TKK
CEMENTOL EXPERT
HIPERPLAST 997

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Superplasticizing admixture

AREA OF USE

Cementol Hiperplast 997 is a special, highly effective superplasticizer based on polycarboxylate esters (PCE). It is intended for the production of high performance concrete, particularly when high water reduction and fast gain of initial compressive strength are required. It is primarily intended for the production of precast elements because it allows significantly shorter time from casting until demolding – short production cycle in industrial plants.

Its use enables:
- very high reduction of mixing water content with unchanged workability of concrete,
- strong improvement of concrete workability with unchanged mixing water content,
- accelerated gain of initial compressive strengths,
- concreting at normal and low temperatures,
- preparation of easy-to-install and self-compacting (SCC) concrete.

We use it for:
- production of precast concrete elements,
- production of elements with requirements for high aesthetical appearance,
- high performance and durable concrete.

It contains no chlorides or other substances that cause corrosion of reinforcing steel, so it can be used in reinforced concrete and prestressed structures without restriction.

TECHNICAL CHARACTERISTICS

Characteristic	Declared value
Appearance	Yellow-brown liquid
Density, 20 °C	(1.06 ± 0.02) kg/L
pH	5.5 ± 1.0
Water-soluble chloride content (Cl^-)	Chloride free
Alkali content (Na_2O equivalent)	< 3.0 %

COMPLIANCE

Cementol Hiperplast 997 - superplasticizer complies with the requirements of EN 934-1 and EN 934-2 / T3.1 and T3.2

ACTION

Superplasticizer molecules are adsorbed on the surface of cement particles. Because of the composition and shape of the molecules, cement particle aggregation is prevented, the friction force between the particles in the cement paste is reduced, and the fluidity and thus workability of the cement paste is increased significantly. The special structure of the molecules allows for optimal rheological properties in concrete with a low water-cement ratio.

DOSAGE AND INSTRUCTIONS FOR USE

The recommended dose is 0.3 – 2.0 % of binder weight (0.3 – 2.0 kg per 100 kg of binder). Lower dosages are appropriate for less demanding conventional concretes, whereas higher dosages are used for high performance and self-compacting (SCC) concretes.

Dosage is determined by a variety of factors, including the type and amount of cement used, the type and grain size distribution of the aggregate, the water-cement ratio, and the requirements for the properties of fresh and hardened concrete. As a result, we recommend conducting preliminary tests with the materials that will be used to determine the optimal dosage.

We follow the basic principles for preparing SCC concretes when preparing such concretes.

Cementol Hiperplast 997 provides excellent initial characteristics of fresh concrete, which are time-limited, so special attention must be paid to the time interval in which the concrete must be installed. This is primarily determined by the temperature of the concrete and its surroundings, the amount and type of cement used, and the water-cement ratio.

Cementol Hiperplast 997 can be added to a concrete mix diluted with mixing water, or it can be added in concentrated form to an already prepared fresh concrete mix of a lower consistency class, or after we have added 70-80% of the mixing water. Mix well to distribute the admixture evenly throughout the concrete mix. The recommended wet mixing time is 3 minutes.

Cementol Hiperplast 997 is compatible with a wide range of additives, including Cementol Delta family plasticizers, Cementol Hiperplast family hyperplasticizers, Cementol B NOVI hardening accelerator, Cementol Eta family air-entrainig admixtures, and Cementol Retard family set retarders.

Cementol Hiperplast 997 **is incompatible** with Cementol Zeta family superplasticizers, hardening accelerating admixture Cementol Omega F-conc., and air-entrainig admixture Cementol SPA.

Before using a higher number of admixtures in a concrete mixture, we advise prior examinations. In this case, they must be added to the concrete mixture separately (one after the other).

Stir before use.

When designing a concrete mixture, we respect the requirements and principles of the EN 206 standard: Concrete - specification, performance, production and conformity, as well as the relevant national provisions.

During concreting and curing of fresh concrete we respect the principles of good practice.

PACKAGING

drums 50 kg, IBC containers 1 m^3

STORAGE

- The product should be stored at temperatures between +5 °C and +35 °C. We need to protect it from damage, freezing and direct sunlight.
- A properly stored product has a shelf life of at least 2 years after the date of manufacture.
- The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

HEALTH, SAFETY AND ECOLOGY

No special measures are required when working with Cementol Hiperplast 997. Follow the general instructions for working with chemicals: take care of cleanliness, do not eat, drink or smoke while working. After finishing work, wash hands thoroughly with water.
More information on safe handling and disposal of the product is available in the safety data sheet, which is provided on request, and is also available from the dealer or distributor where you purchased the product.

WARNING

Instructions and recommendations are given based on examinations in our laboratories and experience to date. Due to specific conditions and work methods, preliminary tests are advised for every type of use, for each individual case of use of the product alone, or in combination with other admixtures.
We recommend special attention and consultation with the technical service when using Cementol Hiperplast 997 in self-compacting SCC concretes and/or in combination with air-entraining admixtures.
Since we cannot influence the course of work, we cannot be held responsible for its quality!

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