



Rev 0
06/22



AETERNUM 1 SCC

High efficacy reactive formulation for concretes and mortars with high durabilityà (reactive powder concrete, rpc)



DESCRIPTION

AETERNUM 1 SCC is a new generation reactive formulation in powder adsorbed on active nanomicrosilicates that combines, to the high pozzolanic activity of the latter, an extraordinary rheology, fluidity in the absence of segregation, impermeability and considerable resistance to both mechanical compression and chemical and atmospheric aggressions and above all an extraordinary impermeability.

Suitably designed to package self-compacting concretes and mortars, especially when you have poor aggregates of fine. Also ideal for prefabrication.

FEATURES

AETERNUM 1 SCC consists of spherical particles a few hundredths of a micron size, so that its specific surface is very high: greater than 220,000 cm²/g (Blaine). Characteristic that gives it a high dispersion and reactivity on cement granules and a high ability to capture and fix calcium hydrate [Ca(OH)₂] and transform it first into a hydrated silicate and then into stable and irreversible calcium silicate.

It must be said that in all mixtures containing cement, to obtain good workability, it is necessary to use a quantity of water always higher than that necessary for the hydration of the cement, this involves in the hardened cement paste the formation of capillaries and cavities the more numerous the greater the amount of water used.

Despite its very high specific surface AETERNUM 1 SCC, having also a phase transfer inside, it guarantees, without any use of additional superfluidifiers, easily and good workable concretes, without shrinkage and with superior and durable final performance.

Given the chemical conformation of the AETERNUM 1 SCC that accelerates the hydration of the cement, it is advisable for the summer season, to make some initial qualifications.

AETERNUM 1 SCC added to the mixture at the rate of 3 – 5 % on the weight of the cement, captures and reacts with free lime, filling the voids present in the cement paste, this makes the conglomerate more compact, more waterproof and more resistant and consequently more durable over time and with better appearance.

If well designed, a concrete with AETERNUM 1 SCC turns out to have total impermeability, even to air.

This additive allows the packaging of [rheoplastic concretes and rheodynamic SCCs with very low a/c ratios.](#)

SPECIFICATIONS

Status:	Dust
Silver color	
Particle size distribution	0-30 μm
Density in pile	400-600 g/dm ³
Solubility in water	soluble
pH	6 ± 1
Specific surface	20-30 m ² /g

CE

1305
TEKNA CHEM SPA
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1305 – CPD – 1146
EN 934-2

AETERNITY 1 SCC

High efficacy water reducing concrete additive / superfluidifying T 3.1 / 3.2

Maximum chloride content 0.1%
Maximum alkali content 0.1%

Absent hazardous substances

SHEET



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1/4



MODE OF USE

AETERNUM 1 SCC finds its main applications in all quality concretes and mortars, where homogeneous concretes are required, superfluids with a very low a/c ratio, with excellent visible finishes, impermeable to external aggressive agents, with compensated shrinkage, of high resistance to bending and compression.

AETERNUM 1 SCC is used in the preparation of:

- protective executioners
- executioners for consolidation injections
- expansive plywood shrinkage grouts
- [self-compacting mortars or concretes \(SCC\)](#)
- [mortars or concretes with high mechanical strength](#)
- [mortars or concretes with high impermeability](#)
- prestressed concretes or concretes resistant to chemical aggression
- concretes for rampant formwork (slip-form);
- mortars or concretes for underwater applications especially in aggressive environments
- thixotropic mortars for restoration
- anti-shrinkage mortars, both pre-mixed and wet

However, on every occasion in which the mortar or concrete is required to perform superior performance, such as:

- [mechanical resistance](#)
- chemical resistance
- resistance to wear and cavitation
- [total impermeability, even to air](#)
- stability and cohesion
- compensated withdrawal
- [overall durability](#)

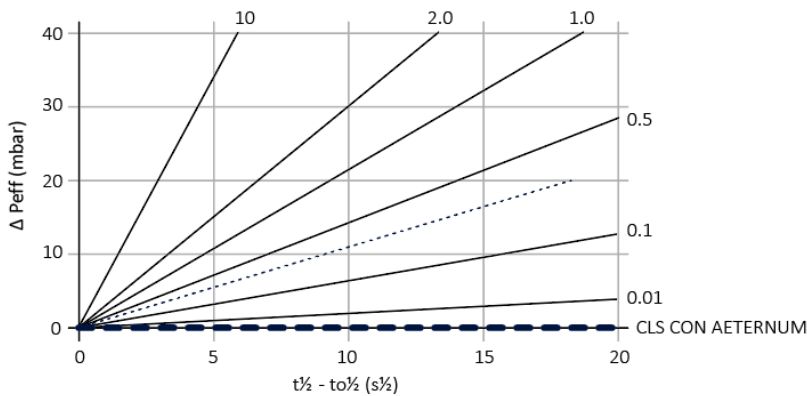
Particularly suitable for reducing the bleeding of concretes, in pumpable concretes and in concretes with high mechanical and durability characteristics; specific for concretes in which the particle size distribution has an evident lack of fine.

PECULIARITY

AETERNUM 1 SCC, despite the very small particle size:

- [it does not require](#) the simultaneous use of superfluidifiers indeed thanks to the same it is possible to have self-compacting concretes at very low dosages of water;
- [gives](#) concrete greater workability;
- [facilitates](#) pumping;
- [guarantees](#) high mechanical strength without plastic shrinkage;
- [guarantees](#) better face view and degree of finish;
- [ensures](#) waterproofing;
- [guarantees durability](#) and therefore resistance to all exposure classes.

MEASUREMENT OF CONCRETE AIR PERMEABILITY WITH AETERNUM



DOSAGGIO

The dosage of AETERNUM 1 SCC is on average from 3 – 5 % on the weight of the cement depending on the mixture to be added and the desired characteristics.

However, it is recommended as an ideal dosage 4 % on the weight of the cement.

However, dosages other than those recommended after preventive guidance tests may be used.

CONCRETE SEASONING

The reactions in the pozzolanic environment are quite long and take place in a humid environment; for this reason, a correct seasoning of the mortar or concrete is required in order to avoid too fast drying.

In this regard, it is advisable to protect the jets, during the first hardening phase, with polyethylene sheets and then apply a TEKNAPUR film on the exposed surfaces, which will avoid a rapid evaporation of the jets, allowing a correct pozzolanic reaction to them.

PACKS

Bulk in tanks

Big-bags 700 - 800 kg

9 kg bags

STORAGE

AETERNUM 1 SCC if stored in a dry place and in the original bags perfectly closed, is valid for 12 months.

The moisture eventually adsorbed by the product does not affect its effectiveness, but makes its dosage difficult and inaccurate as well as a homogeneous distribution in the mixture.

It is therefore advisable to close the bags carefully after each withdrawal.

AETERNUM 1 SCC is available in bulk, in big-bags or bags.

The bulk product is transported with the classic torpedoes and can be stored in normal cement silos and dosed with the equipment of the batching plant or with a screw system for big-bags.

WARNINGS

AETERNUM 1 is harmless on contact with the epidermis. It is easily removed with soap and water from any surface.

By inhalation it can cause a slight irritation of the upper respiratory tract so the use of the dust mask is recommended. In case of accidental loss it must be collected in the state dry and disposed of in authorized landfill.

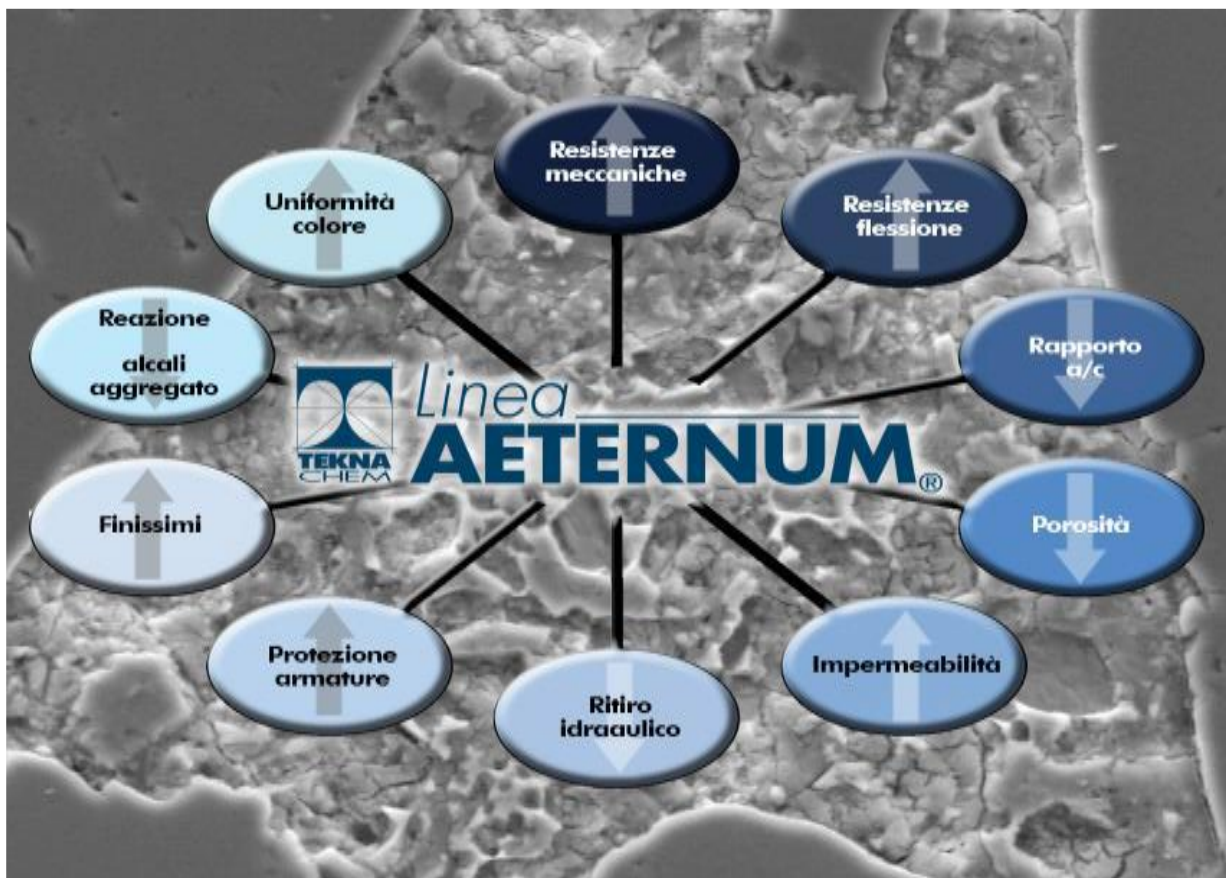
LEGAL

The information contained in this technical sheet, although representing the most advanced stage of knowledge, does not exempt the user from performing accurate preliminary tests in

AETERNUM 1 SCC



their conditions of use and operation. We therefore decline any responsibility for the improper use of the product.



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