

# CasTech ES 438

High Performance Superplasticizer for Pre-cast Concrete  
Based on Poly-Carboxylate Ether

Technical Data Sheet  
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## Description

**Castech ES 438** is a high-performance superplasticizer admixture for Pre-cast concrete based on modified polycarboxylate ether, specifically developed to provide the highest performance of water reduction for high strength concrete.

**Castech ES 438** is formulated to impart improved workability to the concrete and to achieve high early and ultimate compressive strength.

## Uses

- Pre-cast industry
- Prestressed concrete
- High flow concrete
- High early strength floor screeds
- Pumped concrete
- High performance concrete with very low water cement ratios

## Advantages

- Increased early strength development
- Excellent concrete durability and rheology
- Improves resistance to carbonation
- Excellent handling properties
- Produces concrete with high levels of workability without segregation
- Lowers drying shrinkage and creep
- Increased productivity, resulting in reduced labor costs.

## Typical Properties at 25°C

Property	Value
Appearance	Light Yellow Liquid
Specific Gravity	1.04 ± 0.02 @ 25 °C
Chloride Content	NIL to BS 5075

## Standard

**Castech ES 438** complies with ASTM C494 Type F

## Dosage

Dosage rates vary depending upon the amount of plasticity and/or water reduction desired. Recommended dosage ranges from 0.8 To 2.5 litres per 100 kg of total cementitious material. Other dosages may be recommended in special cases according to the specific site conditions. It is highly recommended that trial mixes be prepared to determine the optimum dosage for your specific performance requirements.

## Overdosing

Exceeding the recommended dose will result in an increase in retardation and workability but provided that adequate curing is maintained, the ultimate strength of the concrete will not be impaired. The effects of overdosing will be increased if cement replacement materials or type v cement is used. Overdosing may also increase air entrainment which tends to reduce strength.

## Mixing

**Castech ES 438** is a ready to use liquid admixture to be added to the concrete as a separate component.

**Castech ES 438** is poured into the concrete mix right after the addition of at least 80% of mixing water, when all materials are wetted. Avoid adding the admixture to the dry aggregates.

### **Compatibility**

**Castech ES 438** is compatible with all types of cement replacements such as microsilica, fly ash and GGBS. However, **Castech ES 438** is not compatible with naphthalene and melamine sulphonate based admixtures.

### **Packaging**

210 litre drums or 1000 litre bulk

### **Storage and Shelf Life**

Up to 1 year in unopened original packing, protected from extremes of heat and cold and stored under shade.

### **Precaution**

**Castech ES 438** is not a fire or health hazard. Spillages should be washed down immediately with cold water. For further information refer to the Material Safety Data Sheet

### **Warranty**

**CASTECH** products are guaranteed against defective materials and manufacture and sold subject to **CASTECH** standard terms and conditions of sale. Whilst **CASTECH** endeavors to ensure that any advice, information or recommendation given is correct, the company cannot accept any liability either directly or indirectly arising from the use of its products, since the company has no control over the application of its products. Information contained in this document is given on the best current knowledge. **CASTECH** policy is one of continuous improvement and the company reserves the right to change the company products without prior notice.

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