

# DARACEM<sup>®</sup> 16

Concrete Superplasticiser

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## Product Description

DARACEM<sup>®</sup>16 is a high performance liquid concrete superplasticiser that has been developed to impart extreme workability to concrete mixes so that large or difficult pours can be made, whilst maintaining excellent slump retention properties, especially under hot climatical conditions. The product has minimal set retardation characteristics.

### DARACEM 16

can also be utilized to effect large water reductions thus achieving high performance in both plastic and hardened states

DARACEM 16 is an extremely powerful deflocculating agent and performs by dispersing cement into its primary particles, dramatically increasing flow characteristics of the cement paste.

### Main applicational areas are:

- High quality concrete for durable structures
- Bridge deck slabs
- Silica fume concrete
- Pozzolan and blast furnace slag concretes
- Reinforced and pre-stressed precast elements
- Piling and in-situ structures

DARACEM 16 meets the requirements of ASTM C494 Type D

and G, BS EN 934-2 and ASTM C1017.

### Advantages

- High compressive strength concrete especially at early ages
- High workability concrete mix with DARACEM<sup>®</sup> 16 will have the same or higher compressive strength compared to plain concrete of similar w/c ratio.
- Plastic concrete exhibits high cohesion, fluidity and flowability.
- Excellent slump retention properties even at high ambient temperatures, whilst exhibiting minimal set retardation
- Addition of DARACEM<sup>®</sup> 16 to plain concrete allows a water reduction of up to 30%.
- Low w/c ratios lead to excellent durability of the concrete.
- Good surface finish, providing highly aesthetic concrete appearance

## Typical Properties

### DARACEM 16

Appearance	dark brown liquid
Specific Gravity	1.23 at 20 °C
Air Entrainment	0.5%
Chloride Content	Nil

## Method of Use

DARACEM 16 is supplied ready for use, and should be added to concrete mixes either during the mixing cycle or at the same time as the water, or alternatively it should be added in its supplied form to a normal concrete mix a few minutes before the pour is made.

In the latter case a mixing cycle of at least 2 minutes should be provided to ensure complete dispersion. Compatibility with Cements DARACEM 16 is compatible with all Portland, Pozzolanic and Blast furnace cements. It is also

### compatible with concrete

containing fly ash and or silica fume

## Compatibility with other Admixtures

DARACEM 16 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 and we recommend that GCP Applied Technologies be contacted for advice in all such circumstances.

## Addition Rates

**Range: 0.60%–2.0% volume by weight of cement**

The optimum dosage is assessed after preliminary trials depending upon the actual mix constituents and specifications required. Addition rates outside of the recommended dosage range may be used for special concrete applications. In such circumstances it is important to conduct preliminary trials on the actual mix constituents to assess the effect on the properties of the concrete at the dosage level specified

## Effects of Overdosing

Serious overdosing of DARACEM®16 will generally produce a concrete mix of even greater workability. Set retardation and a slight increase in air entrainment may be noticed. In SRC mixes and cooler weather, set retardation will be further increased. If intentional or accidental increases above the recommended addition rates are encountered, care must be taken to allow for the effect on the stripping time of formwork. In such cases, however, provided the concrete is properly cured, the ultimate strength will generally be higher than for normal concrete.

## Dispensing

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

## Health and Safety

For further information see the DARACEM 16 SDS (Safety Data Sheet) or consult GCP.

## Packaging

DARACEM 16 is supplied in 210 litre, non-returnable containers. Alternatively, 1000 litre IBCs and bulk deliveries can be arranged.

## Storage

DARACEM 16 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 the date of manufacture

### Storage Life in Bulk Storage:

12 months from the date of delivery

## Technical Service

The Technical Service Department of GCP 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. Please contact:

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