

# MasterAir<sup>®</sup> 100

## Air-entraining admixture for concrete

### DESCRIPTION

**MasterAir 100** is an air-entraining admixture, which creates ultra-stable air bubbles that are strong, small and closely spaced.

### TYPICAL APPLICATIONS

Entraining a controlled air content in a wide range of concrete types:

- Normal mix designs.
- 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.
- Concrete with extended mixing times.

### ADVANTAGES

**MasterAir 100** is especially useful in the types of concrete known for their difficulty to entrain and maintain the air content desired. Entrainment of the optimum air content in concrete results in the following improvements to quality:

- Increased freeze / thaw resistance.
- Reduced permeability - increased watertightness.
- Reduced segregation and bleeding.
- Improved plasticity and workability.
- Increased resistance to scaling.
- Greatly improved stability of air entrainment.
- Ready to use - solution is at optimum strength for accurate dispensing.

**MasterAir 100** 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.

The use of **MasterAir 100** with Master Builders Solutions admixtures forms a desirable combination for producing the highest quality, normal or lightweight concrete.

### PACKAGING

**MasterAir 100** is supplied in 210 L drums and bulk delivery as appropriate.

### TYPICAL PROPERTIES\*

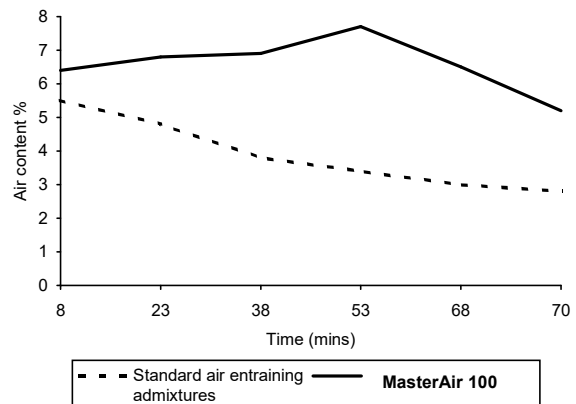
Specific gravity @25°C	1.013
pH	7.0
Colour	Amber - brown
Dry extract (%)	6.8
Chloride content	"chloride-free" to EN 934
Flash point	Not applicable
Freeze point	-1°C

### STANDARDS

**MasterAir 100** meets the requirements of:

- ASTM C-260-86
- AASHTO M-154
- CRD-C 13-77
- BS 5075: 1982 Part 2
- DIN 1048 Part 1
- EN934-2 Table 5

Figure 1 Air content vs mixing time



1. In accordance with ASTM C-182: 3 minutes mix, 3 minutes rest followed by 2 minutes final mixing.
2. 13 minutes agitation and 2 minutes mixing.
3. Retempered and 2 minutes mixing time.

The graph represents the average of a number of laboratory and field evaluations data. The tests were conducted on concrete mixes known for their difficulty to entrain and maintain the desired air content.

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These mixtures contained large amounts of fine materials, high carbon content fly ash, high alkali cements, high concrete temperatures and low slumps.

## APPLICATION GUIDELINES

As stated in ACI 212 and other publications, when two or more admixtures are used, they must be added to the mix separately (through dispensers or manually) and must not be mixed with each other prior to adding to the concrete mix.

For optimum, consistent performance, the air-entraining admixture should be dispensed on damp, fine aggregate.

Add **MasterAir 100** 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  $\pm 3\%$  of the required amount.

## DOSAGE

There is no standard dosage rate for **MasterAir 100** admixture. The exact quantity of air-entraining admixtures needed should be determined by trial mixes. Factors are: temperature, cement, sand grading, sand-aggregate ratio, slump, means of conveying and placement, use of extra fine materials such as fly ash and micro silica.

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

## STORAGE AND SHELF LIFE

**MasterAir 100** admixture should be stored and dispensed at 2°C or higher. Although freezing does not harm this product, precautions should be taken to protect it from freezing. If it freezes, thaw and reconstitute by mild mechanical agitation. Do not use pressurised air for agitation. Shelf life is 12 months when stored as above.

## HEALTH AND SAFETY

**MasterAir 100** contains no hazardous substances requiring labelling. For further information see material safety data sheet.

## QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.

\* Properties listed are based on laboratory controlled tests.

® = Registered trademark of the MBCC Group in many countries.

## STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

## NOTE

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