

# MasterAir 119

Air entraining admixture for concrete - EN 934-2: T5

## Material Description

MasterAir 119 is an air-entraining admixture which gives concrete extra protection by creating ultra-stable air bubbles that are strong, small and closely spaced - a characteristic especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired. Even when used at a lower dosage rate than standard air-entraining admixtures:

MasterAir 119 complies with ASTM C-260, and Water Regulations Advisory Service (WRSR) approval listing 0301527

## Areas of Application

- Concrete exposed to freeze/thaw attack
- To reduce bleeding due to poor aggregate grading

## Characteristics and Benefits

MasterAir 119 offers the following benefits:

- Increased resistance to damage from freeze/thaw cycles and to scaling from de-icing salts
- Reduced permeability - increased water-tightness
- Reduced segregation and bleeding
- Improved plasticity and workability
- Greatly improved stability of air entrainment
- Improved air-void system in hardened 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.

## Dosage

MasterAir 119 is designed to be incorporated in concrete targeted to achieve air contents in the range 3 - 8%. It is compatible with all EN 197 cements but the dosage may vary.

The amount of MasterAir 119 admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mix, use 600 ml 100kg of cement and adjust in the light of results obtained. In mixes containing water-reducing, set-controlling admixtures, the amount of MasterAir 119 may be considerably less than the amount required in plain concrete.

There is no standard dosage rate for MasterAir 119 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete is not predictable because of differences in constituent materials. Typical factors which might influence the amount of air entrained are: water content, temperature, cement, sand grading, sand aggregate ratio, slump, means of conveying and placement, use of extra fine materials such as fly ash, etc. The amount of MasterAir 119 used will depend upon the amount of entrained air required under actual job conditions.

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, normal, or lightweight fine aggregate. If this is not possible, plant trials should be performed to identify the optimum dispensing method. When using lightweight fine aggregate, field evaluations should be conducted to determine the best location to dispense the air-entraining admixture - on the damp fine aggregate or with the initial batch water.

## Application Procedure

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; and adequate concrete strength; assuming the use of sound aggregates and proper mixing, placing, handling and curing techniques.

Control of air content should be based upon determinations made on concrete at the time of placement, following adjustment of the batch to proper consistency (slump). The rate of use of an air-entraining admixture depends on the air content to be obtained along with many other factors. The



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amount normally required is reduced by the introduction of water-reducing, set-controlling admixture.

When unusually low amounts of an air-entraining admixture are sufficient to achieve normal ranges of air content or if the required amount of air-entraining admixture necessary to achieve required levels of air content is observed to decrease significantly under given conditions, the reason for this change should be investigated. In such cases, it is especially important to determine: (a) that a proper amount of air is contained in the fresh concrete at the point of placement, and (b) that a suitable air-void system (spacing factor) is being obtained in the hardened concrete.

## Mixing

Add MasterAir 119 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.

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In mixes containing water-reducing, set-controlling admixtures, the amount of MasterAir 119 needed is somewhat less than the amount required in plain concrete. In mixes requiring a significantly higher or lower dosage to obtain the desired air content, consult our Technical Services Department.

Measure the air content of the trial mix and either increase or decrease the quantity of MasterAir 119 admixture to obtain the desired air content in the production mix.

Check the air content of the first batch and make further adjustments if needed. Frequent checks during the course of the work should be made since factors mentioned in paragraph 3 above may require adjustments in the MasterAir dosage rate.

Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

## Compatibility

MasterAir 119 can be used with all types of EN 197 Cements. For use with other special cements, contact our Technical Services Department. MasterAir 119 should not be pre-mixed with other admixtures. If other admixtures are to be used in concrete containing MasterAir 119 they must be dispensed separately.

MasterAir 119 admixture is compatible with concrete containing other admixtures or admixture systems - water-reducers, high-range water-reducers, accelerators, retarders, densifiers and water repellents. It also increases the entrained air content of concrete made with air-entraining Portland cement. When such complimentary admixtures are required it is important that laboratory trials are performed, prior to any supply, to determine the respective dosages of any complimentary admixture, and the suitability, in the fresh and hardened state, of the resultant concrete. In these circumstances we recommend that you consult our Technical Services Department for further advice.

The use of MasterAir 119 air-entraining admixture with MasterPozolith admixtures forms a desirable combination for producing the highest quality, normal or lightweight concrete. Heavyweight concrete normally does not contain entrained air.



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## Packaging

MasterAir 119 is supplied in 1000-litre IBC's, and 15-litre containers.

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<b>Product Data</b>	
Appearance:	Light brown liquid
Specific gravity @ 20°C:	1.00 ± 0.02 g/cm <sup>3</sup>
pH-value:	10.5 ± 1
Alkali content (%):	≤ 0.50 by mass
Chloride content (%):	≤ 0.10 by mass
Compressive strength – 28 day	≥ 75% of Reference mix
Air content in fresh concrete	≥ 2.5% by volume of Reference mix & total air content between 4% & 6%
Air void characteristics in hardened concrete	Spacing factor in test mix ≤ 0.200 mm
Corrosion behaviour	Contains only components according to BS EN 934-1:2008, Annex A.1
Dangerous substances	No Performance Determined
Durability	No Performance Determined
<b>Logistics</b>	
Shelf life:	12 months if stored according to manufacturer's instructions in unopened container.
Storage conditions:	Store in original sealed containers and at temperatures between 5°C and 30°C. Store under cover, out of direct sunlight and protect from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.
Handling and transportation:	Refer to MasterAir 119 Safety Data Sheet
Disposal:	Refer to MasterAir 119 Safety Data Sheet

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## DISCLAIMER

MasterAir 119, Master Builders Solutions UK Ltd, Version 7

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

**Health and Safety:** \*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted. **Spillage:** Chemical products can cause damage; clean spillage immediately.

**DISCLAIMER:** "Master Builders Solutions UK Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use. Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application. Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.



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Declaration of Performance can be found at:  
[www.master-builders-solutions.com/en-gb](http://www.master-builders-solutions.com/en-gb)

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