

MICRO-AIR[®] 108

Air entraining admixture for high durable concrete structures against freeze/thaw cycles damages

Description and Where to Use

MICRO-AIR 108 is an air entraining admixture designed to increase durability of concrete structures against freeze/thaw cycles damages (exposure classes XF1-4 according to EN 206-1).

MICRO-AIR 108 provides durable concrete resistant to ice and frost by creating stable, small, closely spaced air bubbles system.

Concrete durability research has established that the best protection for concrete from the adverse effects of freeze/thaw cycles and de-icing salts results from:

- proper air content in the hardened concrete;
- a suitable air-void system in terms of bubble size and spacing;
- adequate concrete strength, assuming the use of sound aggregates and proper mixing, placing, handling and curing techniques.

According EN 206-1 the optimum air content must be in the range of 4-6%.

MICRO-AIR 108 is free of chloride and meets UNI EN 934-2, UNI EN 480 (1-2), ASTM C 260 requirements.

Benefits

- High durable concrete structures against freeze/thaw cycles damages.
- Greatly improved stability of air-entrainment.
- Improved air-void system in hardened concrete.
- Reduced permeability.
- Increased watertightness.
- Reduced segregation and bleeding.
- Improved plasticity and workability of fresh concrete.
- Improved ability to entrain and retain air in low-slump concrete, concrete containing high-carbon content fly ash, concrete containing large amounts of fine materials, concrete using high-alkali cements, high-temperature concrete and concrete with extended mixing times.

Directions for Use

- Add MICRO-AIR 108 admixture to the concrete mix using a dispenser designed for air-entraining admixtures or add manually using a suitable measuring device that ensures accuracy within plus or minus 3% of the required amount.
- Check the air content of the first batch and make further adjustments if needed. Due to possible changes in the factors that affect the dosage rate of MICRO-AIR 108, frequent checks should be made during the course of the work.
- Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

Compatibility

In order to optimise special requirements the use of the following complementary additives is suggested:

- **GLENIUM** or **RHEOBUILD** series superplasticizers in order to obtain higher concrete strength or to compensate the reduction of strength due to micro bubbles.
- silica fume **MEYCO MS 610** for high performance concrete and improve durability in chemical aggressive environments (exposure classes XC1, XC2, XC3, XC4, XD1, XD2, XA1, XA2, XA3, XS2, XS3 according to UNI EN 206-1 ed UNI 11104).
- synthetic fibres **RICEM** to prevent cracks due to plastic shrinkage.
- curing agent **MACKURE C** against too quick evaporation of mixing water.

Technical Information	
Form	Liquid
Colour	Colourless
Relative density (kg/l at 20°C)	0.978 – 1.018

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Dosage

In order to meet EN 206-1 requirements (the optimum air content should be in the range of 4-6%), the recommended dosage rate of MICRO-AIR 108 is 0.03-0.400 litres per 100 kg of binder.

Other dosages may be recommended in special cases according to specific job site conditions.

Air entrainment can be strongly affected by:

- granulometric distribution of aggregates
- fine materials composition (cement, sand, mineral admixture type)
- quantity of fly ash or silica fume
- concrete workability
- type of mixing and transportation
- concrete pumping

In these cases, different dosages of MICRO-AIR 108 could be used. Please consult our Technical Service Department for advice.

Effect of air addition on concrete compressive strength

Air addition on concrete can affect its hard state with a reduction on compressive strength that can range from 5 to 10 MPa depending on the percentage of added air. Therefore, if needed, it is recommended to adjust the concrete composition with an increase of cement content in order to compensate the compressive strength loss.

Packaging and Storage

MICRO-AIR 108 is available in 25 lt tank and 208 litre drums.

MICRO-AIR 108 must be stored in a place where the temperature does not drop below 5 °C.

We recommend not to mix MICRO-AIR 108 with admixture of POZZOLITH, RHOBUILD and GLENIUM line.

Safety precautions

MICRO-AIR 108 is a light basic water solution.

Avoid eye and skin contact and wear rubber gloves and goggles. If contact occurs, rinse with plenty of water; in case of eye contact seek medical advice.

For further information, refer to Material Safety Data Sheet.

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For further information, please consult your local BASF Construction Chemicals Italia Spa representative.

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The owner, his representative, or the contractor is responsible for checking the suitability of our products as to the intended use and aims.

Supersedes all prior issues on this product.

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