ESTEEMA PQC

TECHNICAL DATA SHEET

PCE BASED RETARDING TYPE SUPER-PLASTICIZER FOR PAVEMENT QUALITY CONCRETE

Description

ESTEEMA PQC is based on PCE based and is supplied as a brown liquid instantly dispersible in water. **ESTEEMA PQC** has been specially formulated to give high water reductions upto 25% without loss of workability or to produce high quality concrete of reduced permeability. **ESTEEMA PQC** is specially formulated to meet the requirements of PQC.

Uses

- High performance concrete.
- Ready mix concrete.
- Flowing concrete.
- Heavily reinforced concrete.
- Pumpable concrete.
- Concrete for precast slabs

Advantages

- Workability for longer periods
- Improves cohesion
- Resistance to segregation even at high workability
- Suitable for high volume replacement of GGBFS or fly ash in concrete mix
- Reduced water content for a given workability
- Higher ultimate strengths
- Reduced shrinkage and creep
- Increased ease in finishing concrete
- Increased durability

Reaction Mechanism

ESTEEMA PQC has a different chemical structure from the traditional superplasticisers. It is a unique combination of the latest generation superplasticisers, based on a polycarboxylic ether polymer with long lateral chains. This greatly improves cement dispersion. At the beginning of the mixing process it initiates the same electrostatic dispersion mechanism as the traditional superplasticisers, but the side chains linked to the polymer backbone generates a steric hindrance which greatly stabilizes the cement particles' ability to separate and disperse keeping good cohesion in the mix.

ESTEEMA PQC considerably reduces the water demand in flowable concrete and improves the workability retention, as it having both the Electrostatic repulsion and Steric hindrance.

Characteristics

Form	: Liquid
Colour	: Brown
Relative Density	: 1.1 ± 0.05 at 25^0C
pH	: Min. 6
Chloride ion content	: Nil (As per BS 5075 Part I)

Standard Compliance

It conforms to IS:9103:1979 and BS:5075 Part 3 and ASTM-C-494 Type 'G' – High Range Water Reducing and Retarding Admixture.

Dosage

The optimum dosage is best determined by site trials with the concrete mix which enables the effects of workability, strength gain or cement reduction to be measured. Site trials with **ESTEEMA PQC** should always be compared with mix containing no admixture. As a guide, the rate of addition is generally in the range of 0.6 - 1.5 % by weight of cement. Over dosage may cause Increase in air entrainment, Increase in workability, Retardation of initial and final setting times.

Effect of under and overdosing

Under dosages may cause lack of workability and over dosage may cause bleeding & segregation and extension of setting time.

Direction of use

- Add **ESTEEMA PQC** to the dosing water. It should not come in contact with dry cement.
- Charge all concrete material in the proper order ino the mixer with about 70 % of the mixing water and mix for appropriate time. Add rest quantity of water with admixture to obtain the required slump and mix for additional 2 – 3 minutes.
- Narrow sections must be watertight, strong and must have good bracing.
- During the “Flowing period” the concrete will exert a higher pressure at the base of the form than conventional concrete.
- Compatible with all types of Portland cement including SRC (Sulphate Resistance Cement) and not compatible with high alumina cement.

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Technical Support

FCSC provides technical advisory services for on-site assistance and guidance on mix design, optimum dosage evaluation of trials.

Compatibility

ESTEEMA PQC can be used with all types of cements except high alumina cement. It is compatible with ligno- sulphonates and carboxylic acid based plasticiser and retarders and also with most type of air entrainers, accelerators, viscosity modifying agent, extended set-control admixtures, corrosion inhibitors, and shrinkage reducers. Site trials should be carried out to optimize dosages.

It is not compatible with Melamine or Naphthalene based admixtures and should not be used in conjunction in the same mix.

Durability

Reduction in W/C ratio enables increase in density and impermeability thus enhancing durability of concrete.

Corrosion

It neither initiates nor promotes corrosion as it does not content any harmful chemicals. Rather it reduces the risk of corrosion of reinforcement or other embedment, as it has high water reduction power to produce a dense impermeable concrete.

Packaging

ESTEEMA PQC is supplied in 20 kg, 250 kg drums or in bulk on request.

Storage and Shelf life

ESTEEMA PQC must be stored wheretemperatures do not drop below +5°C. If product has frozen, thaw at +5°C or above and completely reconstitute using mild mechanical agitation. Do not use pressurized air for agitation. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 12 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.

For specific storage advice consult our local FIRSTCHOICE SPECIALITY CHEMICALSrepresentative.

Safety precautions

ESTEEMA PQC does not fall into the hazard classifications. However, it should not be swallowed or allowed to come into contact with the 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 the eyes it shall be rinsed immediately with plenty of water and medical advice sought immediately. If swallowed, medical attention shall be sought immediately - Vomiting should not be induced.

Fire

ESTEEMA PQC is water based and non- flammable.

Cleaning of Tools

Clean all tools and application equipment with water immediately

Note

All Technical Data Sheets are updated on regular basis; itis the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact our local FIRSTCHOICE SPECIALITY CHEMICALS representative.

Disclaimer

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labor involved in the application are beyond our control.