

# Daracem<sup>®</sup> S21

Superplasticiser for the production of high workability concrete

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## Product Description

Daracem<sup>®</sup> S21 is a ready-to-use aqueous solution of a modified naphthalene sulfonate. Daracem S21 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 S21 contains no added chloride. Daracem S21 is formulated to comply with the chemical admixtures specifications for concrete: ASTM C494 Type F and the National Technical Regulation QCVN 16-3:2011/BXD. One litre of Daracem S21 weighs approximately 1.21kg ± 0.02kg.

## Dispersion

Daracem S21 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 S21, in this respect, exceeds that of normal water-reducing admixtures.

## Product Advantages

- Daracem S21, 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.

## Application

Daracem S21 produces concrete with extremely workable characteristics referred to as high slump, flowing concrete. Daracem S21 also allows concrete to be produced with very low water-cement ratios at low or normal slumps.

Daracem S21 is ideal for use in prestress, precast, 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.

Daracem S21 will also fluidise concrete, making it ideal for tremie concreting or other applications where high slumps are desired.

## Compatibility with Other Admixtures

Most water reducers or water-reducing retarders are compatible with Daracem S21 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 S21 is recommended to be used in ambient temperatures above 15 °C. Daracem S21 should not be used in concrete subject to more than 70 °C heat curing. Daracem S21 is not to be used with polycarboxylate-based admixtures such as ADVA®.



## Addition Rates

Addition rates of Daracem S21 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 1,000mL / 100kg of cementitious material will be sufficient. When combined with Grace Daratard® or WRDA®, Daracem S21 dosage rates can be effective from 100 to 400mL / 100kg of cementitious material, when added separately to the mix. At a given watercement 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.

## Dispensing Equipment

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

Packaging Daracem S21 is available in bulk and in 205L drums. Daracem S21 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 S21 should be maintained at temperatures above 0 °C.

## Health and Safety

See Daracem S21 Material Safety Data Sheet or consult GCP Applied Technologies.

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