

# DARACEM<sup>®</sup> 55 Data Sheet

Mid-range water-reducing admixture ASTM C494 Type A and F

## Product Description

Daracem<sup>®</sup>55 is a mid-range water reducer specifically formulated to produce concretes with dramatically enhanced finishing characteristics and normal setting times. Effective through a wide addition rate range, Daracem 55 combines the benefits of normal and high-range water reducers allowing for the ultimate control of the concretes placing and finishing properties.

Daracem 55 is an aqueous solution of complex organic compounds, each of which contributes uniquely to the concretes final properties. It contains both patented dispersing and finishability agents that provide performance superior to conventional water-reducing products. Daracem 55 is also formulated with a catalyst which promotes more complete hydration of Portland cement to assure superior strength performance. It is manufactured under rigid controls which provide uniform, predictable performance. Daracem 55 contains no calcium chloride. Daracem 55 is supplied as a dark brown, low viscosity liquid, weighing approximately 10.7 lbs/gal (1.28 kg/L).

## Uses

Daracem<sup>®</sup>55 produces a concrete with lower water content, improved placement properties and enhanced finishability. It yields a less permeable and more durable concrete. Daracem 55 is used in ready-mix, job site and concrete paving plants for normal and lightweight concrete, in block and precast. It imparts a “slickness” to the surface of the concrete making it most appropriate for concrete flatwork as well as slip form work. Daracem 55 is also particularly effective in lean or fly ash and slag compensated mixes.

## Advantages

Daracem 55 offers significant advantages over conventional water reducers. Field work has consistently demonstrated:

### Ultimate workability and finishability

The exceptional water-reducing capabilities allow for concrete production at higher slumps with better water retention and internal cohesiveness, providing a less “sticky” concrete with improved placement properties. Formulated with proven finishing enhancing components, Daracem 55 controls bleeding while bringing the mortar to the surface. Finishers have stated that the concrete has improved trowelability. The influence of Daracem 55 on the finishability of lean mixes has been particularly noticeable. Floating and troweling, by machine or by hand, easily imparts a smooth, close tolerance surface with less machine time and labor

### Neutral setting times

Formulated with a set control agent, Daracem 55 provides normal setting characteristics throughout its addition rate range. This allows for increased water reduction and increased slump without significantly extended setting times. It also allows the flexibility to vary addition based on specific job and weather requirements.

## Superior strength performance

The water reduction properties, up to 12%, and dispersion characteristics allow the production of lower water to cement ratio concretes and more complete hydration. The combined effect is increased compressive and flexural strengths at all ages.

## Addition Rates

The addition rate range of Daracem 55 is 3 to 15 fl oz/100 lbs (190 to 980 mL/100 kg) of cement. Typically excellent results are achieved between 5 to 7 fl oz/100 lbs (325 to 460 mL/100 kg) of cement. Optimum addition depends on the other concrete mixture components, job conditions and desired performance characteristics.

## Compatibility with Other Admixtures and Batch Sequencing

Daracem 55 is compatible with most GCP admixtures as long as they are added separately to the concrete mix. In general, it is recommended that Daracem 55 be added to the concrete mix near the beginning of the batch sequence but after the cement and water are combined 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<sup>®</sup> or Darex<sup>®</sup> product lines) is recommended to provide suitable air void parameters for freeze-thaw resistance.

## Packaging & Handling

Daracem 55 is available in bulk, delivered in metered tank trucks and drums.

Daracem 55 contains no flammable ingredients. It will freeze at approximately 15°F (-9°C) but will return to full strength after thawing and thorough mechanical agitation.

## Dispensing Equipment

A complete line of accurate, automatic dispensing equipment is available. Daracem 55 may be added to the concrete mix on the sand or in the batch water.

## Product Advantages

- Ultimate workability and finishability
- Neutral setting times
- Superior strength performance

## Specifications

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

The water-reducing admixture shall be a mid-range water-reducing admixture such as Daracem 55 as manufactured by GCP Applied Technologies, or its equivalent. The admixture shall not contain calcium chloride. It meets the requirements of *Specification for Chemical Admixtures for Concrete* ASTM Designation C494 as a Type A and Type F admixture. Certification of compliance shall be made available on request. The admixture shall be considered part of the total mixing water.

The admixture shall be delivered as a ready-to-use liquid product and shall require no mixing at the batching plant or job site.

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