

# DARASET<sup>®</sup> 590C

Non-Corrosive, Non-Chloride Hardening Accelerating Admixture

## Product Description

DARASET<sup>®</sup> 590 is a non-corrosive, non-chloride admixture for concrete. It accelerates cement hydration, resulting in shortened setting times and significantly increased early age compressive strengths.

DARASET<sup>®</sup> 590 does not contain calcium chloride and is completely non-corrosive to reinforcing steel, metal decks, and to all metal components of admixture storage and dispensing systems.

DARASET<sup>®</sup> 590 conforms to EN 934-2 and manufactured under controlled conditions to give a consistent product.

## Advantages

- Formulated to reduce concrete setting times and increase early age strength in very cold conditions
- May be used to reduce the time for which the concrete must be protected against freezing in ambient temperatures as low as -7 °C
- May be used to speed finishing operations and/or form removal, leading to savings in concrete construction costs
- Provides set acceleration and early strength development similar to that provided by calcium chloride, but without the potential corrosive effects
- Can be used where the potential corrosion of embedded or stressed steel must be avoided
- Can be used in concrete that is to be placed on steel clad or zinc coated steel decks where corrosion must be avoided

## Typical Properties

DARASET <sup>®</sup> 590	
Appearance	Pale straw liquid
Specific Gravity (20 °C)	1.370
Alkali Content (eq.Na <sub>2</sub> O)	3.00
Chloride Content	Nil
Air Entrainment	Nil
Freezing Point	-20°C

## Method Of Use

DARASET<sup>®</sup> 590 is supplied ready for use.

Since DARASET® 590 may be used at high dosages, the concrete producer should account for the effective water contained in the DARASET® 590. One litre of DARASET® 590 weighs approximately 1.40 kg and added to a concrete mixture will contribute 0.72 kg of water to that mixture.

## Compatibility with Cements

DARASET® 590 accelerates the chemical reaction between Portland Cement and water. It speeds up the formation of binder gel that bonds concrete aggregates together. Accelerated gel formation, shortens the setting time of concrete, compensates for the set-slowing effects of cold weather and contributes to the development of higher strength. Gel formation promotes heat generation within the mixture – helping to protect the concrete from freezing during the critical first hour after placement. In common with most concrete accelerators, the inclusion of DARASET® 590 may reduce the ultimate compressive strength of concrete. The extent of strength loss should be established by conducting concrete trial mixes.

For use with special cements we recommend you to contact GCP Applied Technologies.

## Compatibility with Other Admixtures

DARASET® 590 is fully compatible with 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 Applied Technologies be consulted in such circumstances.

## Addition Rates

Range	500 ml – 1500 ml per 100 kg cement
	0.50% – 1.50% (v/w) by wt. of cement
As a guide to trials an addition rate of 0.80% – 1.00% volume by weight of cement is suggested.	
For advice and assistance with trials we recommend that you consult GCP Applied Technologies.	

## Effects of Overdosing

The effect of overdosing DARASET®590 is a function of the degree of overdose.

Overdosing DARASET®590 will produce an increased rate of setting and a reduction in ultimate concrete strength. 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

DARASET®590 may be introduced on the sand, in the water, or at the end of the batch of cycles. Similar to all concrete admixtures, DARASET®590 should not come in contact with other admixtures prior to entering the concrete. It is preferable that DARASET®590 should be introduced into the mixer by means of automatic dispensing equipment. Equipment or advice on dispensing can be obtained from GCP Applied Technologies.

## Health and Safety

or 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

DARASET®590 is supplied in both 15 or 205 non returnable drums and 1,000 litre totes. Alternatively, bulk deliveries can be arranged. DARASET®590 should be stored away from extremes of temperature then protected from frost and should be kept out of direct sunlight in shaded storage at all times. If the product does freeze, it should be carefully thawed before mixing.

### 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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