

# DARACEM<sup>®</sup> S21C

Superplasticiser for the production of high workability concrete

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## Product Description

DARACEM<sup>®</sup>S21C is a ready-to-use aqueous solution of a modified naphthalene sulfonate. DARACEM<sup>®</sup>S21C is a high range water reducer, commonly referred to as a superplasticiser. It is a low viscosity liquid, which has been formulated by the manufacturer for use as received. DARACEM<sup>®</sup>S21C contains no added chloride. DARACEM<sup>®</sup>S21C is formulated to comply with the chemical admixtures specifications for concrete: ASTM C494 Type F. One litre of DARACEM<sup>®</sup>S21C weighs approximately 1.20kg  $\pm$  0.02kg.

## Product Advantages

- DARACEM<sup>®</sup> S21C, in prestress/precast work, can be used to substantially reduce or eliminate the high energy requirements of external heat for accelerated curing.
- It is excellent for early strength development of slag cement concrete.
- It is compatible with a wide range of cements.
- It can produce high slump flowable concrete at no loss in strengths.
- It can produce low water-cement ratio concrete and therefore, high strengths.
- It aids in rapid discharge of concrete from truck mixers thereby reducing on-the-job time and improving mixer utilisation.

## Dispersion

DARACEM<sup>®</sup>S21C is a superior dispersing admixture having a marked capacity to disperse the cement agglomerates normally found in a cement-water suspension. The capability of DARACEM<sup>®</sup>S21C, in this respect, exceeds that of normal water-reducing admixtures

## Application

DARACEM<sup>®</sup>S21C produces concrete with extremely workable characteristics referred to as high slump, flowing concrete. DARACEM<sup>®</sup>S21C also allows concrete to be produced with very low watercement ratios at desirable slump.

DARACEM<sup>®</sup>S21C is ideal for use in prestress, precast, readymix concrete, bridge deck or any concrete where it is desired to keep the water-cement ratio to a minimum and still achieve the degree of workability necessary to provide easy placement and consolidation.

## Compatibility with Other Admixtures

Most water reducers or water-reducing retarders are compatible with DARACEM®S21C as long as they are separately added to the concrete. Pretesting of the concrete should be performed to optimise dosages and addition times of these admixtures. The admixtures should not be in contact with each other before they enter the concrete. DARACEM®S21C is recommended to be used in ambient temperatures above 15 °C. DARACEM®S21C should not be used in concrete subject to more than 70 °C heat curing. DARACEM®S21C is not to be used with polycarboxylate-based admixtures such as ADVA®.

DARACEM®S21C will also fluidise concrete, making it ideal for tremie concreting or other applications where high slumps are desired. DARACEM®S21C can help to optimise the total concrete costs, and enhance the production efficiency, especially for precast segments.

## Dispensing Equipment

Please contact your local GCP representative for further information regarding the dispensing equipment for this product.

## Addition Rates

Addition rates of DARACEM®S21C can vary with type of application, but will normally range from 400 to 1,500mL / 100kg of cementitious material. In most instances the addition of 700 to 1,200mL / 100kg of cementitious material will be sufficient. When combined with Grace Daratard® or WRDA®, DARACEM®S21C dosage rates can be effective from 100 to 1,000mL / 100kg of cementitious material, when added separately to the mix. At a given water- cement ratio, the slump required for placement can be controlled by varying the addition rate. Should job site conditions required using more than recommended addition rates, please consult your GCP representative.

## Packaging

DARACEM®S21C is available in bulk and in 205L drums. DARACEM®S21C contains no flammable ingredients. It will begin to freeze at approximately 0 °C, but will return to full strength after thawing and agitation. In storage and for proper dispensing, DARACEM®S21C should be maintained at temperatures above 0 °C.

## Health and Safety

See DARACEM®S21C Material Safety Data Sheet or consult GCP Applied Technologies.

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