



VIMAPROOF®-C

**Concrete mass waterproofing
Water resisting admixture***

Properties

VIMAPROOF-C is a liquid additive that waterproofs the mass of concrete's cement pulp.

It reacts chemical with lime compounds that result from the hydration of cement and creates salts that on one side block the capillary pores and on the other develop water repellent forces between cement mortar and water (hydrophobia).

An important property of **VIMAPROOF - C** is that, contrary to other additives of his category, do not bring reduction of final strengths of concrete. (According to the table 9 of standard ELOT EN 934-2 is allowed reduction of compression strength up to 15%).

Applications

VIMAPROOF - C is used for the improvement of concrete from a water absorbability point of view but also water permeability in cases of foundations, basement walls, water tanks, swimming-pools, shafts, biological cleanings, tunnels etc. It can be added either during concrete preparation or before the setting in the ready concrete.

- The waterproofing of mass of concrete eliminates the danger of damage from frost and prevents the shaping of stains from creation of salts.
 - In highway engineering projects as bridges, ramps etc. increases considerably the resistance of concrete in the attack of salts that are used as anti freezers.
 - The creation of chemical compounds that block the pores do not in any case prevent the breathing of the construction elements.
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- In accordance with the standard ELOT EN 934-2:2001, Table 9. The conformation was certified by ELOT with Certification No 0365-CPD-070/01.12.01/1



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Technical Characteristics

Colour: white Density: 1,00 kg/l pH: ≤ 10,1
Conciseness in water-soluble chlorine: free of chlorine
Conciseness in alkali: ≤ 0,2% by weight

Dosage

Permissible dosage: 1.0 – 1.4% by cement weight
Recommended dosage: 1.2 % by cement weight

Effectiveness

For all the field of the allowed dosage, the water absorbability of cement mortar is improved after 7 days at 60% until 70% (requirements of standard ELOT EN 934-2: >50%) while after 90 days at 45% till 60% (requirements of standard ELOT EN 934-2: >40%)

Compatibility

VIMAPROOF - C can be combined, aiming at the improvement of workability of ready concrete, with the plasticizers **VIMAROL** and **VIMATOL - PL** and the superplasticizer **VIMATOL - SPL**. In every case test mixtures are recommended for the determination of most optimal technical – economical result.

Storage

The life span of **VIMAPROOF-C** reaches the 18 months in the initial closed packing in temperature between + 5^oC and + 30^oC. The material must be protected from direct solar radiation and frost.

WATERPROOF CONCRETE

The transit of water through the concrete is a multifunctional problem that is analyzed in two actions:

- a) The capillary absorption of water that is in simple contact (without pressure) with the concrete.
- b) The penetration of water with pressure in the concrete

The standard ELOT EN 934-2:2001 requires reduction of water absorption of cement mortar ≥ 40% with the addition of a waterproofing additive.



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The German standard DIN 1048 does not allow water penetration in the concrete in-depth bigger than 5 cm, when the pressure is 0,5 N of/mm² or 5 bar for 3 24-hour periods: concrete of decreased water permeability.

The transit of water through the mass of concrete is summarized in:

- a) Capillary pores of mortar (hardened cement mass)
- b) Cavities (gaps) between aggregates and mortar as well as cracking, due to quality and processing of the fresh concrete.
- c) Cracking due to hardened concrete stresses.

It is obvious that dealing with the above cannot be done only with the use of whichever waterproofing additives. Improvement of concrete quality is required and as well as of all the Technique of building site.

The Concrete Technology Regulation prefigures for concrete of decreased water permeability: minimal content in cement 350-400 kg/m³, biggest ratio Water/Cement (W/C) 0,58 (0,50 for biggest aggregate grain 16 mm) and special aggregate curve.

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



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