

Superplasticizing admixture

AREA OF USE

Cementol Hiperplast 381 LT is a special superplasticizer based on polycarboxylate esters (PCE). It is intended for the production of ready-mix concrete with high requirements, providing high water reduction and excellent pumpability. It enables a very long workability time of fresh concrete mix, making it suitable for concrete preparation where very long transport is expected and for concreting at high temperatures. It is suitable for the production of special types of low-viscosity concrete, such as self-compacting concrete (SCC) and visible or architectural concrete.

Its use enables:

- reduction of mixing water content with unchanged workability of concrete,
- extended workability time,
- longer transportation of concrete from preparation to installation,
- concreting at high temperatures,
- high compressive strengths of concrete.

We use it for:

- ready-mix concrete when a longer workability time is required,
- pumped concrete,
- self-compacting (SCC) concrete,
- visible concrete,
- 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	Light yellow to yellow-brown liquid
Density, 20 °C	(1.06 ± 0.02) kg/L
pH	3.0 ± 1.0
Water-soluble chloride content [Cl ⁻]	Chloride free
Alkali content [Na ₂ O equivalent]	< 3.0 %

COMPLIANCE

Cementol Hiperplast 381 LT - 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. Because of the unique structure of the molecules, adsorption occurs gradually and over a longer period of time, allowing the concrete to retain its good workability for a longer period of time.

DOSAGE AND INSTRUCTIONS FOR USE

The recommended dose is 0.4 – 2.5 % of binder weight [0.4 – 2.5 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.

The usual dose is 0.5 – 0.8 % by weight of cement or binder and is suitable for the most common types of concrete [pumped concrete with consistency class S3 or S4].

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 381 LT 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.

If a consistency correction is required before concrete prepared with Cementol Hiperplast 381 LT is installed, the superplasticizer can be added directly to the concrete mixer of the transport vehicle. In this case, use an admixture that has been pre-diluted with water in a 1:4 ratio [1 part Cementol Hiperplast 381 LT + 4 parts water], and mix for 1 minute per 1 m³ of concrete, and at least 5 minutes.

Cementol Hiperplast 381 LT 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-entraining admixtures, and Cementol Retard family set retarders.

Cementol Hiperplast 381 LT **is incompatible** with Cementol Zeta family superplasticizers, hardening accelerating admixture Cementol Omega F-conc., and air-entraining 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 m³

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 381 LT. 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 381 LT 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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