

# DARAVAIR® PAVE 10 Data Sheet

Air-entraining admixture for paving concrete ASTM C260

## Product Description

DARAVAIR® PAVE 10 is a liquid air-entraining admixture designed to generate specification-quality air systems in paving concrete mixes and provides uniform, predictable performance. Based on a high-grade saponified rosin formulation, DARAVAIR® PAVE 10 is chemically similar to vinsol-based products, but with increased purity and supply dependability. DARAVAIR® PAVE 10 is a clean light orange product that weighs approximately 8.5 lbs/gal (1.02 kg/L). DARAVAIR® PAVE 10 admixture meets the requirements of ASTM 260 and AASHTO M 154 and does not contain intentionally added chloride.

## Uses

DARAVAIR® PAVE 10 air-entraining admixture may be used wherever the purposeful entrainment of air is required by concrete specifications. Formulated to perform in low slump concrete, particularly for highway paving applications, DARAVAIR® PAVE 10 generates quality, freeze-thaw resistant air systems in all paving related concrete exposed to freezing and thawing cycles.

## Performance

Air is incorporated into the concrete by the mechanics of mixing and stabilized into millions of discrete semi microscopic bubbles in the presence of a specifically designed air-entraining admixture such as DARAVAIR® PAVE 10. These air bubbles act much like flexible ball bearings increasing the mobility, or plasticity and workability of the concrete. This can permit a reduction in mixing water with no loss of slump. Placeability is improved. Bleeding, plastic shrinkage and segregation are minimized.

Through the purposeful entrainment of air, DARAVAIR® PAVE 10 markedly increases the durability of concrete to severe exposures particularly to freezing and thawing. 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

- Uniform, predictable air entrainment in paving applications
- Can be used in wide spectrum of mix designs
- Superior air stability minimizes air loss during placement

## Addition Rates

There is no standard addition rate for DARAVAIR® PAVE 10. The amount to be used will depend upon the amount of air required for job conditions, usually in the range of 4% to 8%. Typical factors which might influence the amount of air-entraining admixture required are temperature, cement, sand gradation and the use of extra fine materials such as fly ash and microsilica. Typical DARAVAIR® PAVE 10 addition rates range from ½ to 3 fl oz/100 lbs (30 to 200 mL/100 kg) of cement.

The air-entraining efficiency of DARAVAIR® PAVE 10 is usually increased when other concrete admixtures are contained in the concrete, particularly water-reducing admixtures and water reducing retarders. This may allow up to ⅔ reduction in the amount of DARAVAIR® PAVE 10 required.

## Compatibility with Other Admixtures and Batch Sequencing

DARAVAIR® PAVE 10 is compatible with most GCP admixtures as long as they are added separately to the concrete mix. In general, it is recommended that DARAVAIR® PAVE 10 be added to the concrete mix near the beginning of the batch sequence for optimum performance, preferably by discharging 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. DARAVAIR® PAVE 10 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

DARAVAIR® PAVE 10 is available in bulk, delivered by metered tank trucks and in totes and drums.

DARAVAIR® PAVE 10 will freeze at about 30 °F (-1 °C) but its airentraining properties are completely restored by thawing and thorough mechanical agitation.

## Dispensing Equipment

A complete line of accurate automatic 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, containing 4% to 8% entrained air. The air contents in the concrete shall be determined by the pressure method (ASTM Designation C231), gravimetric method (ASTM Designation C138) or volumetric method (ASTM Designation C173). The air-entraining admixture shall be DARAVAIR® PAVE 10, as manufactured by GCP Applied Technologies, or equal and comply with *Standard Specification for Air-Entraining Admixtures* (ASTM Designation C260). 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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Last Updated: 2022-08-17

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