

# DARATARD<sup>®</sup> HC

Set retarder ASTM C494 Type B and D

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## Product Description

DARATARD<sup>®</sup> HC admixture is a ready-to-use aqueous solution of modified salts of hydroxylated carboxylic acids. Ingredients are factory pre-mixed in exact proportions to minimize handling, eliminate mistakes and guesswork. One gallon weighs approximately 9.8 lbs (1.17 kg/L).

## Product Advantages

- Eliminates the need to discharge wash water from the mixer
- Prevents the waste of unused concrete
- Provides predictable extended set for continuous placement on mass concrete and tremie projects or on long hauls to remote sites

## Uses

DARATARD<sup>®</sup> HC retards the initial and final set of concrete. At the usual addition rate of 3 fl oz/100 lbs (190 mL/100 kg) cement it will extend the initial setting time of Portland cement concrete by 2 to 3 hours at 70 °F (21 °C). DARATARD<sup>®</sup> HC is used wherever a delay in setting time will insure sufficient delivery, placement, vibration or compaction time, such as in:

- Hot weather concreting
- Transit mix concrete
- Prestressed concrete

DARATARD<sup>®</sup> HC is also used in special applications, as in bridge decks where it extends plastic characteristics of the concrete until progressive deflection, resulting from increasing loads, is complete.

## Performance

Along with set retardation, DARATARD<sup>®</sup> HC provides water reduction (typically 5% to 10%) in a concrete mix. This waterreducing action of DARATARD<sup>®</sup> HC produces greater plasticity and workability in the fresh concrete. In addition the strength and permeability of the hardened concrete are measurably improved. DARATARD<sup>®</sup> HC is designed for use on jobs where high temperatures or extended setting times are the prime factors. It is recommended only when the primary purpose is to delay and control the setting time of concrete. When time and temperature are not major considerations, GCP Applied Technologies' water-reducing admixtures such as WRDA<sup>®</sup> with Hycol<sup>®</sup> should be used.

## Addition Rates

Addition rates for DARATARD® HC will range from 2 to 4 fl oz/100 lbs (130 to 260 mL/ 100 kg) of cement. The amount to be used will depend upon the degree of retardation required under job conditions. Longer setting times or higher temperatures will require higher addition rates. Conversely, the addition rate will be lower for shorter extensions of setting time.

## Compatibility with Other Admixtures and Batch Sequencing

DARATARD® HC is compatible with most GCP admixtures as long as they are added separately to the concrete mix, usually through the water holding tank discharge line. In general, it is recommended that DARATARD® HC be added to the concrete mix near the end of the batch sequence for optimum performance. 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.

Pretesting of the concrete mix should be performed before use, as conditions and materials change in order to ensure compatibility and to optimize dosage rates, addition times in the batch sequencing and concrete performance. For concrete that requires air entrainment, the use of an ASTM C260 air entraining agent (such as DARAVAIR® or DAREX® product lines) is recommended to provide suitable air void parameters for freeze-thaw resistance. Please consult your GCP Applied Technologies representative for guidance.

## Packaging & Handling

DARATARD® HC is available in bulk, delivered by metered tank trucks, and in drums.

DARATARD® HC contains no flammable ingredients. DARATARD® HC will freeze at about 28°F (-2°C), but will return to full strength after thawing and thorough agitation.

## Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available. DARATARD® HC may be introduced to the mix on the sand or with the water.

## Specifications

Concrete shall be designed in accordance with *Standard Recommended Practice for Selecting Proportions for Concrete*, ACI 211. The set-retarding/water-reducing admixture shall comply with ASTM Designation C494, Type D admixture, and shall be DARATARD® HC, as manufactured by GCP Applied Technologies, or equal. Certification of compliance shall be made available on request. It shall be used in strict accordance with the manufacturer's recommendations. The addition rate shall be adjusted to produce the specified retardation of the concrete mix at all temperatures.

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