

Expanplast* SP435

High performance superplasticiser for concrete

Uses

- 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 reducing concrete permeability.
- 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.

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.
- Improved cohesion and particle dispersion minimizes segregation and bleeding.
- Suitable for use with all normal cement replacement materials, including PFA, GGBFS and micro-silica

Standards compliance

Expanplast* SP435 conforms with ASTM C494 as Type A & F

Description

Expanplast* SP435 is a chloride free, superplasticising admixture formulated from synthetic polymer, supplied as brown liquid.

Expanplast* SP435 disperses by electro kinetic action in the concrete mix, enabling the water phase of the concrete to perform more effectively.

Dosage

The optimum dosage of Expanplast* SP435 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use.

The normal dosage range is from 0.50 to 2.50 liters/100 kg of cementitious material, including PFA, GGBFS and micro-silica.

Use at other dosages

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

Properties

Appearance : Brown liquid

Specific gravity : Typically 1.14 - 1.15 at 20°C

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

Effects of overdosing

An overdose of double the intended amount of Expanplast* SP435 will result in a significant increase in 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. 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.

An overdose will increase core workability and increased initial workability will tend to extend the working life of the concrete, which will delay finishing and stiffening times to some extent.

Instructions for use

Mix design

Where the main requirement is to improve strengths at early ages, initial trials should be made with normal concrete mix designs. The addition of the admixture will allow the reduction of water from the mix whilst maintaining workability. After initial trials, minor modifications to the overall mix design may be made to optimize performance.

Compatibility

Expanplast* SP435 is compatible with other 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* SP435 is suitable for use with all types of cements OPC, SRC and cement replacement materials such as PFA, GGBFS, and Micro-silica.

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* SP435 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 Fospak for advice regarding suitable equipment and its installation.

Estimating – packaging

Expanplast* SP435 is available in 210 liter drums and bulk supply for large user.

Storage

Expanplast* SP435 has a minimum shelf life of 12 months provided the temperature is kept within the range of 2°C to 40°C. Should the temperature of the product fall outside this range then contact your local Fospak office for advice.

Freezing point: Approximately - 6°C

Precautions

Health and safety

Expanplast* SP435 does not fall into the hazard classifications of current regulations. 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* SP435 is water based and non-flammable.

Cleaning and disposal

Spillages of Expanplast* SP435 should be absorbed into 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.

* Denotes the trademark registered

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