

MIXO[®] Foam

High Performance Foaming Agent

DESCRIPTION

MIXO[®] Foam is a chemical blend of organic compounds intended to assist the generation of stabilized air-entrainment during the production of low-density concrete and mortar systems. MIXO[®] Foam is a highly concentrated foaming agent for use in producing Controlled Low Strength Materials (CLSM), and engineered, cellular cementitious mixtures (mortar, concrete, or grout) for numerous applications. MIXO[®] Foam admixture is suitable for use in combination with various types of foam generating equipment, especially equipment that generates foam via air pressure.

USES

MIXO[®] Foam is ideal to be used in:

- low density mortar systems such as perlite and vermiculite
- As a normal air-entraining agent for conventional concrete and mortars.
- Floor fill, Roof decks, Pipeline/Storage tank abandonment.
- Thermal insulation.
- Lightweight precast panels.
- Unstable soil replacement.
- Back, trench, void, and structural fill.

ADVANTAGES

- Concrete can be placed easily by pumping.
- Does not require compaction, vibration or leveling.
- Creates a matrix of stable, evenly distributed air bubbles in both fresh and hardened concrete system.
- Prevents segregation of the cement and low-density aggregates such as vermiculite / perlite or other low-density aggregates such as polystyrene beads.
- Does not retard or affect the hydration characteristics of concrete or mortars.

- Has all the attributes of conventional air entraining admixtures.
- Compatible with all types of Portland cement, class C and F fly ash, slag, micro silica, calcium chloride and fibers.
- Chloride free, safe to be used in contact with the reinforcement.
- High level of sound and thermal insulation.
- Thermal conductivity is only about 5-20% that of dense concrete.
- Reduced bleeding, consequently reduced segregation

STANDARDS COMPLIANCE

MIXO[®] Foam complies with the requirements of complies with ASTM C869.

PACKAGING

210 liter drums or 1000 liter flow bins. Tanker loads are also available on request.

SHELF LIFE & STORAGE

12 months shelf life when stored in its original container under shaded area in a temperature within the range of 2°C to 50°C

TECHNICAL PROPERTIES

Appearance	Yellowish green liquid
Density Kg/Lt @ 25°C	1.06 ± 0.02
PH @ 25°C	6 ± 1
Chloride content	Nil to BS EN 934-2
Na ₂ O equivalent	≤ 1.0 %

APPLICATION INSTRUCTIONS

Dispensing

Water and MIXO® Foam foaming agent are fed separately into the foam generator which mixes them in the correct ratio, the mixture of water and foaming agent is called the pre-foaming solution. Pre-foaming solution and compressed air are fed through a lance which creates a stiff white foam with a volume 20 – 25 times that of the pre-foaming solution. The foam is then mixed into the mortar slurry in a suitable cement mixer, to make lightweight foamed concrete.

Dosage

There is no standard dosage for MIXO® Foam admixture foaming agent. The dosage is dependent upon the required density and end use. A trial evaluation should be conducted to determine the foaming time necessary to obtain the required density. The common dosing range of MIXO® Foam is 0.1 – 2.0 liters per 100 kg of cement, including any cement replacement material.

Performance Guidelines

Lightweight foamed concrete is typically made with dry densities from 400 – 1600 Kg/m³ and compressive strengths from 1 – 25 N/mm². This is achieved by varying the mix design of sand: cement: water and foam addition.

Dry Density [Kg/m ³]	409	586	799	732
Wet Density [Kg/m ³]	520	750	940	940
Sand:Cement:Water	0:1:0.55	0:1:0.55	1:1:0.6	0:1:0.55
Cement [Kg]	314	466	352	592
Dry Sand [Kg]	0	0	352	0
Water [Lit]	173	257	211	326
Slurry Density [Kg/m ³]	1784	1783	2005	1784
MIXO® Foam [Lit]	1.25	1.05	0.95	0.85
Water [Lit]	31.25	26.25	23.75	21.25
Foam [Lit]	650	546	494	442
28 Day Compressive Strength [MPa]	1.0	3.0	7.0	4.5
Thermal Conductivity [W/m.k]	0.1	0.14	0.21	0.16
Water [Lit]	31.25	26.25	23.75	21.25
Foam [Lit]	650	546	494	442

The above table shows mix designs for lightweight foamed concrete for a range of dry densities, the amounts of cement, sand, water and foam shown for each mix design are required to make 1 m³ of lightweight foamed concrete. The amounts of foaming agent are for MIXO® Foam foaming agent, where the foam is made using the dry method using a dilution of 4% and expansion rate of 20 times. In general terms, the lower the ratio of sand: cement, the stronger the foamed concrete will be. Also foamed concrete of a higher density will also have a higher strength. When placing foamed concrete as a thin section over a large, exposed area it needs to be cured in the same way as normal concrete so that it will gain the appropriate strength. Performance is dependent on local conditions and on the quality of the other materials in the mix.

Curing

Fresh concrete should be cured by water immediately after final setting time, especially at high temperatures. In the absence of water, use one of our Cicocure® products.

Cleaning and Disposal

Spillages of MIXO® Foam should be washed out with water or absorbed onto fine sand and disposed out in accordance with local authorities' regulations.

Precautions

Health and Safety

MIXO® Foam is non-hazardous. It should not be swallowed or allowed to come into contact with skin or eyes. Suitable protective goggles and gloves should be worn. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. When contact with the skin, wash off immediately with soap and water. If swallowed, seek medical attention immediately, do not induce vomiting.

Warranty

CIC products are guaranteed against defective materials and manufacture and sold subject to CIC's standard terms and conditions of sale. Whilst CIC endeavors to ensure that any advice, information or recommendation given is correct, the company cannot accept any liability either directly or indirectly arising from the use of its products. User of the product must test the product's suitability for the intended application and purpose, since the company has no control over the application of its products. Information contained in this document is given on the best current knowledge. Our Products are in continuous development and CIC reserves the right to change the product without prior notice.

