

Product Data Sheet

CasTech ES-431

Nov-2025, Ver. 01.01



High Performance Superplasticizer for Precast Concrete based on PCE

DESCRIPTION

CasTech ES-431 is a high-performance superplasticizer admixture for precast concrete based on modified polycarboxylate ether, specifically developed to provide the highest performance of water reduction for high strength concrete.

CasTech ES-431 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

Key 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

Consistence	Liquid
Colour	Light Yellow
Chloride Content (BS 5075)	Nil
Classification According to ASTM C494	Type A & F
Specific Gravity	1.03 ± 0.02 @ 25°C
pH	4.0 ± 1.0

COMPATIBILITY

CasTech ES-431 is compatible with all types of cement replacements such as micro silica, fly ash and GGBS. However, **CasTech ES-431** is not compatible with naphthalene and melamine sulphonate based admixtures.

INSTRUCTIONS FOR USE

CasTech ES-431 is a ready to use liquid admixture to be added to the concrete as a separate component. **CasTech ES-431** 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.

DOSAGE

Dosage rates vary depending upon the amount of plasticity and/or water reduction desired. The 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. Trial mixes should be prepared to determine the optimum dosage for the 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.

PRECAUTIONS

Health & Safety:

CasTech ES-431 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.

STORAGE

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

Fire:

CasTech ES-431 is not a fire hazard.

PACKAGING

CasTech ES-431 is available in 210-litre drums or 1000-litre bulk.

Product Data Sheet

CasTech ES-431

Nov-2025, Ver. 01.01



TECHNICAL SUPPORT

CasTech provides technical support service on mix design,

admixture selection, evaluation of trials, dispensing equipment etc.
Please contact the Technical Department in these cases.

CasTech MIDDLE EAST FZE

T6-04, Sharjah Airport Free Zone, Sharjah, UAE

P.O. Box: 121661 Tel.: +971-6-5489207

Fax: +971-6-5579879 Email: info@castechchem.com