

CLARENA[®] MC2000

Water reducing and mid-range water reducing admixture ASTM C494 Type A and Type F

Product Description

CLARENA[®] MC2000 is a patented mid-range water reducing admixture. It is manufactured under rigorous quality control to ensure uniform, predictable performance in the presence of clay bearing aggregates. The product does not contain added calcium chloride, weighs approximately 8.7 lbs/gal (1.04 kg/L), and meets the requirements of ASTM C494 Type A and F.

CLARENA[®] MC2000 is a proprietary aqueous formulation incorporating polycarboxylate and highly purified specialty organic chemicals especially designed to deliver superior and predictable water reduction over a wide range of aggregate clay contents. The superior dispersion capability produces concrete with significantly improved early and ultimate compressive strengths while maintaining near neutral set times.

Product Advantages

- Excellent dose efficiency in presence of clays
- Linear water reduction
- Excellent slump retention
- Superior strength performance
- Neutral set times
- Superior workability and finishability
- Excellent plastic and hardened air control

Uses

CLARENA[®] MC2000 admixture is recommended for use with a wide range of concrete slumps where superior finishing characteristics are desired, particularly in commercial and residential flatwork and formed concrete applications.

The product may be used in a wide variety of applications, including ready mix, job site and concrete paving plants for normal and light-weight concrete and precast products.

Clay Mitigation

Swellable clays, such as smectites, when initially wetted by the mix water, can expand and in such altered states can absorb polycarboxylate polymers, rendering this family of water reducers less effective at providing the concrete properties normally associated with polycarboxylate-based admixtures.

CLARENA[®] MC2000 admixture mitigates the deleterious effects of swellable clays, permitting the use of polycarboxylate-based admixtures while maintaining the many benefits that polycarboxylate-based admixtures bring to concrete.

Advantages

CLARENA[®] MC2000 admixture offers significant advantages over conventional water reducers, especially in environments where a wide range of aggregate clays are present:

- **Linear water reduction capability** The neutral set capability of the product throughout a wide range of dosage rates allows the producer to have “peace of mind” by knowing they can utilize a single admixture to meet all their water reducer and admixture needs and requirements. The versatile water reduction capability may be used to produce high quality, workable concrete over a wide range of water/cement ratios.
- **Superior strength performance** The superior water reduction properties and excellent dispersion characteristics allow the production of lower water to cement ratio concrete, with more complete cement hydration. This combined effect results in increased compressive and flexural strengths at all ages.
- **Superior workability and finishability** The exceptional water reducing performance allows for concrete production at typically desired 3 to 8 in. (75 to 200 mm) slumps, providing smooth flowing concrete with improved placement properties. Floating and troweling, by machine or by hand, easily imparts a smooth, close tolerance surface with less machine time and labor.
- **Excellent plastic and hardened air control** Concretes treated with CLARENA[®] MC2000 admixture exhibit more reproducible AEA demand from batch-to-batch, small, predictable entrained air reduction over time.

Addition Rates

Addition rates may be varied to achieve the desired water reduction and set time. Typically, addition rates can vary from 2–15 fl oz /100 lbs (130–1000 mL/100 kg), but will typically range from 6–12 fl oz/100 lbs (390–780 mL/100 kg) of cementitious materials. Addition rates may vary depending on materials, job conditions and desired performance characteristics. Please consult your GCP Applied Technologies representative for information and assistance.

Compatibility with Other Admixtures and Batch Sequencing

CLARENA[®] MC2000 admixture 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. However it is not recommended for use in concrete containing naphthalene-based admixtures including DARACEM[®] 19. In general, it is recommended that the product be added to the concrete mix near the end of the batch sequence for optimum performance. Please see GCP Technical Bulletin TB-0110, Admixture Dispenser Discharge Line Location and Sequencing for Concrete Batching Operations for further recommendations. Different sequencing may be used if local testing shows better 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

CLARENA[®] MC2000 admixture is available in bulk, delivered by metered tank trucks, in totes, and in drums. The product will begin to freeze at approximately 25 °F (-4 °C) but will return to full strength after thawing and thorough agitation. In storage and for proper dispensing, the temperature should be maintained above 32 °F (0 °C).

Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available.

Safety

Review product label and Safety Data Sheet prior to use.

Specifications

Concrete shall be designed in accordance with Standard Recommended Practice for Selecting Proportions for Concrete, ACI 211.

The mid-range water reducing admixture shall be CLARENA® MC2000 admixture as manufactured by GCP Applied Technologies, or its equivalent. It shall be manufactured to meet all the requirements of Specification for Chemical Admixtures for Concrete, ASTM Designation C494 as a Type A and Type F admixture.

The admixture shall be delivered as a ready-to-use, liquid product and shall not contain added calcium chloride. It shall be used in strict accordance with manufacturer's recommendations.

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This product or its use may be covered by US Patent Nos. 7,462,236; 8,187,376; 8,317,918; 9,546,110; 9,624,130; 10,266,449

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