

# DARACEM<sup>®</sup> SP1

Concrete Superplasticiser

## Product Description

DARACEM<sup>®</sup> SP1 is a liquid superplasticiser or high-range water reducing agent for concrete and cement based grouts. It is particularly useful for imparting extreme workability to concrete mixtures so that large or difficult pours can be made with little or no vibration. Alternatively, it can be utilised to effect large water reductions in concrete of normal workability to achieve higher early and subsequent strengths. Low shrinkage grouts can be obtained also by effecting water reductions without decreasing flow characteristics.

DARACEM<sup>®</sup> SP1 is an extremely powerful deflocculating agent and operates by dispersing cement into its primary particles which dramatically increases the flow characteristics of the cement paste. DARACEM<sup>®</sup> SP1 is formulated from carefully selected raw materials and is manufactured under controlled conditions to give a consistent product.

## Advantages

- Substantial increases in workability can be obtained by a direct addition of DARACEM<sup>®</sup> SP1 to a mixture having a slump in the range 50 mm–100 mm. The magnitude of this increase is often such that the concrete becomes self-consolidating and little to no vibration is required to achieve a dense and void-free concrete.
- High strength mixtures can be produced at normal workabilities and cement contents, but at reduced water/ cement ratios. The resultant concrete is of a dense and impermeable nature.
- At the recommended dosage, the effect on the setting time is slight and will not normally affect stripping times of formwork.
- Concretes containing DARACEM<sup>®</sup> SP1 have been extensively evaluated and have shown no disadvantage in terms of durability or mechanical performance.
- DARACEM<sup>®</sup> SP1 is particularly valuable in cement-based grouts where a reduction in the water/cement ratio in the region of 20%–25% can be obtained, resulting in higher strengths and reduced bleeding.

## Typical Properties

### DARACEM<sup>®</sup> 19CFU

Appearance	brown liquid
Alkali Content	0.5% as Na <sub>2</sub> O
Sulphate Content	0.20% as SO <sub>3</sub>
Air Entrainment	Nil
Chloride Content	Nil
Freezing Point	-5°

## Addition Rates

Range

500 ml–1500 ml per 100 kg cement

The performance of DARACEM® SP1 is best assessed after preliminary tests on site using the actual concrete under consideration to determine the optimum dosage and effect on properties such as ultimate compressive strength and early strength gain. As a guide to these trials, we recommend the above addition rates as a starting point. DARACEM® SP1 is supplied ready for use. It should be added to concrete mixtures either during the mixing process at the same time as the water or the aggregates or alternatively it should be added in its supplied form to a normal concrete mixture a few minutes before the pour is made. In the latter case extending the mixing for at least 2 minutes is recommended. When using flowing concrete, temporary increases in formwork pressure will occur and this should be taken into account at the Serious overdosing of DARACEM® SP1 will generally produce a concrete mixture of even greater workability and set retardation, but no increase in air entrainment. In cold weather, this retardation will be further increased. If intentional or accidental increases above the recommended addition rate are employed, 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 normal concrete. design stage

## Compatibility

### With Cements:

DARACEM® SP1 can be used with all types of Ordinary Portland Cement. For use with special cements we recommend that you consult GCP Applied Technologies.'

### With other Admixtures:

DARACEM® SP1 should not be pre-mixed with other admixtures. The performance of the material may be affected by the presence of other chemicals and we recommend that you consult GCP in such circumstances.

## Packaging

DARACEM® SP1 is supplied in 205 litre, non-returnable containers. Alternatively, bulk deliveries can be arranged.

## Storage

DARACEM® SP1 should be stored above 0°C and protected from frost. If the product does freeze, it should be carefully thawed before mixing.

### Storage life in manufacturer's drums:

12 months from the date of manufacture.

### Storage life bulk storage:

12 months from the date of delivery

## Health and Safety

See DARACEM® SP1 Safety Data Sheet or consult GCP.

## Technical Service

The GCP Technical Service department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

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