

UNIPLAST PCE 12000

High Performance Concrete Superplasticiser Based On Modified Polycarboxylic Polyethers

Description

UNIPLAST PCE 12000 has been primarily developed for applications in the ready mixed and precast concrete industries where the highest durability and performance is required.

Super plasticizing action of UNIPLAST PCE 12000 is different than conventional super plasticizers based on sulfonated melamine and naphthalene formaldehyde condensate, which create electrostatic repulsion of particles. UNIPLAST PCE 12000 initially create 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 low water cement ratios.

Use

The excellent dispersion properties of UNIPLAST PCE 12000 make it the ideal admixture for self compacting concrete, precast 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.

Due to the strength development characteristics the elimination or reduction of steam curing in precast works be considered as an economical option.

Advantages

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

Typical Properties

Calcium chloride content: $\leq 0.01\%$ as per EN 934-1:2008

Specific gravity: 1.070 to 1.10 at 20° C.

Cement compatibility: Compatible with sulfate resisting and other Portland cements and high alumina cements.

UNIPLAST PCE 12000 must not be used in conjunction with any other admixture unless prior approval is received from the Concrete & Asphalt Technology Technical Department.

UNIPLAST PCE 12000 is suitable for mixes containing:

- Microsilica
- Pulverized fuel ash
- Ground granulated blast furnace slag cement

Durability: Water reduction gives increase in density and water impermeability which improves durability.

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Compressive strength: Reduction in water/cement ratio will result in increase in early age compressive strength.

Standards

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

Direction for use

UNIPLAST PCE 12000 is a ready to use admixture that is added to the concrete at the time of batching.

The maximum effect is achieved when the UNIPLAST PCE 12000 is added after the addition of 50 % to 70 % of the water.

UNIPLAST PCE 12000 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.

Dosage: The normal dosage for UNIPLAST PCE 12000 is between 0.5 and 2 litres per 100 kg of (cementitious material).

Dosages outside this range are permissible subject to trial mixes.

Curing: As with all structural concrete normal curing methods apply.

Cleaning: Spillages of UNIPLAST PCE 12000 can be removed with water.

Packaging

UNIPLAST PCE 12000 is supplied in 210 litres drums and in bulk.

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Storage and Shelf life

Storage: UNIPLAST PCE 12000 should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. UNIPLAST PCE 12000 has a minimum shelf life of 12 month provided temperature is kept within the range 5°C to 30°C.

Technical Service

Unichem Chemicals & Asphalt W.L.L. provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical department in these cases.

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.