



CONSTRUCTION CHEMISTRY

# Expanplast\* SP333

## Multi-range high performance superplasticiser

### Uses

- To reduce the water demand of a concrete mix without reducing workability, allowing 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

- Usable across a wide dosage range to provide performance ranging from normal plasticiser to superplasticiser, providing flexibility in performance to meet a range of needs.
- 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 superplasticisers.
- Reduction in water : cement ratio enhances durability, producing low permeability concrete with reduced shrinkage cracking potential.
- Suitable for use with all normal cement replacement materials, including PFA, GGBFS and microsilica.

### Standards compliance

Expanplast\* SP333 conforms with BS 5075 Part 1, BS:EN934-2:1998, ASTM C494 as Type A,F and Type G, and ASTM C1017 as Type 1 and Type 2.

### Description

Expanplast\* SP333 is a multi-range water-reducing admixture based on specially selected and blended organic polymers. It is supplied as a brown solution, which instantly disperses in water.

Expanplast\* SP333 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. At higher dosage levels retardation of setting will be obtained.

Expanplast\* SP333 HT\* a modified version of Expanplast\* SP333 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\* SP333 to meet specific requirements should always be determined by trials using the materials and conditions that will be experienced in use.

Where increased strengths through water reduction are required the normal dosage range is from 0.50 to 3.00 liters/100 kg of cementitious material, including PFA, GGBFS and microsilica. For normal workability concrete the dosage range is from 0.25 to 1.50 litres/100 kg of cementitious material.

Dosages at the higher end of the ranges recommended will give significant retardation and may only be suitable for use in warmer climates.

### 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\* SP333 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.



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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.

### Properties

Appearance : Brown liquid

Specific gravity : Typically 1.18 - 1.19 at 20°C

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

### 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\* SP333 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\* SP333 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\* SP333 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\* SP333 is available in 210 liter drums and bulk supply.

### Storage

Expanplast\* SP333 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\* SP333 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\* SP333 is water based and non-flammable.

#### Cleaning and disposal

Spillages of Expanplast\* SP333 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.

#### REGIONAL SALES OFFICES IN PAKISTAN:

##### **Fospak (Pvt) Ltd.**

##### **Head Office**

702, Business Avenue,  
Block-6, PECHS., Shakra-e-Faisal,  
Karachi, Pakistan.

Tel # +92-21-34528477, 34529859

Fax # +92-21-34522436

Email : info.khi@fospak.com.pk

##### **Lahore Sales Office**

2nd Floor Sarwar Shaheed Plaza,  
Cavalry Ground,  
Main Boulevard, Lahore Cantt,  
Lahore, Pakistan.

Tel # +92-42-36675773

Fax # +92-42-36675838

Email : info.lhr@fospak.com.pk

##### **Rawalpindi Sales Office**

1st Floor,  
Al-Harmain Plaza,  
Main Murree Road,  
Rawalpindi, Pakistan.

Tel # +92-51-39290592

Fax # +92-51-39290590

Email : info.isb@fospak.com.pk

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