Conplast SP431*

constructive solutions

Water reducing admixture and retarder

Uses

- Allow significant water reduction
- Improve cohesion and workability of concrete
- Increase in concrete quality durability
- Workability retention at high temperatures

Advantages

- Improved concrete quality – increased workability and cohesion, with a reduced water cement ratio, help produce a dense, durable and low permeability concrete.
- Workability – obviates the need to retemper on site where placing delays or high ambient temperatures would normally result in excessive slump loss.
- Workability loss in high workability concrete is slower than normally found with superplasticizers.
- Increased cohesion – reduces the risk of segregation and bleeding and assists with pumping.
- Economical – competitively priced and can eliminate the need for two types of admixture, reducing distribution and dispenser costs. At medium to high doses it provides significant water reduction and increase in workability times.
- Suitable for use with all normal cement replacement materials, including PFA, GGBFS and microsilica.

Description

Conplast SP431 is a water reducing and retarding admixture based on naphthalene and other organic polymers. It is supplied as a brown solution which instantly disperses in water.

Technical Support

Fosroc provides a technical advisory service for on-site assistance and advice on admixture selection, evaluation guidance can be provided for admixtures and other products for use with fresh and hardened concrete trials and dispensing equipment. Technical data and other products for use with fresh and hardened concrete.

Typical Dosage

The optimum dosage of Conplast SP431 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use.

Where increased strengths through water reduction are required the normal dosage range is from 0.30 to 0.60 litres / 100 kg of cementitous material, including PFA, GBFS and microsilica.

Dosages at the higher end of the ranges recommended will give significant retardation and may only be suitable for use in warmer climates.

Use at Other Dosage

Dosages outside the typical ranges quoted above may be used it necessary and suitable to meet particular mix requirements, provided that adequate supervision is available. Compliance with requirements must be assessed through trial mixes. Contact the Fosroc Technical Service Department for advice in these cases.

Effects of overdosing

An overdose of double the intended amount of Conplast SP431 will result in a significant increase in retardation and minimal increase in air entrainment, as compared to that normally obtained at the intended dosage.

This effect is found with most water reducing admixtures, although the degree may vary. Provided that adequate curing is maintained, the ultimate strength of the concrete will not be impaired by increased retardation and will generally be increased. The effects of overdosing will be further increased if sulphate resisting cement or cement replacement materials are used.

An overdose will increase core workability and increased initial workability will tend to extend the working life of the concrete, which will delay finishing and stiffening times to some extent.

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Properties	
Appearance	Brown liquid
Specific Gravity	Typically 1.18 at 20^0C
Chloride content	Nil to BS5075
Air entrainment	Typically less than 2% additional air is entrained at normal dosages

Instruction for Use
Mix Design

Where the primary intention is to improve strengths, initial trials should be made with normal concrete mix designs. The addition of the admixture will allow the removal of water from the mix whilst maintaining workability. After initial trials, minor modifications to the overall mix design may be made to optimise performance.

Where the primary intention is to provide high workability concrete, the mix design should be suitable for use as a pump mix. Advice on mix design for flowing concrete is available from Fosroc.

Compatibility

Conplast SP431 is compatible with other Fosroc admixtures in the same concrete mix. All admixtures should be added to the concrete separately and must not be mixed together prior to addition. The resultant properties of concrete containing more than one admixture should be assessed by the trial mix to ensure that effects such as unwanted retardations do not occur.

Conplast SP431 is suitable for use with all types of Portland cements and cement replacement materials such as PFA, GGBFS, SRC and silica fume.

The use of a combination of admixtures in the same concrete mix and or cement replacements may alter the setting time. Trials should always be conducted to determine such setting times.

Dispensing

The correct quantity of Conplast SP431 should be measured by means of a recommended dispenser. The admixture should then be added to the concrete with the mixing water to obtain the best results. Contact Fosroc for advice regarding suitable equipment and its installation.

Estimating - packaging

Conplast SP431 is available in 210 litre drum, 1000 litre tote tank or bulk (tanker) supply.

Storage

Conplast SP431 has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C.

Precautions

Health and safety

Conplast SP431 does not fall into the hazard classifications of current regulations (see notes 1 and 2 below). However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting. For further information consult the Material Safety Data Sheet available for this product.

Fire

Conplast SP431is water based and non-flammable.

Cleaning and Disposal

Spillages of Conplast SP431 should be absorbed onto sand, earth or vermiculite and transferred to suitable containers.

* Denotes the trademark of Fosroc International Limited

† See separate datasheet

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