

## UNIPLAST PCE 12000

HIGH PERFORMANCE CONCRETE SUPERPLASTICIZER BASED ON MODIFIED POLYCARBOXYLIC POLYETHERS

UCA-LA-04-0722

### DESCRIPTION

UNIPLAST PCE 12000 has been developed for applications in Ready Mix Concrete, Concrete Block, Pavers and Precast concrete industries where the highest durability and performance is required

The super plasticizing action of UNIPLAST PCE 12000 is different when compared to conventional super plasticizers based on sulfonated melamine and naphthalene formaldehyde condensate, which creates electrostatic repulsion of particles.

UNIPLAST PCE 12000 initially creates the same electrostatic repulsion and further stabilizes the mixes due to static repulsion of long lateral chains linked to the polymer backbone

It is designed to improve the rheology of precast concrete & makes mix very flowable at even low water cement ratios.

### USES

- ❖ The excellent dispersion properties of UNIPLAST PCE 12000 makes it the ideal admixture for self compacting concrete, Precast, Concrete Block, Pavers and Ready Mixed Concrete where low water cement ratios are required.
- ❖ This property allows the production of very high early and high ultimate strength concrete with minimal voids and therefore optimum density.

### STANDARDS

UNIPLAST PCE 12000 is free from chlorides and complies with: **ASTM C 494 Types A,E and F** and **BS EN 934-2**

### TYPICAL PROPERTIES

<b>CALCIUM CHLORIDE CONTENT</b>	≤ 0.01% as per EN 934-1:2008
<b>SPECIFIC GRAVITY</b>	1.07 – 1.10 g/cc @ 25 °C.
<b>DURABILITY</b>	Water reduction gives increase in density and water impermeability which improves durability.
<b>COMPRESSIVE STRENGTH</b>	Reduction in water/cement ratio will result in increase in early age compressive strength.
<b>CEMENT COMPATIBILITY</b>	Compatible with sulfate resisting and other Portland cements and high alumina cements.  UNIPLAST PCE 12000 is suitable for mixes containing: - Microsilica - Pulverized fuel ash - Ground granulated blast furnace slag cement  UNIPLAST PCE 12000 must not be used in conjunction with any other admixture unless prior approval is received from Unichem Chemicals & Asphalt Technical Department.
<b>PACKAGING</b>	1000 LITRE IBC & BULK TANKER

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## ADVANTAGES

▪ Due to the strength development characteristics, elimination or reduction of steam curing in precast works can be considered leading to economical savings

### ▪ During mixing and placement

- High workability without segregation or bleeding
- Self-compacting concrete. Generally no vibration required.
- Can be placed and compacted in congested reinforcement
- Reduced labor requirement
- Improved surface finish
- Chloride free

### ▪ Effect on hardened concrete properties

- Increased early and ultimate compressive strengths
- Increased flexural strength
- Higher E modulus
- Improved adhesion to reinforcing and stressing steel
- Better resistance to carbonation
- Lower permeability
- Better resistance to aggressive atmospheric conditions
- Reduced shrinkage and creep
- Increased durability

## INSTRUCTIONS FOR USE

### DOSAGE

The optimum dosage for UNIPLAST PCE 12000 should be determined by site trials with the particular concrete mix under prevailing ambient condition.

We provide **technical support service** on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical department in these cases.

**As a guide the dosage is normally** between 0.5 and 2 litres per 100 kg of (cementitious material).

UNIPLAST PCE 12000 is a ready to use admixture that needs to be added to the concrete at the time of batching. The maximum effect is achieved when UNIPLAST PCE 12000 is added after the addition of 50 % to 70 % of the total water.

It must not be added to the dry materials.

Thorough mixing is essential and a minimum mixing cycle, after the addition of the UNIPLAST PCE 12000, of 120 seconds for forced action mixers is recommended.

### OVERDOSING

An over dose of UNIPLAST PCE 12000 will result in very high workability, possible severe retardation and segregation. Otherwise the ultimate compressive strength of the concrete will not be impaired, if properly cured. The overdosing effect will be exaggerated when used with sulphate resisting cement.

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## CURING

As with all structural concrete normal curing methods apply.

## CLEANING

Spillages of UNIPLAST PCE 12000 can be removed with water.

## STORAGE & SHELF LIFE

UNIPLAST PCE 12000 should be protected from extremes of temperature. It has a shelf life of 12 months from the date of manufacturing. Store in a dry & shaded area in original packaging.

## SAFETY PRECAUTIONS

UNIPLAST PCE 12000 is nontoxic.

Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

**Fire:** UNIPLAST PCE 12000 is non-flammable.

## LIMITATION OF LIABILITY

This information is based on our current level of knowledge. It is given in a good faith but it is not intended to guarantee any particular properties. The users must satisfy themselves that there are no circumstances requiring additional information or precautions or the verification of details given herein.

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