



Conplast SP337

Superplasticising Admixture

Uses

Conplast SP337 is used to produce high workability concrete without loss of strength. Use to promote high early and ultimate strengths in precast concrete production by reducing water : cement ratio whilst maintaining workability.

Produce high quality concrete of improved durability and water tightness.

Advantages

- **Speeds construction:** Increased workability provides easier and quicker placing and compaction. Labour costs minimised.
- **Increases strength:** Strengths achieved without increase in cement content or reduction in workability. Advantage in precast concrete production.
- **Improves quality:** Lower water : cement ratio reduces shrinkage cracking potential. Denser close-textured concrete is obtained giving improved durability. Bleeding and segregation can be largely eliminated.
- **Chloride free:** Safe in prestressed concrete and with sulphate-resisting cements or marine aggregates.

Standards compliance

Conplast SP337 complies with BS 5075 part 3 and ASTM C494 type F as a high range water reducing admixture

Technical support

Fosroc provides a technical advisory service for on-site assistance and advice on admixture selection, evaluation trials and dispensing equipment. Technical data and

guidance can be provided for admixtures and other products for use with fresh and hardened concrete.

Description

Conplast SP337 is based on a blend of specially selected organic polymers and is supplied as a brown liquid which instantly disperses in water.

When added to the concrete mix Conplast SP337 causes the cement particles, which normally tend to agglomerate, to disperse and hence expose a larger surface area to the hydration processes. It may be used to produce high workability concrete or to increase strength by allowing substantial reductions in water content.

Properties

Chloride content: Nil to BS 5075

Specific gravity: 1.17 - 1.2 at 30°C.

Air entrainment: Less than 2% additional air is entrained.

Setting times: When used at normal dosage level retardation is approximately one to two hours. This reduces the rate of loss of workability normally associated with powerful plasticisers.

Compatibility: Conplast SP337 can be used with all types of Portland Cements.

Conplast SP337 is compatible with most Fosroc admixtures if added separately to the mix.

Cohesion/segregation: Improved dispersion of cement particles will increase cohesion despite the high liquid nature of collapsed slump concrete. The possibility of segregation or bleeding will be reduced and a uniform and close-textured surface without sand runs or voids can be produced.

Durability: Increased density and uniformity, produced by water reduced concrete, improves the durability and resistance to attack by aggressive agents.

OP Cement	350 kg/m ³
Zone 3 sand	670 kg/m ³
20-5mm gravel	1145 kg/m ³

Table 1 : Effect of Conplast SP337 on workability

Conplast SP337 dosage level litres/100kg of cement	w/c ratio	Slump BS 1881 mm	Flow table spread DIN 1048 (cms)	Compressive Strength (N/mm ²)			Density kg/m ³
				1 days	7 days	28 days	
Nil (control)	0.58	75	44	16.5	38.5	48.5	2380
1.00	0.58	collapsed	64	15.5	37.5	48.5	2390

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Table 2 : Effect of Conplast SP337 on compressive strength

Conplast SP337 dosage level litres/100kg cement	Total w/c ratio	Compacting factor	Water reduction %	Air content %	Compressive Strength (N/mm ²)			Density kg/m ³
					1 days	7 days	28 days	
					Nil (control)	0.63	0.90	
1.00	0.50	0.895	20	3.0	26.5	50.5	61.0	2390
% of control	-	-	-	-	(189%)	(149%)	(139%)	-

Permeability: Improved workability facilitates placing and compaction. Reduced water : cement ratio increases density and makes the concrete more waterproof.

Workability: Without reducing the water content the addition of Conplast SP337 provides a substantial increase in workability, which can be used to produce collapsed-slump concrete with a flow table (DIN 1048 test method) value of 51-62cm. Minor adjustments to the normal mix may be required to produce a flowing concrete to prevent bleeding and segregation. See Table 1 for typical mix results.

Compressive strength/density: Substantial reductions in the water/cement ratio can result in early compressive strength increases of up to 65% whilst maintaining the original workability. See Table 2 for typical mix results.

Application instructions

Dosage

The optimum dosage of Conplast SP337 should be determined by site trials with the particular concrete mix. Laboratory trials should be carried out to establish the mix design and to facilitate measurement of the effects of workability and strength gain.

As a guide, the rate of addition is generally in the range of:

0.60-1.00 litres per 100 kg cement	for high workability concrete (no water reduction)
1.40-2.00 litres per 100 kg cement	for high strength concrete (with water reduction)

Dispensing

The correct quantity of Conplast SP337 should be measured by means of a recommended dispenser. The company's technical department should be consulted regarding suitable equipment and its installation. The measured quantity of Conplast SP337 should be added directly to the mixer preferably at the same time as the mixing water.

OP Cement	310 kg/m ³
Zone 3 sand	670 kg/m ³
20-5mm gravel	1210 kg/m ³

Mix design

A 'pump' mix design is generally required to produce a high workability concrete without risk of bleeding, or segregation of aggregates. Advice is available from the company on mix design and should be sought if cement content is outside the range 250 to 400kg/m³ or if the temperature is above 30°C.

Curing

Normal curing methods such as water spray, wet hessian or a curing membrane of the Concure* type should be used.

Overdosing

An overdose of the recommended amount of Conplast SP337 can result in an increase in the level of retardation. The ultimate strength of the concrete will not be impaired and will generally be increased.

Estimating

Conplast SP337 is supplied in 20 and 210 litre drums, also in tanker loads.

Storage

Conplast SP337 should be protected from extremes of temperature. Should the material become frozen it must be completely thawed and thoroughly mixed before use. Conplast SP337 has a minimum shelf life of 12 months provided the temperature is kept within the range 2°C to 50°C. If this temperature is exceeded in any respect advice should be sought from the supplier.

Precautions

Health and safety

Conplast SP337 is non-toxic. Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.



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Fire

Conplast SP337 is non-flammable

Additional information

Conplast SP337 was formerly known as Conplast 337.

Technical data can be provided on a wide range of admixtures, and concreting aids including accelerators, retarders, waterproofers, mould release agents, surface retarders, workability aids and repair materials.

- See separate data sheet.

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