

Darex[®] AEA

Air-Entraining Admixture ASTM C 260, AASHTO M 154

Description

Darex[®] AEA admixture is an aqueous solution of a complex mixture of organic acid salts. Darex AEA is specially 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 premixing with water. One Liter weighs approximately 1.02 kg (8.5 lbs/L).

Uses

Darex AEA is used in ready-mix, block and concrete products plants. It is also used on the job with job-site mixers, highway pavers ... wherever concrete is mixed and there is a need for purposeful air entrainment.

Because Darex AEA imparts workability to the mix, it is particularly effective with slag, lightweight, or manufactured aggregates which tend to produce harsh concrete. It also makes possible the use of natural sand deficient in fines.



Air-Entraining Action

Air is entrained by the development of a semi-microscopic bubble system — introduced into the mix by agitation and stabilized by Darex AEA — in the mortar phase of the concrete.

Workability is Improved.

Millions of tiny air bubbles entrained with Darex AEA act as flexible ball bearings, lubricating and plasticizing the concrete mix.

This permits a reduction in mixing water with no loss in slump. Placeability is improved ... bleeding and segregation are minimized.

Durability is Increased.

Darex AEA concrete is extremely durable, particularly when subjected to freezing and thawing. It has resistance to frost and deicing salts, as well as to sulfate, sea and alkaline waters.

Compatibility with Other Admixtures

Darex AEA is compatible in concrete with all known accelerating admixtures, water-reducing admixtures and water-reducing retarders. By combining the separate effects of air entrainment with the dispersion of a water-reducing admixture, the water requirement of concrete may be reduced with proportional increases in strength and improvement in durability. Each admixture should be added separately to the mix.

Addition Rates

There is no standard addition rate for Darex AEA. The amount to be used will depend upon the amount of air required under job conditions, usually in the range of 4 to 8%. 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 AEA addition rates range from 50 to 200 mL/100 kg (³/₄ to 3 fl oz/100 lbs) of cement.

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

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.

Dispensing Equipment


A complete line of automatic Darex AEA dispensers is available. Accurate and simple, these dispensers are easily adapted to existing facilities on paving mixers and in batching plants.

Packaging

Darex AEA is available in bulk, delivered in metered tank trucks, and 210 L (55 gal) drums. Darex AEA contains no flammable ingredients. It freezes at about -1°C (30°F), but its air-entraining properties are completely restored by thawing and thorough agitation.

Architects' Specification

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 C 231) or gravimetric method (ASTM Designation C 138). The air-entraining admixture shall be a purified hydrocarbon type with a cement catalyst, such as Darex AEA, as manufactured by Grace Construction Products, 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.

 Visit our web site at: www.graceconstruction.com

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