

# DARACEM<sup>®</sup> SP4

Concrete Superplasticiser

## Product Description

DARACEM<sup>®</sup>SP4 is a high performance superplasticiser designed specially to impart high workability to concrete containing silica fume, while possessing excellent slump retention properties. It can also be used in normal concrete mix designs where high workability is required for long periods, to aid placement, such as piling concrete, congested areas of reinforcement, etc.

DARACEM SP4 is based on selected raw materials and is manufactured under controlled conditions to give a consistent product. It is formulated from specially designed polymeric sulphonate materials and naturally derived products.

Depending on the addition rate, DARACEM SP4 meets the requirements of Type A, D and G materials of ASTM designation C-494 and complies with BS EN 934-2.

## Typical Properties

### DARACEM 19CFU

Appearance	Dark Brown Liquid
Specific Gravity	1.16 at 20°C
Air Entrainment	Air content of concrete will normally be increased by 1% - 2%
Chloride Content	Nil

## Advantages

- Effective over a wide range of cement contents and w/c ratios.
- Aids concrete cohesion.
- Imparts excellent slump retention over prolonged periods of time.
- Allows greater time for placement and compaction, especially in concrete containing silica fume.
- Can be used to achieve large water reductions in concrete, to obtain high early and ultimate compressive strength gains as required in precast / pre-stressed concretes.

## Method Of Use

DARACEM SP4 is supplied ready for use. It should be added to the concrete mixes during the mixing process at the same time as the water. It should not be added directly to the cement.

For mixes containing silica fume, DARACEM SP4 should be incorporated into the mix after the addition of the silica fume, at the same time or just after the mix water. DARACEM SP4 should not be added to slurrified silica fume before addition to the mix.

## Compatibility with Cements

DARACEM SP4 can be used with all types of Portland, Pozzolanic and Blast Furnace cements. It can also be used in mix designs containing fly ash, and/or silica fume.

## Compatibility with other Admixtures

DARACEM SP4 should not be premixed under any circumstances with other admixtures. While some admixtures can be usefully combined within the same mix, the performance of this product may well be affected by the presence of other chemicals. We recommend that GCP be contacted for advice in all such circumstances.

## Addition Rates

### Range:

0.4% – 3.0% volume by weight of cement The performance of DARACEM SP4 is best assessed after preliminary trials in the laboratory or on site, using the actual mix constituents under consideration, to determine the optimum dosage and effect on concrete properties such as compressive strength, setting times, workability retention, etc. when these are of consequence

As a guide to these trials, an addition rate of 400ml – 3000ml DARACEM SP4 per 100kg cement is recommended.

For silica fume concrete mixes, addition rates greater than 1500ml per 100kg cement are recommended, but lower dosage levels may be feasible following trial mixes and depending upon w/c ratios.

## Effects of Overdosing

Overdosing of DARACEM SP4 will generally produce an increase in workability and a slight increase in air entrainment, which will be accompanied by a delay in the concrete setting time.

However, provided the overdosed concrete is cured properly, the ultimate strength will generally be higher than normal concrete.

The effects of overdosing with respect to set retardation are increased when sulphate resisting cement (Type V) is used in the mix design.

## Dispensing

It is preferable that liquid admixtures for concrete be introduced into a mixer by means of automatic dispensing equipment details, which are available upon request.

## Health and Safety

For further information see the DARACEM SP4 SDS (Safety Data Sheet) or consult GCP Applied Technologies.

## Packaging

DARACEM SP4 is supplied in 210 litre, non-returnable containers. Alternatively, 1000 Litre IBCs or bulk deliveries can be arranged.

## Storage

DARACEM SP4 should be stored in original containers or suitable closed tanks, preferably out of direct sunlight and protected from extremes of temperature.

### Storage Life in Manufacturer's Drums:

12 months from date of manufacture

### Storage Life in Bulk Storage:

12 months from date of delivery

## Technical Service

The Technical Service Department of GCP Applied Technologies is available to assist you in the correct and best use of our products. These resources and advice are at your disposal entirely without obligation.

gcpat.ae | United Arab Emirates customer service: +971 4 5139560

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