

# WRDA<sup>®</sup> P4

## Water Reducing Admixture

### Product Description

WRDA<sup>®</sup> P4 is a liquid concrete plasticiser/water reducer designed to cover several concrete applications under all seasonal conditions. The effect is achieved by its absorption on the surface of the cement particles within the concrete resulting in a powerful deflocculating action.

By virtue of its water reducing capability, WRDA<sup>®</sup> P4 can also be used to reduce the permeability of concrete. As a water reducer it can be used to either increase the compressive strength of the concrete or reduce the cement content thus improving mix economics.

WRDA<sup>®</sup> P4 is formulated from carefully selected raw materials and manufactured under controlled conditions to give a consistent product. WRDA<sup>®</sup> P4 conforms to EN 934 Part 2.

### Advantages

- When used for its water reducing effect, reductions in water content in the region of 10% can be achieved normally with consequent increases in compressive strength, impermeability and durability
- Facilitates cement content reductions
- Imparts excellent consistence retention
- Effective water reduction
- Dosage range consideration will exhibit limited and predictable retardation characteristics
- Compatible with ggbs and fly ash concretes
- Particular value in concreting operations subject to high seasonal ambient temperatures. It extends the time concrete can be placed and compacted
- Aids cohesion of concrete

### Typical Properties

WRDA P4	
Appearance	dark brown liquid
Specific Gravity (20 °C)	1.190
Alkali Content (eq.Na <sub>2</sub> O)	0.90%
Chloride Content	Nil
Air Entrainment	< 0.5 %
Freezing Point	0 °C

## Method Of Use

WRDA® P4 is supplied ready for use. It is a versatile, performance product that can be used in a wide variety of applications. When producing ready mixed concrete it should be added in its supplied form with part of the batching water, after the addition of the cement. After the addition of admixture, a further mixing cycle of at least two minutes to allow the WRDA® P4 to efficiently disperse the mix constituents.

## Compatibility with Cements

WRDA® P4 can be used with most types of Portland cements. It is also effective in concrete containing fly ash or ground granulated blastfurnace slag.

## Compatibility with Other Admixtures

WRDA® P4 is fully compatible with all GCP admixtures normally used in concrete production. Each admixture must be added separately. Individually added, each will deliver exactly the results desired. However, the performance of the material may be affected by the presence of other chemicals and we would recommend that GCP be consulted in such circumstances.

## Addition Rates

Range	300 ml -800 ml per 100 kg cement or combination.
	0.30% -0.80% (v/w) by wt. of cement or combination.
As a guide to trials an addition rate of 0.30 - 0.50% volume by weight of cement is suggested.	
For advice and assistance with trials we recommend that you consult GCP Applied Technologies.	

As with most products of this type, the magnitude of the effect obtained with WRDA® P4 is governed by the quantity of product used, w/c ratio, and specific nature of the concrete and constituent materials. It is necessary therefore to assess performance under site conditions using actual materials to determine optimum dosage and effect on plastic/ hardened concrete properties, such as cohesiveness, consistence retention, set characteristics, early rate of strength gain, ultimate compressive strength and shrinkage when these are of consequence.

## Effects of Overdosing

As dosage is increased throughout the recommended range, concrete consistence and retardation of set will also increase. These effects will be more pronounced when using cement replacements and in cold weather. In mixes containing fly ash or ggbs, or indeed where concrete setting times are crucial such as flooring applications, a reduced dosage rate may be appropriate.

Accidental overdosing outside the stated recommended dosage range will be accompanied by an additional retardation of setting time, particularly in cold weather. Providing overdosed concrete is properly cured, the ultimate strength will generally be higher than that of a normal concrete.

Planned overdosing outside the recommended range should be further discussed with the Technical Service department of GCP.

Any situation where an overdose is suspected, careful inspection of the concrete in its plastic state should be conducted. Particular attention to consistency and cohesiveness prior to a decision on the suitability of the concrete for the particular application in question.

## Dispensing

It is preferable that the WRDA®P4 should be introduced into the mixer by automatic dispensing equipment. Equipment or advice on dispensing can be obtained from GCP Applied Technologies.

## Health and Safety

For further information on Health and Safety matters regarding this product we recommend that you consult the relevant Safety Data Sheet from GCP Applied Technologies. In line with general chemical handling precautions avoid contact with skin or eyes and protective gloves/goggles should be worn.

## Packaging and Storage

WRDA® P4 is supplied in both 15 or 205 non returnable drums and 1,000 litre totes. Alternatively, bulk deliveries can be arranged.

WRDA®P4 should be stored away from extremes of temperature and then protected from frost. If the product does become frozen, it should be carefully mixed after thawing out to restore it to its normal state. The product should be kept out of direct sunlight in shaded storage at all times.

### 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

Our Technical Service department of GCP Applied Technologies is available to assist you in the correct use of our performance chemicals.

gcpat.uk | United Kingdom customer service: +44 (0) 1925 855330 Fax: 01925 855350

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