

DAREX® II AEA Air-entraining admixture ASTM C260

Product Description

Darex® II AEA is an air-entraining admixture which generates a highly stable air void system for increased protection against damage from freezing and thawing, severe weathering, or de-icer chemicals. Darex II AEA is a complex mixture of organic acid salts in an aqueous solution specifically formulated for use as an air-entraining admixture for concrete and is manufactured under rigid control which provides uniform, predictable performance. It is supplied ready-to-use and does not require pre-mixing with water. Darex II AEA is a dark brown liquid. One gallon weighs 8.7 lbs (1.04 kg/L). Darex II AEA complies to ASTM C260 *Standard Specifications for Air-Entraining Admixtures for Concrete*.

Uses

Darex II AEA is used in ready-mix, block, and concrete products plants to improve air entrainment stability. It is particularly effective in maintaining air content during longer haul times. Darex II AEA performs well in

conventional concrete and is effective in plasticizing mixes and with slag, lightweight, or manufactured aggregates which tend to produce harsh concrete.

Darex II AEA entrains air effectively with microsilica concrete and with fly ash concrete.

Performance

By agitation of concrete mixers, Darex II AEA disperses and generates millions of discrete semi-microscopic bubbles throughout the concrete composite. Once thoroughly mixed, the concrete contains a stable network of bubbles which act much like ball bearings increasing mobility, or plasticity, of the concrete. This aids workability to the mix and permits a reduction of water with no loss of slump. Placeability is improved. Bleeding, segregation and green shrinkage are minimized.

Through the purposeful entrainment of air, Darex II AEA markedly increases the durability of concrete to all exposures.

Product Advantages

- Air stability makes it particularly useful for longer transit times
- Produces excellent air void systems in concretes that are traditionally difficult to air entrain



Addition Rates

There is no standard addition rate for Darex II AEA. The amount to be used will depend upon the amount of air required under job conditions, usually in the range of 4 to 7%. Typical factors which might influence the amount of air entrained are temperature, cement, sand gradation, and use of extra fine materials such as fly ash. Typical Darex II AEA addition rates generally range from ½ to 5 fl oz/100 lbs (30 to 320 mL/100 kg) of cement.

The air-entraining efficiency of Darex II AEA becomes even greater when used with water-reducing and set-retarding agents. This may allow a reduction of up to ⅔ in the amount of Darex II AEA required for the specified air content.

Mix Adjustment

Entrained air results in increased yields with a consequent decrease in the cement content of the placed concrete. This condition calls for a mix adjustment, usually accomplished by reducing the fine aggregate content. This is in addition to the reduction in water content brought about by the increase in plasticity.

Compatibility with Other Admixtures and Batch Sequencing

Darex II AEA is compatible with most Grace admixtures as long as they are added separately to the concrete mix. In general, it is recommended that Darex II AEA 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 Grace Technical Bulletin TB-0110, *Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations* for further recommendations. Darex II AEA should not be added directly to heated water.

www.graceconstruction.com

North American Customer Service: 1-877-4AD-MIX1 (1-877-423-6491)

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This product may be covered by patents or patents pending.
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Pretesting of the concrete mix should be performed before use, and 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 Grace representative for guidance.

Packaging & Handling

Darex II AEA is available in bulk, delivered by metered tank trucks, totes and drums.

Darex II AEA will freeze 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 accurate dispensing equipment is available. These dispensers can be located to discharge into the water line, the mixer, or on the sand.

Specifications

Concrete shall be air entrained concrete, containing 4 to 7% entrained air. The air contents in the concrete shall be determined by the pressure method (ASTM Designation C231), gravimetric method (ASTM Designation C138) or volume metric method (ASTM Designation C173). The air-entraining admixture shall be Darex II AEA as manufactured by Grace Construction Products, or equal. The air-entraining admixture shall be added at the concrete mixer or batching plant at approximately ½ to 5 fl oz/100 lbs (30 to 320 mL/100 kg) of cement, or in such quantities as to give the specified air contents.

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