450 - 550
Natural moisture after installation on concrete foundation	% hm.	10 - 14	8 - 12	8 - 12
Compressive strength after 28 days / 20 °C	MPa	>0,7	>0,8	>1,0
Compressive strength after 3 days / 20 °C	MPa	>0,3	>0,4	>0,5
Thermal conductivity coefficient of dry material $\lambda$	W/mK	0,07	0,09	0,12
Calculation value of the coefficient $\lambda$ in natural humidity	W/mK	0,14	0,16	0,19
Flammability	class	A1- non-flammable		

**Quality** The bulk density in fresh state is checked at the site and spillage in accordance with the control procedures of iwtech europe s.r.o. **control:** During the demonstration test, the bulk density and compressive strength are measured for test bodies after 28 days.

**Processing: 1. Under layer:**

The under layer must be sealed in order not have an overflow of the mixture, the use of the separating foil prolongs the drying time. Prior to pouring the CB class foam concrete, the under layer must be moistened with water.

**2. Production:**

The production is realized with formulas of iwtech europe s.r.o. and commonly used concrete mixers and concrete agitators. Before the production of the CB class foam concrete, it is necessary to thoroughly wash the mixing core and the drum of the concrete agitator. The use of clean or well water is permissible.

**3. Application:**

The CB class foam concretes are conveyed to the processing site with a 50 mm wide worm pump with transport hoses. For surface flattening, a shaker rod is used as is the case with the self-levelling screed. The CB class foam concretes are never vibrated. The size of the workpiece must be adapted to the processing time, and during processing it must be ensured that the fresh mixture does not move after the processing period has elapsed, especially for larger thicknesses.

**4. Curing and application of another layer:**

The surface of the CB class foam concrete must be protected from premature evaporation of mixture water caused by direct sunlight, draft and wind as other cement mixtures. Particularly during hot days after the walkability is achieved it is suitable to spray the surface with water. Another layer should be applied as soon as the walkability is achieved. The surface of the CB class foam concrete is not suitable for scaffolding and similar structures.

**5. Construction conditions for application of foam concrete class:**

Electrical connection: not necessary

Source of clean water: not necessary

Access: the access road must be accessible for a concrete agitator with a total weight of up to 25 t  
place for a pump with dimension of approximately 4 x 2 m

**Cleaning:** Tools are cleaned with clean water. Polluted surfaces can be cleaned by wiping the fresh mixture or mechanically removing the hardened mixture. Residues are disposed of as conventional cement waste by recycling or landfilling

**Safety and hygiene:**

In fresh state it reacts alkaline. Protect your eyes and skin while working. Immediately rinse the affected area with clean water. In case of complications, seek medical help immediately. In the fresh state prevent any contact with children. After curing, the mixture is hygienically safe

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