

Expanplast* SP430



CONSTRUCTION CHEMISTRY

High performance superplasticising admixture

Uses

- To provide excellent acceleration of strength gain at early ages and major increase in strength at all ages by significantly reducing water demand in concrete mix.
- Particularly suitable for precast concrete and other high early strength requirements.
- To significantly improve the workability of site mixed and precast concrete without increasing water demand.
- To provide improved durability by increasing ultimate strength and reducing concrete permeability.

Advantages

- Major increase in strength at early ages without increased cement contents are of particular benefit in precast concrete, allowing earlier stripping time.
- Makes possible major reductions in water cement ratio which allow the production of high strength concrete without excessive cement contents.
- Use in production of flowing concrete permits earlier construction with quicker placing and compaction and reduce labor costs without increasing water contents.
- Increased workability levels are maintained for longer than with ordinary sulphonated melamine admixtures
- Improved cohesion and particle dispersion minimizes segregation and bleeding and improves pumpability.
- Suitable for use with all normal cement replacement materials, including PFA, GGBFS and microsilica.

Standards compliance

Expanplast SP430* conforms with BS 5075 Part 3, BS:EN934-2:1998, ASTM C494 as Type A and F

Description

Expanplast* SP430 is a chloride free, superplasticising admixture based on selected sulphonated naphthalene polymer. It is supplied as a brown solution which instantly disperses in water.

Expanplast* SP430 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.

Expanplast* SP430R a modified version of Expanplast* SP430 is suitable for use when higher temperatures are experienced during the hot summer period.

Technical support

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

Dosage

The optimum dosage of Expanplast* SP430 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use.

For high strength, high workability concrete the normal dosage range is from 1.00 to 3.00 liters/100 kg of cementitious material, including PFA, GGBFS and microsilica. For normal workability concrete the dosage range is from 0.70 to 2.00 liters/100 kg of cementitious material.

Use at other dosages

Dosages outside the typical ranges quoted above may be used to meet particular mix requirements. Contact Epanchem Fospak for advice in these cases.

Effects of overdosing

An overdose of double the intended amount of Expanplast* SP430 will result in a significant increase in retardation, segregation, and heavy bleeding 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 sulphates resisting cement or cement replacement materials are used.

Properties

Appearance : Brown liquid

Specific gravity : Typically 1.175at 20°C

Air entrainment : Typically less than 2% additional air is entrained at normal dosages.



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Instructions 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 water reduction 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 Epanchem Fospak.

Compatibility

Expanplast* SP430 is compatible with other Epanchem Fospak 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 trial mixes should assess the resultant properties of concrete containing more than one admixture.

Expanplast* SP430 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 Expanplast* SP430 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 Epanchem Fospak for advice regarding suitable equipment and its installation.

Estimating - packaging

Expanplast* SP430 is available in 210 liter drums and bulk supply.

Storage

Expanplast* SP430 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 contact your local Epanchem Fospak office for advice.

Freezing point: Approximately -6°C

Precautions

Health and safety

Expanplast* SP430 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

Expanplast* SP430 is water based and non-flammable.

Cleaning and disposal

Spillages of Expanplast* SP430 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.



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* Denotes the trademark registered.

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