MB AE® 90

Admixture for entraining air in concrete

Master Builders Technologies

DESCRIPTION:

MB AE® 90 admixture is an air-entraining admixture which meets the requirements of ASTM C 260, AASHTO M 154 and CRD-C 13.

ADVANTAGES OF AIR ENTRAINMENT:

The entrainment of air in concrete results in the following improvements in concrete quality:

- Increased resistance to damage from freezing and thawing
- Increased resistance to scaling from deicing salts
- Reduced permeability—increased watertightness
- Reduced segregation and bleeding
- Improved plasticity and workability
- Improved properties of concrete block, and pipe.

Concrete durability research has established that the best protection for concrete from the adverse effects of freeze/thaw cycles and deicing salts results from: (a) proper air content in the hardened concrete; (b) a suitable air-void system in terms of bubble size and spacing; and (c) 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 dosage rate of an air-entraining admixture depends on the air content to be obtained along with many other factors. The amount normally required is reduced by the introduction of a water-reducing, set-controlling admixture.

When unusually low or high amounts of an air-entraining admixture are required 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 change significantly under given conditions, the reason 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 is being obtained in the hardened concrete.

FEATURES:

Ready to Use—Solution is the proper concentration for rapid, accurate dispensing.

Compatible for Use—MB AE 90 admixture is compatible with concrete containing other admixtures; water-reducers, high-range water-reducers, accelerators, retarders, and water repellents.

The use of MB AE 90 air-entraining admixture with Master Builders water-reducing, set-controlling admixtures forms a desirable combination for producing high-quality normal or lightweight concrete. Heavyweight concrete normally does not contain entrained air.

NOTE: When two or more admixtures are used, each 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. 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.

USAGE INFORMATION:

MB AE 90 admixture is a ready-to-use solution.
Do not dilute or mix it with any other admixture.

Add MB AE 90 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.

There is no standard dosage rate for MB AE 90 admixture. The exact quantity of air-entraining admixture needed for a given air content of concrete is not predictable because of differences in concrete-making materials. Typical factors which might influence the amount of entrained air are: temperature, cement, sand gradation, sand-aggregate ratio, slump, means of conveying and placing, use of extra fine materials such as fly ash, etc.

The amount of MB AE 90 admixture used will depend upon the amount of entrained air required under actual job conditions. In a trial mix, use 1/4 to 4 fl oz/ 100 lbs
(16 to 260 mL/100 kg) of cement.

In mixes containing water-reducing, set-controlling admixtures, the amount of MB AE 90 needed may be somewhat less than the amount required in plain concrete. In mixes requiring a higher or lower dosage to obtain the desired air content, consult your local Master Builders representative. Measure the air content of the trial mix and either increase or decrease the quantity of MB AE 90 admixture to obtain the desired air content of the first batch and make further adjustments if needed.

Frequent checks during the course of the work should be made since many factors may require adjustments in the MB AE 90 dosage rate. Adjustments to the dosage should be based on the amount of entrained air in the mix at the point of placement.

TEMPERATURE PRECAUTION:

MB AE 90 admixture should be stored and dispensed at 31 °F (-.5 °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 pressurized air for agitation.

PACKAGING:

MB AE 90 admixture is supplied in 55 U.S. gallon (208 liter) drums and bulk delivery.

CAUTION:

Chemical goggles and gloves are recommended if handling large quantities of material.

For additional information on MB AE 90 admixture or on its use in developing a concrete mixture with special performance characteristics, contact your local Master Builders representative.

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