



CONSTRUCTION CHEMICALS TECHNOLOGIES

VIMATOL®-SPL

*Water reducer of high effectiveness /
Concrete superplasticiser**

Properties

VIMATOL-SPL is a liquid additive that acts as high level water reducer or concrete superplasticiser. The first action is referred to the worksite and the second to ready-mixed concrete. The usage of the material brings significant improvements as much to the fresh as to the hardened concrete.

- Acts in a positive manner in the cement hydration and therefore in its effectiveness as concrete's bonding material.
- Increases spectacularly fresh concrete's plasticity and homogeneity, preventing from its components separation.
- Pumping and workability are being significantly improved and that affects positively condensation.
- Addition of **VIMATOL-SPL** allows significant reduction of mixing water for stable workability.

The above improvements of fresh concrete properties brought about by **VIMATOL-SPL** also have a positive effect on hardened concrete:

- Reduction of cracking due to shrinkage setting
- Reduction of porosity and therefore of water absorbency
- Increase of mechanical strengths and specifically of initial strength after 1 day

Applications

VIMATOL-SPL is a significant aid in preparing high-strength concrete, building with concrete with dense reinforcement and thin sections, high requirement fair-faced concrete, and in general where low ratio W/C (Water/Cement) like in cases of concrete of reduced water permeability as well as setting in the sea.

*In accordance with the standard EN 934-2:2001, Table 3.1 & Table 3.2. The conformation was certified by ELOT with Certification No 0365-CPD-070/01.12.01/1



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- **VIMATOL-SPL** is added as a high effective water reducer during concrete preparation, when allows significant decrease of mixing water while stable workability is demanded. That means reduction of water/cement ratio and therefore increases initial and final mechanical strengths. If the increase of concrete's strengths is not desirable, for cost reasons the quantity of the cement can be reduced.
- **VIMATOL-SPL** is added as superplasticiser in ready-mixed concrete, just before use, significantly improving slump slow without adding water. By this way it does not reduces the strengths but also brings relative increase due to better hydration of the cement.

In case of ready-mixed concrete, mixing in the truck mixer (drum) should last 4-5 minutes in high rotations (8-12 rounds per minute) so as to achieve homogeneity.

Technical Characteristics

Colour: dark brown Density: 1,20-1,24 kg/L pH: $\leq 9,2$
Conciseness in water-soluble chlorine: free of chlorine
Conciseness in alkali: $\leq 6,5\%$ by weight

Dosage

Permissible dosage: 0.6 – 0.8% by cement weight
Recommended dosage: 0.7% by cement weight

In order to find the best dosage in each case, some test mixtures are required. The respective concrete compositions should be made with the materials and ratios to be used on site, as the chemical action of the additive is affected by the properties and the ratios of the other concrete components.

Effectiveness

Indicatively the effectiveness of **VIMATOL-SPL**, so that the user can be directed in the determination of the advisable dosage, is summarized in the followings:

Water Reducer of high effectiveness:

For all the field of the allowed dosage, with reduction of mixture water by 13% until 15%, the increase of compressive strength exceeds by far the requirements of the standard ELOT EN 934-2. The early strength after 1 day presents increases over 70% (Requirement of Table 3.1: $\geq 140\%$) though the strength after 28 days exceeds 140% (Requirement of Table 3.1: $\geq 115\%$).



Superplasticiser:

The requirement of the standard 934-2, Table 3.2 for superplasticisers is being covered for the down limit of the permissible dosage (increase of slump slow at 12 cm) though for the upper limit 20% breakthrough is being achieved. Also the time progress of the plasticizing action is very satisfactory: after 30 minutes the slump flow decreases by 40% but the rate is 4 to 5 times more than the allowed one. The compression strength after 28 days does not decrease, though the allowed decrease is 10%.

Storage

The life span of **VIMATOL-SPL** reaches the 18 months in the initial closed packing in temperature between + 5⁰C and + 35⁰C. The material must be protected from direct solar radiation and frost.

General Remarks

- **VIMATOL-SPL** is suitable for all kinds of Portland cement.
- Overdosage may cause concrete setting retardation, this however will not reduce concrete strengths
- Must be protected against frost. If frozen, return it to a temperature over +5^o C and stir so as to achieve homogeneity.

! Concrete additives improve the properties of concrete significantly. However, this does not imply that concrete technology regulations should not be strictly applied.