

# Matcrete PC™ G

## Concrete Super Plasticizer

### Description

Matcrete PC-G Superplasticiser is a high range water-reducing admixture for high strength concrete

MATCRETE PC-G superplasticiser is based on a synthetic carboxylated polymer and is manufactured under closely controlled conditions to give a consistent product. It contains no added chloride

MATCRETE PC-G superplasticiser is formulated to comply with Standard Specification for Chemical Admixtures for Concrete, ASTM C 494, Type G material and BS 5075, Part III

### Dispersion

MATCRETE PC-G Superplasticiser is a superior dispersing admixture having a marked capacity to disperse the cement agglomerates normally found in a cement-water suspension. This capability exceeds that of normal high-range water-reducing admixtures, resulting in lower dosages and better control

### Uses

MATCRETE PC-G Superplasticiser has been developed to allow concrete to attain particularly high performance in both the plastic and the hardened states. It is particularly useful for imparting exceptional workability characteristics to concrete mixes so that large or difficult pours can be made, whilst maintaining

excellent slump retention properties especially in **hot climatic conditions**.

It also allows flowable concrete to be produced with very low water/cement ratios to achieve higher strengths.

### Advantages

- MATCRETE PC-G Superplasticiser is highly efficient, producing high slump concrete at low dosage with no loss in strength.
- MATCRETE PC-G is added to concrete mix water for rapid batching.
- Plastic concrete exhibits high cohesion, fluidity and flowability. Concrete with MATCRETE PC-G will maintain slump properties in excess of two hours, even at high ambient temperatures.
- Addition of MATCRETE PC-G to plain concrete will allow water reduction of up to 30%.
- Low water/cement ratio leads to excellent durability of concrete
- Good surface finish, providing highly aesthetic concrete appearance.

### Typical Properties

#### Appearance:

Amber liquid

#### Specific Gravity:

1.09 at 20°C.

#### Air Entrainment:

1.0% approx.

#### Chloride Content:

Nil

**Storage life in manufacturer's drums:** 12 months from date of manufacture.

**Storage Life Bulk Storage:** 12 months from date of delivery.

### Compatibility

**With cements:** MATCRETE PC-G can be used with all types of Portland Cements, including Sulphate Resisting Cements.

#### With other admixtures:

MATCRETE PC-G is fully compatible with other products normally used in concrete – including air entraining agents, retarders or accelerators, silica fume admixtures, Eclipse™ Shrinkage Reducing Admixture, Grace Cemfiber® and DCI® S Corrosion Inhibitor – without impeding their performance. MATCRETE PC-G should not be used in combination with NSFC and MSFC superplasticisers. Most Type A water reducers or Type D water-reducing retarders are compatible with MATCRETE PC-G superplasticiser as long as they are separately added to the concrete. Caution should be exercised when using MATCRETE PC-G superplasticiser together with a retarder, as excessive retardation can occur if the admixture dosages are too high. Pre-testing of the concrete should be performed to optimise dosages and addition times of these admixtures. The admixtures should not contact each other before they enter the concrete.

### Method of Use

MATCRETE PC-G superplasticiser is supplied ready for use. When producing high workability concrete it can be added in its supplied form to the batching water, prior to the addition of the cementitious component.

After the addition of cement, a further mixing cycle of at least 2 minutes is recommended to enable MATCRETE PC-G to efficiently disperse the mix components.

### Addition Rates

**Range: 400ml - 1200ml per 100kg cement. (0.4% - 1.2% [v/w] by weight of cement).**

Addition rates of MATCRETE PC-G superplasticizer can vary with the type of application. As with most products of this type, the magnitude of the effect obtained with MATCRETE PC-G is governed by the quantity of product used and the specific nature of the concrete and its constituent materials.

It is necessary, therefore, to assess performance under site conditions using site materials to determine optimum dosage and effect on both plastic and hardened concrete properties, such as cohesiveness, workability retention, set characteristics, early rate of strength gain, ultimate compressive strength and shrinkage when these are of consequence. As a guide to these trials, an addition level of 0.8% - 1.2% MATCRETE PC-G volume / weight of cement is recommended.

### Effects of Overdosing

The effects of over-dosing MATCRETE PC-G are a function of the degree of over-dose.

When producing high workability concrete, over-dosing will increase the level of workability and may induce the onset of segregation.

Depending on the extent of the over-dose, an increase in the setting time will also occur, especially in low temperatures and/or when employing sulphate resisting cement or cement replacement materials.

### Dispensing

It is preferable that liquid admixtures for concrete should be introduced into a mixer by means of automatic dispensing equipment. Such equipment is available from Grace and details will be supplied on request.

### Health and Safety

See MATCRETE PC-G Material Safety Data Sheet, or consult Emirates Chemicals LLC.

### Packaging

MATCRETE PC-G is supplied in 210 litre free, non-returnable containers.

Alternatively, bulk deliveries can be arranged.

### Storage

MATCRETE PC-G superplasticiser contains no flammable ingredients.

It will begin to freeze at approximately 0°C (32°F), but will return to full strength after thawing and thorough agitation. In storage, and for proper dispensing, MATCRETE PC-G superplasticiser should be maintained at temperatures above 0°C (32°F).

### Technical Service

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