



CEMENTOL® Hiperplast 481

Superplasticizer, SIST EN 934-2: T 3.1/3.2

Superplasticiter - hyperplasticizer for ready-mix concrete and prefabricated concrete elements

FIELD OF APPLICATION

Cementol Hiperplast 481 is a special highly effective new-generation superplasticizer – hyperplasticizer, especially suitable for manufacturing of ready-mix concrete / transport concrete and prefabricated concrete elements. It has relatively better robustness within PCE superplasticizers.

Its use enables:

- a strong reduction of mixing water with unchanged concrete workability and increased concrete strength at the same time,
- better concrete workability with unchanged quantity of mixing water,
- no negative effects on development of early strengths
- slower decrease of fresh concrete workability than with the use of superplasticizers of previous generation

Cementol Hiperplast 481 is particularly suitable for the preparation of easy-to-built-in concrete and SCC – self-compacting concrete. The basic instructions for the preparation of SCC have to be followed. The final effect depends on the type and quantity of cement, water-cement ratio, aggregate composition and dosage of **Cementol Hiperplast 481**.

COMPLIANCE WITH THE STANDARD EN 934-2:

Property	Declared values with acceptable deviation
Appearance	bright yellow-brown liquid
Relative density, 20°C	(1,05 ± 0,02) kg/dm ³
pH	5,5 ± 1,0
Water soluble chloride content (Cl ⁻)	Chloride free
Alkali content (Na ₂ O equivalent)	< 3,0 %

ACTION

Cementol Hiperplast 481 is adsorbed onto cement particles. Due to its volume structure, it prevents cement agglomeration by inducing electrostatic repulsion and steric hindrance – it prevents the close contact of the particles. The adsorption process is gradual and decelerated, therefore concrete prepared with **Cementol Hiperplast 481** has longer workability time than when traditional superplasticizers are used.

DOSAGE AND INSTRUCTIONS FOR USE

- Recommended dosages:
0,5 – 2 % of cement weight (0,4 to 2 kg of admixture per 100 kg of binder) depending on the water-cement ratio, required workability of concrete, type and dosage of cement and type of required concrete. Lower dosages are applicable for ordinary, less demanding concretes, whereas higher dosages are suitable for production of self compacting high strength concretes (SCC and HSC).
 Dosages **0,5 – 0,7 %** of cement weight are applicable for the most frequent types of concretes (pumpable concretes of S3 and S4 consistency classes).

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- **Cementol Hiperplast 481** can be added to the concrete mixture either diluted with mixing water or, preferably, applied directly onto freshly prepared low-workability concrete mixture in concentrated form. Optimal results are achieved if admixture is added to the concrete mixture after 70-80 % of mixture water had been added previously. Add carefully!
- The recommended time of wet mixing is three minutes and the minimum mixing time is one minute. Optimal mixing time should be determined at each concrete mixing plant.
- Should **Cementol Hiperplast 481** be added subsequently at the construction site into the mixer of a concrete truck in order to improve workability of concrete, the mixer should operate at its maximum power at least for one minute per 1m³ or at least five minutes.

Warning

- The action of **Cementol Hiperplast 179** is very specific, therefore the values of w/c ratio and workability of concrete prepared with this admixture cannot be compared to the correspondent values for ordinary concrete.
- Because of its high effectiveness and low dosages, **Cementol Hiperplast 481** might be sensitive to some extent to changes in concrete composition (quantity of cement, aggregate composition, w/c ratio).
- To ensure easier placing and workability, the slump should be slightly higher than in ordinary concrete.
- Self-compacting concrete with relatively high w/c ratio has higher strength than ordinary concrete with the same w/c ratio. This is a consequence of the compact, homogenous structure of SCC.
- **Cementol Hiperplast 481** is compatible with set accelerating admixture **Cementol Omega P**.
- **Cementol Hiperplast 481** is compatible with air-entraining admixtures **Cementol Eta S** and **Cementol Eta S1**.
- **Cementol Hiperplast 481** is compatible with hardening accelerating admixtures **Cementol B NOVI / B NOVI-conc.**
- **Cementol Hiperplast 481** is compatible with plasticizers **Cementol Delta Ekstra / Delta Ekstra W / Delta Ekstra WE**.
- **Cementol Hiperplast 481** is INCOMPATIBLE with superplasticizers **Cementol Zeta-conc. / Zeta P-conc. / Zeta T-conc.**, hardening accelerating admixture **Cementol Omega F-conc.** and air-entraining admixture **Cementolom SPA**.
- Subsequent improvement of concrete workability is possible with hyperplasticizers, e.g. from the family **Cementol Hiperplast**.

ADVANTAGES

- Energy saving, particularly for SCC.
- Easier and faster placing and pumping, particularly for SCC.
- Reduced noise and vibration pollution, particularly for SCC.
- Higher initial and final strength.
- Improved watertightness.
- Slower carbonation.
- Concreting at higher temperatures.
- Durability.
- Saving moulds.

PACKING

- 50 kg plastic cans, 1 m³ containers

STORAGE

- Store the product in tightly closed packaging at temperatures between +5°C and +35°C. Protect from damage, freezing and direct sunlight.
- In tightly closed and undamaged packaging, the shelf life of the product is min. 2 years from the production date.
- The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

SAFETY PRECAUTIONS

General instructions for working with chemicals should be applied when working with **Cementol Hiperplast 481**:

- Eating, drinking or smoking during work is prohibited.
- After finishing work, hands should be thoroughly washed with water.

NOTE

Instructions are given on the basis of laboratory research and technical experience of the firm. Due to specific conditions and work methods, preliminary tests are advised for every type of use of **Cementol Hiperplast 481** alone or combined with other admixtures. Special care should be taken in preliminary tests and, additionally, consultation with our technical service is recommended when using **Cementol Hiperplast 481** for the preparation of self-compacting concrete (SCC). Since we cannot influence the course of work, we cannot be held responsible for its quality.

Cementol Hiperplast 481 – superplasticizer meets the EN 934-1 and EN 934-2 standards requirements.