

# Airalon<sup>®</sup> 3000

Air-entraining admixture ASTM C260

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## Product Description

Airalon<sup>®</sup> 3000 admixture is an aqueous complex mixture of organic acid salts. It is a specially formulated concrete air-entraining admixture that provides freeze-thaw resistance and enhances the finishability characteristics of concrete. Airalon 3000 admixture is manufactured under stringent controls, assuring quality and uniform, predictable performance. One gallon weighs approximately 8.5 lbs (1.02 kg/L). Airalon 3000 complies to ASTM C260 *Standard Specifications for Air-Entraining Admixtures for Concrete*, and does not contain intentionally added chlorides.

## Uses

Airalon 3000 admixture is recommended for use in ready-mix, precast, prestress and other concrete product plants where the intentional entrainment of a specified level of air is required. *ACI 201 Guide to Durable Concrete* recommends all concrete which is exposed to any level of freezing and thawing or is subjected to the application of de-icing salts during the winter months should be air entrained.

Airalon 3000 admixture has been found to be particularly effective in both high cement factor and low slump concrete mixes, which require a very efficient air-entraining admixture.

Airalon 3000 admixture may also be used when a stable air void system is required over time.

## Performance

Airalon 3000 disperses and generates millions of discrete semi-microscopic bubbles throughout the concrete via mixing mechanics. These air bubbles act much like flexible ball bearings, thereby increasing the plasticity and workability of the concrete. Surface bleeding, plastic shrinkage and aggregate segregation are also minimized.

Through the purposeful entrainment of air, Airalon 3000 markedly increases the durability of concrete to severe exposures, particularly freeze-thaw cycling. It has also demonstrated a remarkable ability to impart resistance to the action of frost and de-icing salts as well as sulfate, sea and alkaline waters.

## Product Advantages

- Can be used in wide spectrum of mix designs
- Excellent rheological properties makes it particularly useful for longer transit times
- Uniform, predictable air entrainment
- Superior air stability minimizes air loss during placement
- Economical to use in concretes which are typically difficult to air entrain

## Addition Rates

Airalon 3000 admixture addition rates will vary according to the specified level of air required. Addition rates are influenced by several variables including: specific mix design parameters, material properties of the cement, fly ash, coarse and fine aggregates, and the effects of other chemical admixtures. Other factors such as ambient and concrete temperature, mixing time and time of addition can also affect the required dosage rates. It is recommended that pre-job testing be conducted in order to assure the correct dosage rate of Airalon 3000 admixture is used. Typical Airalon 3000 admixture addition rates range from ½ to 3 fl oz/100 lbs (30 to 200 mL/100 kg) of cement.

## Concrete Mix Adjustment

Entrained air will increase the volume of the concrete making it necessary to adjust the mix proportions to maintain the cement factor and yield. This may be accomplished by a reduction in water requirement and aggregate content.

## Compatibility with Other Admixtures and Batch Sequencing

Airalon 3000 admixture is compatible with most GCP admixtures as long as they are added separately to the concrete mix. In general, it is recommended that Airalon 3000 admixture be added to the concrete mix near the beginning of the batch sequence for optimum performance, preferably by “dribbling” on the sand. Different sequencing may be used if local testing shows better performance.

Please see GCP Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations. Airalon 3000 admixture should not come in contact with any other admixture before or during the batching process, even if diluted in mix water. Airalon 3000 admixture should not be added directly to heated water.

Pretesting of the concrete mix should be performed before use, as conditions and materials change in order to assure compatibility, and to optimize dosage rates, addition times in the batch sequencing and concrete performance. Please consult your GCP Applied Technologies representative for guidance.

## Packaging & Handling

Airalon 3000 is available in bulk, delivered in metered tank trucks, totes and drums.

Airalon 3000 freezes at about 30 °F (-1 °C), but its air-entraining properties are completely restored by thawing and thorough mechanical agitation.

## Dispensing Equipment

A complete line of automatic dispensing equipment is available. Accurate and simple, these dispensers are easily installed to discharge product into the water line, on the sand, or directly into the mixer.

## Specifications

Concrete shall be air entrained concrete, containing 4% to 8% entrained air. The air contents in the concrete shall be determined by the pressure method (ASTM Designation C231), volumetric method (ASTM Designation C173) or gravimetric method (ASTM Designation C138). The air-entraining admixture shall be Airalon 3000, as manufactured by GCP Applied Technologies, or equal. The air-entraining admixture shall be added at the concrete mixer or batching plant in such quantities as to give the specified air contents.

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