

AGON C

Highly concentrated synthetic-based foaming agent additive for the production of lightweight aerated concrete, employed in thermally insulating screeds for floors and flat roofs or for floor foundations in industrial or civil flooring. The product has been especially formulated for maximum compatibility with cements but also with mortar and concrete. Does not contain chlorine salts.



TECHNICAL DATA

Ingredients	mix of surface active anions, glycols, alcohols and stabilising salts
Aspect	clear and smooth liquid
Specific weight	1.06 +/- 0.02
Density at 15°C	1.05 +/- 0.02 gr/cc
Viscosity at 10°C	max. 80 ctstok
at 20°C	max. 50 ctstok
pH at 20°C	7.5-8
Freezing point	-7°C
Solubility in water at 20°C	completely water-soluble
Incompatibilities	oils, grease and similar substances
Storage	in a cool ventilated place, not expose to direct sunlight, at temperatures higher than 8 °C
Lifetime	in its sealed original container and in compliance with the indicated storage standards, approx. 2 years
C.O.D.	29.000 mg/l for 4% solutions. Biodegradable pursuant to the law
Recommended foam weight	60-65 gr/lt
	The product must be diluted in water by 1% (100 l of water for 1 l of product)

MAIN EMPLOYMENTS REFERRED TO THE DENSITIES

Light Weight Cellular Cement and Concrete have several and always increasing applications in all types of construction work. Some of the most common applications are listed below:

- 300 - 600 Kg/m³ (light weight cellular cement)

Light weight and insulating cements for floors' foundation, for heat insulation and slope for flat roofs, rigid floors foundation; tennis courts foundation; interspace concrete filling; raceways insulation; thermo insulating blocks; steel structures fireproofing; tunnels and pipelines compensating mass; dumps' foundation and coverings; land reclamation and consolidation; underground cavities infill and all types of infill where an elevated thermal insulation is required.

- 600 - 900 Kg/m³ (light weight cellular concrete)

Stables and pig-sties foundations; industrial foundations; partition and tamponing slabs; ceiling slabs; concrete + Light Weight Concrete mixed panels.

- 900 - 1200 Kg/m³ sand-cement mixture (light weight cellular concrete)

Blocks for outside walls; slabs for partitions; concrete and light weight concrete mixed panels for covering; foundations for elastic floors.

- 1200 - 1700 Kg/m³ sand-cement mixture (light weight cellular concrete)

Prefabricated panels for civil and industrial buildings plugging; walls casting; gardens ornaments.

The main technical characteristics of the LWCC produced with AGON C® are:

- **perfect thermal insulation;**
- **excellent thermal inertia;**
- **good compression strength, compared to different consistencies;**
- **absolutely fire-resistant;**
- **time inalterability;**
- **shows less cracks compared to the other protein based foamy LWCC.**

USEFUL DIRECTIONS FOR VARIOUS EMPLOYMENTS:

a) Rigid pavement floor foundations (ceramic tiles, marble, paving, tiles, etc., laid down with mortar.)

A 400 Kg/m³ density cement-only mixture is generally used to obtain a thermal insulation and an acoustic absorption, to load the structure as little as possible. The floor foundation minimum advisable thickness is of 4 ÷ 5 cm. Before casting, the l.w.c.c. foundation, the underneath concrete must be wet, avoiding the formation of large pools of water. For a better sound-proof result, it is advised to detach the l.w.c.c. slab from the partition walls by lying strips of tarred paper board, of glass wool or of rubber panels along the wall perimeter and to lay sound insulating panels under the l.w.c.c..

b) Elastic pavement floor foundation (carpets, woods, rubber, linoleum, etc.)

As such floor coverings are directly glued to the floor foundation, the most suitable density is of 1400 Kg/m³. These types of pavement can be laid down on a light weight cellular cement 400 Kg/m³ slab, with a 4÷5 cm mortar slab on top, too.

c) Heat insulation and sloping of flat roofs

A 400 Kg/m³ cement-only mixture is the ideal density for such application and the standard sloping should be of 1÷1,5%.

The thickness at the end of the slope should not be less than 5 cm.

It is recommended to wet the floor before casting l.w.c.c, avoiding water pools, and in the summer time it is advised to keep the light weight cellular cement wet for 48 hours after casting, to avoid a fast dehydration.

d) Interspace filling

For this application the standard density is about 300 Kg/m³ of cement-only mixture. The interspace should be filled in following stages (30-50 cm at the time) every 12 hours or more.

e) Floor foundations for agricultural and industrial buildings

In this case, the most suitable density is given by 1200 Kg/m³ or a foundation of 400-500 Kg/m³ density, with at least a 10 cm concrete slab on top.

It is worth noting that this application has given interesting results in the construction of stables and pig-sties, where the pavement insulation provides an ideal thermal insulation for the animals.

f) Concrete blocks for masonry and small panels

Concerning these products, the density may vary from 800 to 1100 Kg/m³, depending on physical strength, thermal insulation and size of the blocks required for the application.

For the blocks casting, steel or wooden perimetral moulds should be used, while the moulds for the pavement should be made of steel or concrete.

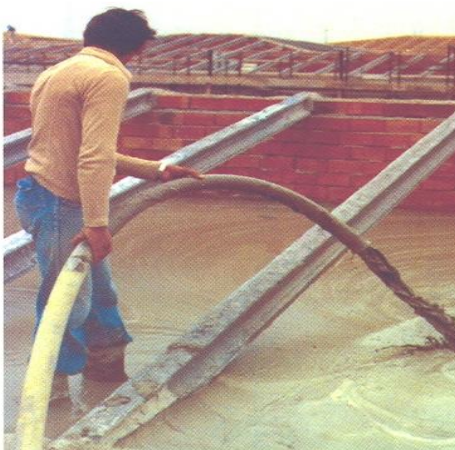
To demould or fasten the setting, only high quality products must be used.

g) All types of panels, including partitions.

The right density for this range goes from 1200 to 1700 Kg/m³.

The density for such applications should be chosen considering the required strength, thickness and dimensions of panels.

For mixed slabs (normal concretes + light weight cellular concrete), it is better to cast the light weight cellular concrete immediately after the concrete in order to allow simultaneous setting and perfect adhesion between the two different materials.



APPLICATION

The various components of l.w.c.c. are put in the mixer in the following sequence:

water-cement-foam (for mixtures of cement only)
 water-cement-sand-foam (for sand and cement mixtures)

Water-cement, (or water- cement- sand) have to be put slowly in while the cement-mixer is in motion and left to mix until a pasty slurry (or mortar) is obtained.

Once the slurry has become homogeneous the foam should be added, according to the quantity suggested by the following table. The mixing process should then continue until all the foam is completely mixed with the pasty slurry (or mortar).

At this stage the material is ready for casting.

Main applications	Den sity Kg/ m ³	Approximate quantities for a m ³ of l.w.c.c. AGON C						Approximate quantity of AGON C for m ³		Wet density		Approximate quantity of foam	
		S (kg) : c	S (kg) : c	S (kg) : c	S (kg) : c	Cement	Water	With aggregates	Cement only				
		4:1	3:1	2:1	1:1	Kg	kg	kg	kg	Kg/m ³		L/m ³	L/m ³
Self-bearing structures or modest capacity load structures	1700												
	1600	1300 350	1220 410				150	0.12		1815	1795	175	690
	1500	1235 310	1135 390				150	0.14		1715	1695	220	230
	1400	1160 290	1070 375				140	0.17		1610	1590	260	280
	1300	1080 270	950 375				140	0.19		1510	1490	305	320
	1200	1010 255	870 350				130	0.22		1420	1380	350	365
		925 235	800 350				130	0.24		1320	1305	395	405
For filling or light structures	1100		785 265	690 350			125	0.27		1205	1195	450	460
	1000		720 240	580 350			125	0.30		1120	1110	485	500
	900			560 280	410 410		120	0.34		995	975	545	570
	800			500 250	365 365		110	0.37		900	880	600	615
	700				320 320		100	0.40		780		660	
Thermo phono insulated foundations with or without formation of gradients up to 4%	600					495	150		0.41		700		690
	500					415	150		0.43		610		715
	450					375	145		0.44		565		730
	400					330	140		0.45		520		750
	350					290	135		0.46		470		770
	300					250	130		0.47		430		790

If using a cement-mixer with paddles, which let the mixture pass through, it is important to cover the inside blades with wooden or steel boards; this to avoid the making of lumps during the mixing phase.

The l.w.c.c. should not be kept in the mixer or transporting containers longer than necessary, to avoid air-bubbles collapsing as well as setting, before it is used.

Therefore, mixing, transporting and casting should be completed as quickly as possible, in order to guarantee successful results with AGON C® light weight cellular cements or concretes.

The material can be cured either naturally or, more quickly, by using a curing forced method.

We suggest to keep the manufactured product made with air cured light weight cellular concrete, after de-molding, for a period of 28 days, before using it.

We recommend treating the material as normal concrete, during setting & hardening time, which means to avoid a rapid evaporation of the remaining moisture to prevent concrete dehydration which, if allowed to occur, would cause strength lowering.

Instructions should be followed in order to exploit the best physical and mechanical properties of the l.w.c.c. produced with the foaming agent AGON C®.

GUARANTEE

The products are produced with the best raw materials available on the market in order to obtain a high quality product. Our guarantee covers the quality of the product but not its applications which cannot be under our control.