



SHOTCRETE ANTIFREEZE AND RAPID SET ACCELERATOR

Description:

ANTIFREEZE AF 800 is a specially developed antifreeze and rapid setting accelerator for shotcrete applications in cold weather. It provides very fast setting and high early strength development.

Technical Properties:

Chemical Content	Special compnent
Appearance	Liquid
Color	Light yellow
pH	6±1
Density (20 °C)	1.25 ± 0,02 g/cm ³
Chloride Content (%)	< 0.1
Alkaline Content (%)	< 5
Freezing	-15 °C

Advantage:

- Extremely rapid setting for shotcrete applications.
- High early strength development.
- Improves adhesion in overhead and vertical spraying.
- Suitable for low-temperature tunnel works.
- Reduces rebound in sprayed concrete.
- Chloride-free system for reinforced shotcrete.

Area of Use:

- Wet-mix and dry-mix shotcrete applications.
- Tunnel linings and underground constructions.
- Mining and slope stabilization works.
- Cold weather sprayed concrete projects.
- Overhead and vertical shotcrete applications.
- Emergency repair works requiring rapid setting.
- Reinforced shotcrete structures.

Dosage:

ANTIFREEZE AF 800 is used % 3.0-6.0 of total binder. This ratio varies depending on the cement, aggregate, mineral admixtures, water components used in the concrete mix design, as well as the desired fresh and hardened concrete properties. Therefore, before determining the usage ratio, laboratory tests should be conducted according to the expected properties of fresh and hardened concrete, and the mix ratio should be determined based on these tests. When required, the Polystar Co. Technical Support Unit should be consulted.

Method of Application:

ANTIFREEZE AF 800 is designed for shotcrete applications and should be dosed through a separate accelerator dosing system at the nozzle or mixing unit. Dosage must be adjusted according to required setting time and temperature conditions. Continuous monitoring of setting performance is recommended during application. Equipment must be clean and free from previous chemical residues. Avoid mixing ANTIFREEZE AF 800 directly with other admixtures before dosing. Conduct preliminary site trials to optimize dosage and performance.

Standards: - EN 934-2 Table 6 - ASTM C 494 Type C

Compatibility:

ANTIFREEZE AF 800 admixture is compatible with other POLYSTAR plasticizer admixtures used in the same concrete mix.

Precautions in Application:

- Designed specifically for shotcrete; not suitable for conventional ready-mix concrete.
- Dosage must be adjusted based on temperature and desired setting time.
- Excess dosage may cause flash setting or reduced long-term strength.
- Proper calibration of dosing equipment is essential.



Cleaning:

ANTIFREEZE AF 800 admixture can be washed with fresh cold water and should not be allowed enter sewers or open bodies of water.

Packing:

- 30 kg plastic drum
- 250 kg drum
- 1000 kg container Bulk

Storage and Shelf Life:

Must be stored at temperatures between +5°C and +45°C. Under proper storing conditions, the product's shelf life is 24 months from production date if kept in original packaging unopened and undamaged. Packaged products must be shaken before use.

Security Information:

Use protective clothes, gloves, glasses and mask compatible with Health and Safety regulations during the application. It should not contact skin and eyes. In case it contacts to skin and eyes, rinse it with water and if swallowed ask for medical help. Food and beverage should not be allowed in the application area. It should be stored at the reach out of the children. The Material Safety Data Sheet (MSDS) should be read for detailed information.

