



CEMENTOL®

ZETA_{conc.}, ZETA P_{conc.}, ZETA T_{conc.}

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



Viaduct Baba, Trojane.

FIELD OF APPLICATION

The products are used for general improvement of concrete quality. An increase in the strength of concrete is obtained by adding a superplasticizer and simultaneously lowering the water-cement ratio. The reduction of mixing water varies up to 30%, depending on the dosage of the cement, water-cement ratio, type of cement and dosage of superplasticizers. Workability, placeability and pumpability are improved by adding a superplasticizer without lowering the water-cement ratio.

Cementol Zeta_{conc.}: used for all types of high-quality concretes.

Cementol Zeta P_{conc.}: used for pre-cast concrete - enables higher initial strengths of concrete.

Cementol Zeta T_{conc.}: increases workability time and setting time of concrete, therefore it is recommended for transport and pumpable concretes, as well as for concreting at higher temperatures.

ACTION

Cement particles adsorb the superplasticizer and take its charge. This way, wetting is increased, friction inside the material is reduced and better workability of the cement paste and fresh concrete is obtained. Adhesion to the reinforcement is improved, resistance and durability of hardened concrete are increased. A notable improvement of frost resistance can be achieved if air-entraining admixtures such as **Cementol Eta S** or **Cementol Eta S1** are used together with the superplasticizer.

DOSAGE AND INSTRUCTIONS FOR USE

- The dosage of superplasticizers is expressed in percents according to the weight of cement. It depends on the water-cement ratio and the desired consistency of concrete:

Cementol Zeta_{conc.}:	0,5 – 1,5 % (0,5 to 1,5 kg per 100 kg of cement).
Cementol Zeta P_{conc.}:	0,5 – 1,5 % (0,5 to 1,5 kg per 100 kg of cement).
Cementol Zeta T_{conc.}:	0,5 – 1,5 % (0,5 to 1,5 kg per 100 kg of cement).
- Superplasticizers can be added to the concrete mixture either diluted with mixing water or, preferably, applied directly onto freshly prepared concrete mixture in concentrated form. In the second case, concrete has to be mixed for additional 4 – 5 minutes.
- If concrete cannot be placed before losing its required consistency, the consistency can be increased by adding more superplasticizer. This will not reduce the quality of concrete. The added quantity of superplasticizer should not exceed 3 %, unless preliminary tests for this purpose have been done.

Warning

Superplasticizers **Cementol Zeta_{conc.} / Zeta P_{conc.} / Zeta T_{conc.}** are incompatible with **Cementol Zeta SUPER S / Zeta PLUS** superplasticizers.

PACKING

- 60 kg plastic cans, 1m³ containers

CEMENTOLI®
ZETA-conc., ZETA P-conc., ZETA T-conc.
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ACCORDANCE WITH THE SIST EN 934-2 STANDARD

Property	Declared values with acceptable deviation		
	Zeta-conc.	Zeta P-conc.	Zeta T-conc.
Appearance	Dark brown liquid	Dark brown liquid	Dark brown liquid
Relative density, 20°C	(1,18 ± 0,03) kg/dm ³	(1,18 ± 0,03) kg/dm ³	(1,18 ± 0,03) kg/dm ³
Conventional dry material content	(36,0 ± 1,8) %	(36,0 ± 1,8) %	(36,0 ± 1,8) %
pH	9 ± 1	6 ± 1	9,5 ± 1
Water soluble chloride content(Cl ⁻)	Chloride free	Chloride free	Chloride free
Alkali content (Na ₂ O equivalent)	< 8,0 %	< 8,0 %	< 8,0 %

ADVANTAGES

Zeta-conc.

- Easier and faster placing
- Energy saving
- Higher final strength
- Improved watertightness

Durability Zeta P-conc.

- Easier and faster placing
- Energy saving
- Higher initial strength
- Higher final strength
- Improved watertightness
- Shorter hardening periods at normal temperatures and steam curing

Durability Zeta T-conc.

- Increased workability time
- Energy saving
- Easier and faster placing and pumping
- Increased setting time
- Improved watertightness
- Concreting at higher temperatures
- Higher final strength
- Durability

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

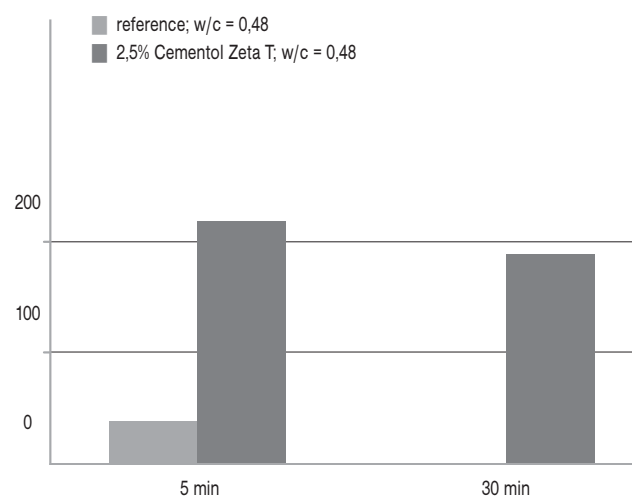
General instructions for working with chemicals should be observed when working with **Cementol Zeta-conc. / Zeta P-conc. / Zeta T-conc.:**

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

Cementol Zeta T – superplasticizer

Effect on concrete workability at 20°C with unchanged water-cement ratio

Retention of consistence (mm)



- Cement: CEM I 42,5R
 - Cement close: 350 kg/m³
 - Aggregate: 0-31 mm

NOTE

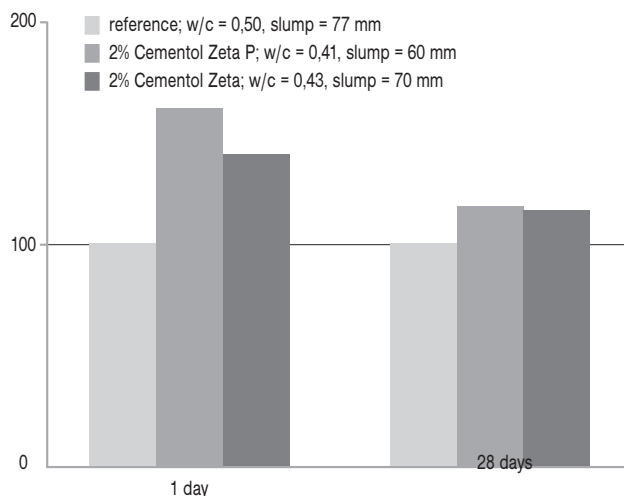
Instructions are given on the basis of examinations and technical experience of the firm. Due to specific conditions and work methods, preliminary tests are advised for every type of use. Since we cannot influence the course of work, we cannot be held responsible for its quality.

Cementol Zeta-conc. / Zeta P-conc. / Zeta T-conc. – superplasticizers meet the SIST EN 934-2 standard requirements.

Cementol Zeta and Cementol Zeta P – superplasticizers

Effect on relative increase of compressive strength of concrete at 20°C with unchanged consistency

Compressive strength I (%)



- Cement: CEM I 42,5R
 - Cement close: 350 kg/m³
 - Aggregate: 0-31 mm