



Conplast SP337

High performance water reducing admixture

Uses

- To significantly reduce the water demand of a concrete mix without reducing workability, allowing greatly increased early and ultimate strengths without additional cement.
- To significantly improve the workability of concrete without increasing water demand.
- Particularly suitable for increasing workability of ready-mixed concrete at elevated temperatures.
- To reduce concrete permeability and thereby reduce water penetration and enhance durability.

Advantages

- Use in production of flowing concrete permits easier construction with quicker placing and compaction and reduced labour costs.
- Workability loss in high workability concrete is slower than normally found with super plasticisers.
- Major increases in strength at all ages without increased cement contents are particular benefit in pre-cast production.
- Reduction in water : cement ratio enhances durability, producing low permeability concrete with reduced shrinkage cracking potential
- Chloride free, safe for use in pre-stressed and reinforced concrete.

Standard Compliance

Conplast SP337 complies with BS 5075 Part 3 with ASTM C494 as Type A, Type F and Type G.

Conplast SP337 complies with the requirements of the United Kingdom Water Fittings Byelaws Scheme and is listed in the Directory of Materials as suitable for use in contact with portable water under its previous name of Conplast 337.

Description

Conplast SP337 is a chloride free high performance water reducing admixture based on specially selected and blended organic polymers. It is supplied as a brown

solution which instantly disperses in water.

Conplast SP337 disperses the fine particles in the concrete mix, enabling the water content of the concrete to perform more effectively. The improved dispersion of cement particles enhances the efficiency of hydration. Normally a slight retardation of setting of between one and two hours will be obtained.

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.

Typical Dosage

The optimum dosage of Conplast SP337 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use. This allows the optimisation of admixture dosage and mix design provides a complete assessment of the concrete mix. Starting points for such trials, based on the primary use of the product, are to use a dosage within the normal typical ranges.

For high strength, water reduced concrete, the normal dosage range is from 0.50 to 1.50 litres / 100 kg of cementitious material, including PFA, GGBFS and microsilica. For high workability concrete, the normal dosage range is from 0.50 to 1.00 litre / 100 kg of cementitious material.

Where a combination of performance is required, such as some increase in workability combined with a reduced water content, then the whole range of dosage from 0.50 to 1.50 litres / 100 kg cementitious material.

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Use at other dosage

Dosage outside the typical ranges quoted above may be used if 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.

Properties

Appearance	:	Brown liquid
Specific Gravity	:	Typically 1.19 at 25°C
Chloride Content	:	Nil to BS 5075
Air Entrapment	:	Typically less than 2% additional air is entrained at normal dosages
Alkali Content	:	Typically less than 72.0g Na ₂ O equivalent / litre of admixture. A fact sheet on this is available.

Instructions for use

Mix design

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

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

In correctly designed flowing concrete, the improved dispersion of the cement particles and more efficient use of mixing water will improve mix cohesion. The slight air entrainment obtained with Conplast SP337 will also help to minimise bleed and segregation. After initial trials, minor modifications to the mix design may be made to optimise performance.

Compatibility

Conplast SP337 is compatible with other Fosroc admixtures used 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 procedure recommended on this datasheet to ensure that effects such as unwanted retardation do not occur.

Conplast SP337 is suitable for use with all types of ordinary Portland cement replacement materials such as PFA, GGBFS, and silica fume.

Dispensing

The correct quality of Conplast SP337 should be measured by means of a recommended dispenser. Normally, the admixture should then be added to the concrete with the mixing water to obtain the best results. Contact the Fosroc Technical Service Department for advice regarding suitable equipment and its installation.

Effects of overdosing

An overdose of double the intended amount of Conplast SP337 will result in an increase of retardation as compared to that normally obtained at the intended dosage. This effect is found with most water reducing admixtures, although the degree may vary. Retardation is affected by factors other than admixture, depending on the mix details and conditions involved. Trials to assess the effects in a particular mix are strongly recommended if this aspect is of particular importance. 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.

Over dosage may cause increase air entrainment, which will tend to reduce strength. The degree of this effect will depend on the particular mix design and overdose level.

An overdose will greatly increase the plasticising effect of the admixture. As concrete is normally batched to a target workability, increased plasticising will allow an increased

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water reduction. This will have the effect of increasing ultimate strength and partially of fully off-setting the effect of any increased air entrainment. If no increase in water reduction is taken and significant rise in workability is allowed, there is a strong possibility of mix segregation. Increased initial workability will tend to extend the working life of the concrete, which will delay finishing and stiffening times to some extent.

Curing

As with all structural concrete, good curing practice should be maintained, particularly in situations where an overdose has occurred. Water spray, wet hessian or a Concure⁺ spray applied curing membrane should be used.

Typical performance examples with UK materials

Many variables in concreting materials and conditions can affect the selection and use of an admixture. Trials should be made using relevant materials and conditions in order

to determine the optimum mix design and admixture dosage to meet specific requirements.

Typical performance examples from evaluation studies of Conplast SP337 are included in this datasheet. The examples quoted are representative of results obtained and are provided as illustrations of performance in different situations. Because of the variability of concreting materials, the results obtained and are provided as illustrations of performance in different situations. Because of the variability of concreting materials, the results should only be taken as typical of the performance to be expected. Results quoted in individual examples should not be taken as necessarily directly comparable with other examples given here or results obtained elsewhere for Conplast SP337 or other products.

Unless otherwise specified, all testing was carried out to the relevant parts of applicable British Standards.

Example 1: Laboratory testing for water reduction and workability increase, gravel aggregates

Mix	Dosage litre / 100 kg	OPC/ Mircosilica kg/m ³	W/C Ratio	Slump mm	Compressive Strenght N/mm ²		
					1 day	7 days	28 days
Control	-	340 / 27	0.51	70	11.5	39.5	57.0
Conplast SP337	0.70	340 / 27	0.50	65	17.0	43.0	61.5
Conplast SP337	1.00	340 / 27	0.45	100	20.0	46.5	62.0
Conplast SP337	1.50	340 / 27	0.4	Collaspe	24.5	49.5	69.0

Example 2: Laboratory testing at varying dosage with 8% microsilica addition and gravel aggregates

Mix	Dosage litre / 100 kg	OPC/ Mircosilica kg/m ³	W/C Ratio	Slump mm	Compressive Strenght N/mm ²		
					1 day	7 days	28 days
Control	-	340 / 27	0.51	70	11.5	39.5	57.0
Conplast SP337	0.70	340 / 27	0.50	65	17.0	43.0	61.5
Conplast SP337	1.00	340 / 27	0.45	100	20.0	46.5	62.0
Conplast SP337	1.50	340 / 27	0.4	Collaspe	24.5	49.5	69.0

Example 3: Laboratory testing at varying dosage with 35% PFA replacement and gravel aggregates

Mix	Dosage litre / 100 kg	OPC / PFA kg/m ³	W/C Ratio	Slump mm	Compressive Strenght N/mm ²		
					1 day	7 days	28 days
Control	-	195 / 105	0.58	75	9.5	22.0	33.0
Conplast SP337	0.50	195 / 105	0.52	75	12.0	26.5	37.0
Conplast SP337	0.75	195 / 105	0.51	80	12.5	28.0	38.0
Conplast SP337	1.00	195 / 105	0.50	80	13	30.0	41.0



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Example 4: Laboratory testing at varying dosage to show workability increase, gravel aggregates

Mix	Dosage litre / 100 kg	Cement Content kg/m ³	W/C Ratio	Slump mm	Flow mm	Compressive Strength N/mm ²		
						1 day	7 days	28 days
Control	-	300	0.61	75	-	17.5	34.5	45.0
Conplast SP337	0.75	300	0.61	-	520	18.0	35.5	43.5
Conplast SP337	1.00	300	0.61	-	640	17.5	35.5	44.0
Control	-	300	0.7	-	525	13	26	35.0

Estimating - packaging

Conplast SP337 is available in drum and bulk supply. For larger users, storage tanks can be supplied. Details of specific packaging volumes are available on request.

Storage

Conplast SP337 has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 50°C. Should the temperature of the product fall outside this range, then Fosroc Technical Service Department should be contacted for advice.

Freezing point : Approximately -3°C

Precautions

Health & Safety

Conplast SP337 does not fall into the hazard classifications of current regulations (see notes 1 & 2 below). However, it should not be 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 Datasheet available for this product.

Fire

Conplast SP337 is water based and non-flammable.

Cleaning and disposal

Spillages of Conplast SP337 should be absorbed onto sand, earth or vermiculite and transferred to suitable containers. Remnants should be hosed down with large quantities of water.

The disposal of excess or waste material should be carried out in accordance with local legislation under the guidance of the local waste regulatory authority.

Additional Information

Conplast SP337 was previously known as Conplast 337.

Note 1: CPL Regulations 1984 Supply – Schedule 1

Note 2: HSE Publication Guidance Note EH40

Conplast is the trademark of Fosroc International Limited

† See separate datasheet

Important note

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of 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 of information given by it.



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