

Superplasticising admixture for blast furnace slag cements

Uses

- To produce pumpable concrete with replacement of cement (upto 70%) with blast furnace slag
- To produce high strength, high grade concrete M350 and above by substantial reduction in water resulting in low permeability and high early strength.
- To produce high workability concrete requiring little or no vibration during placing.

Advantages

- Improved workability - Easier , quicker placing and compaction.
- Increased strength - Provides high early strength for precast concrete if water reduction is taken advantage of.
- Improved quality - Denser, close textured concrete with reduced porosity and hence more durable.
- Higher cohesion - Risk of segregation and bleeding minimised; thus aids pumping of concrete
- Chloride free - Safe in prestressed concrete and with sulphate resisting cements and marine aggregates.

Standards

Conplast SP430(BS) complies with IS:9103:1979 and BS:5075 Part 3 and ASTM-C-494 Type 'G' as a high range water reducing admixture.

Description

Conplast SP430(BS) is based on Sulphonated Napthalene Polymers and is supplied as a brown liquid instantly dispersible in water.

Conplast SP430(BS) has been specially formulated to give high water reductions upto 25% without loss of workability or to produce high quality concrete of reduced permeability.

Properties

Specific gravity	1.20 to 1.22 at 30°C
Chloride content	Nil. as per IS:456 and BS:5075
Air entrainment	Approx. 1% additional air is entrained

Compatibility : Can be used with all types of cements except high alumina cement. Conplast SP430(BS) is compatible with other types of Fosroc admixtures when added separately to the mix. Site trials should be carried out to optimise dosages.

Workability : Can be used to produce flowing concrete that requires no compaction. Some minor adjustments may be required to produce high workable mix without segregation.

Cohesion : Cohesion is improved due to dispersion of cement particles thus minimising segregation and improving surface finish.

Compressive strength : Early strength is increased upto 40 to 50% if water reduction is taken advantage of. Generally, there is improvement in strength upto 20% depending upon W/C ratio and other mix parameters.

Durability : Reduction in W/C ratio enables increase in density and impermeability thus enhancing durability of concrete.

Application instructions

Dosage

The optimum dosage is best determined by site trials with the concrete mix which enables the effects of workability, strength gain or cement reduction to be measured. Site trials with Conplast SP430(BS) should always be compared with mix containing no admixture. As a guide, the rate of addition is generally in the range of 0.6 - 1.5 litres /100 kg cement.

Over dosing

An over dose of double the recommended amount of Conplast SP430(BS), will result in very high workability and some retardation of setting time will occur. However, the ultimate compressive strength will not be impaired.

Dispensing

The measured quantity of Conplast SP430(BS) should be added along with the gauging water. For best results, add Conplast SP430(BS) in the last phase after prewetting the mix with 80% of the total water required.

Mix design

Fosroc has an advisory service on Concrete Mix Design and can be contacted if assistance is required.

Conplast® SP430BS

Estimating

Packing

Conplast SP430(BS) is supplied in 5,20,50 and 200 litre drums.

Storage

Conplast SP430(BS) has a minimum shelf life of 12 months when stored under normal temperatures. It should be protected from extreme temperatures and preferably stored in shade.

Typical results

**M-30 mix, Sand Zone 2 (40%), Coarse aggregate - 20 - 5mm (60%)
Cement : L&T OPC**

Test	Cement content Kg/m ³	Dosage of Conplast SP430(BS) L/50 kg of cement	W/C ratio	Slump mm	Compressive strength in N/mm ²		
					1 day	7days	28 days
Control	375	Nil	0.57	55	10	26	40
Workability increased	375	0.5L	0.57	140	11	30	43
Strength increased	375	0.5L	0.46	55	16	40	48

Precautions

Health & Safety instructions

Conplast SP430(BS) is nontoxic. Any splashes on the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

Fire

Conplast SP430(BS) is non flammable.

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Important note :

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