Teknogunit Sıvı

Shotcrete Concrete Admixture, Liquid

EN 934-5

Public Pos. No: 04.613/5

Product Description

It is a liquid concrete additive accelerating setting, designed for wet and dry system shotcrete production. It can be used by adding in concrete mixture water.

Areas of Usage

- It's used in all kinds of spraying works,
- In high early strength concrete,
- In supporting surfaces in tunnels or mines,
- In rock and slope stabilization.

Features and Benefits

- The acceleration effect of TEKNOGUNIT SIVI depends on the type of cement, its dosage and age, shotcrete and surface temperature, layer thickness and spraying process. The amount of mixing water is an important effect on the acceleration effect of TEKNOGUNIT SIVI in dry shotcrete system. The following benefits feature TEKNOGUNIT SIVI as an accelerator in shotcrete.
- It reduces spill and rebound rates.
- It improves adhesion of shotcrete to rock and concrete surface, facilitating overhead applications.
- It provides better adhesion in areas with slight leakage.
- It increases water impermeability.
- Chlorine-free, it does not damage the reinforcement.

Application Instructions

When the ambient temperature is +5°C - +35°C, in areas where screed or concrete to be cast, it should be preferred.
At temperatures below +5°C; Noon hours are the best time. Additional precautions are necessary to be taken in advance to protect the surface from frost, rain, dew and rime.
At temperatures above +35°C; cool morning and evening hours are the best time. Precautions should be taken such as wetting the mold with water, moisturizing the surface and using rested cement in order to reduce the hydration temperature of the concrete, screed or plaster.
The maximum grain diameter of the aggregate used in the concrete should be between 8-16 mm. The water / binder ratio should be around 0.48. Concrete strength should be min. C 25.
The correct dosage should be determined by preliminary tests. It's normally between 3% and 7% of the binder weight. The specified amount of TEKNOGUNIT SIVI is added to the concrete through a hose by the dosing pump in wet system shotcrete application. Mixing ratios depend on the quality requirements and application method for wet system shotcrete. Setting time may vary according to variable cement types.
If it is desired to apply thicker layers with shotcrete, the shotcrete admixture should ensure that the temperature of the concrete mixture to be used is less than +15°C. Lower temperatures require that the accelerator additive be used at a higher dosage. Areas with severe water must be blocked beforehand with TEKNOPLUG. The use of TEKNOGUNIT SIVI requires technically accurate dosing, delivery and spraying technology.

It must be protected after application against adverse weather conditions such as direct sunlight, high air temperature (above +35 °C), rain and frost. Hands should be cleaned thoroughly with water and detergent before concrete or mortar is fully cured and hardened.

Application Notes / Restrictions

- During the application of the product, work clothes suitable for occupational health and safety rules should be worn and suitable glasses and mask should be used.
- It is recommended to use CEM I cement to obtain early high strength.
- In the case of concrete casting in low temperatures below +5°C, the measures recommended in the standard are required. Protective measures against frost must be taken.
- Casting pretesting concrete is recommended.
- There should be no elements in the components of the shotcrete that delay setting. The use of fly ash, set retardant additive in cement or concrete has a negative effect on the quality of shotcrete production.

Technical Data

General Information	
Color	Amber Liquid
Chemical Structure	Organic and inorganic substance mixture liquid
Density	1,40 (± 0,05) kg/lt
Packaging	1 Ton IBC
Shelf life	12 months in unopened original packaging
Set Start *	75±15 sec.
Set End *	150 ± 30 sec.
Dosage **	3% - 7%
Viscosity	500 -1200 mPa.s
Chlorine Content	< 0,1% (EN 480-10)

* The start and end times of setting may vary depending on the cement type and dosage. These values have been obtained in the laboratory environment with standard cement type.
** The appropriate dosage should be determined in advance by the tests to be performed on the cement type.

Technical data are approximate values obtained from the laboratory study of Tekno Construction Chemicals for finished products obtained at +20°C air temperature and 50% relative air humidity.