

Superplasticising admixture

Uses

- To produce high workability concrete without loss of strength.
- To promote high early and ultimate strengths by taking advantage of water reduction whilst maintaining workability.
- To produce high quality concrete of improved durability and impermeability.

At higher dosages, advantages can be taken of the retardation of initial setting time of concrete especially in large pours.

Advantages

- Pumpability : Increased workability provides easier and quicker placing and optimum compaction. Aids concrete placement by pump.
- Increased strength : Provides higher strength without increase in cement content or reduction in workability. Ideal for precast concrete production.
- Improved quality and cohesion : Reduce rate of workability loss normally associated with superplasticiser. Reduces shrinkage cracking because of lower water cement ratio. Makes the concrete water impermeable.
- Bleeding and segregation minimised : Improves durability and impermeability of concrete.
- Chloride free : Safe in prestressed concrete production.

Standards compliance

Conplast SP337 complies to IS:9103 : 1999 as a water reducing admixture. It also complies with IS 2645 : 1975 and BS 5075 Part 3 and ASTM C494 Type F.

Description

Conplast SP337 is based on a blend of specially selected organic polymers. It is supplied as a dark brown liquid, instantly dispersible in water.

Conplast SP337 disperses the cement particles effectively in the concrete mix and hence exposes a larger surface area to the hydration process. This effect is used either to increase the strength or to produce high workability concrete or reduce cement content of concrete or to retard the setting time of concrete.

Technical support

Fosroc's advice can be sought on mix design aspects especially to produce high workability concrete without segregation. Fosroc provides advisory service for on-site assistance and guidance on evaluation of trials and usage.

Properties

Specific gravity	:1.20 at 27°C
Chloride content	:Nil to IS:456

Setting times : At higher dosage levels without water reduction, retards setting times 1 - 2 hours approximately.

Air entrainment :Approx. 1% additional air entrained

Compatibility : Can be used with all types of Portland and slag cement except High Alumina Cements.

Conplast SP337 is compatible with other Fosroc admixtures but it is recommended that admixtures if used in combination are added separately.

Workability : Conplast SP337 can be used to produce collapse slump concrete without reducing the water content. However, minor adjustments to mix design may be required to produce flowing concrete to prevent bleeding and segregation.

Compressive strength : Substantial reduction in the water content (10-20%) can result in high early compressive strength for a constant slump.

Permeability : Reduced water/cement ratio increases density and improves impermeability. Improved workability facilitates easy placing and good compaction.

Cohesion/segregation : The possibility of bleeding and segregation will be reduced because of increase in cohesion. A uniform close textured surface without sand runs or voids can be produced.

Pumpability : Conplast SP337 will aid pumping of concrete by providing lubrication to cement particles and reducing line friction.

Application instructions

The optimum dosage of Conplast SP337 should be determined by site trials with a specific concrete mix to facilitate measurement of effects of workability and strength gain.

As a guide, the rate of addition should be in the range of 500ml to 1.5 litres /100 kg cement for high workability concrete. Fosroc should be contacted for advice where higher dosage are to be used.

Dispensing: The correct quantity of Conplast SP337 should be used by means of a dispenser. The measured quantity of Conplast SP337 should be added along with the gauging water in the case of batching plants.

Alternatively, correct dosage should be used with about 20% of the total water in the last phase after the mix has been prewetted.

Overdosing : The overdose of double the recommended dosage can result in increased acceleration of setting time and additional air is entrained which may lead to slight loss in strength.

The ultimate strength of the concrete could be increased if advantage is taken of the increased workability by reducing water.

Conplast SP337

Curing

Normal curing methods such as water ponding / spray or wet hessian must be used. Where water curing is a problem, efficient curing can be achieved by using Concure WB spray applied curing membrane.

Estimating

Packaging

Conplast SP337 is supplied in 5,20 and 200 litre and 250kg containers.

Storage

Shelf life

Conplast SP337 has a shelf life of 12 months from the date of manufacture provided the temperature is within the range of 2°C to 40°C. If the temperature range is exceeded in any respect, advice should be sought from Fosroc. It is recommended that the drums be stored in shade.

Typical results

M400 Mix

Cement : L&T OPC : 485 kg/m², Sand 730 kg/m³; Cement aggregate : 998 kg/m²

Test	Dosage of Conplast SP337 L/50kg cement	W/C ratio	Slump (mm)	Compressive strength (N/mm ²)			Density kg/m ²
				3 Days	7 Days	28 Days	
1	Control	0.36	50	28.7	41.3	51.0	2430
2	Workability increased	0.4L	155	30.6	42.3	52.1	2422
3	Strength increased	0.4L	60	34.0	47.4	56.8	2435

Precautions

Health and Safety

Conplast SP337 is non-toxic, non-flammable and splashes to the skin should be washed with copious amounts of water. If contact with eyes occurs, wash well with water immediately and seek medical advice.

Additional information

The Fosroc range of associated products includes high strength cementitious, epoxy grout, polyester resin based mortar for rapid presetting of steel shims to level or for direct bedding of small base plates; Resin Anchoring systems for same day anchoring of bolts in drilled holes in concrete or rock. Also available a range of products for use in construction; viz., curing compounds, release agents, flooring systems, repair mortars, sealants and waterproofing materials.

Separate datasheets are available on these products.

Important note :

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products whether or not in accordance with any advice, specification, recommendation or information given by it.



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