



ANTIFREEZE AND ACCELERATING CONCRETE ADMIXTURE

Description:

ANTIFREEZE AF 500 is a chloride-free antifreeze and set accelerating concrete admixture designed for cold weather concreting between 0 °C and -5 °C. It reduces freezing risk and promotes early strength development.

Technical Properties:

| | |
|-----------------------------|-------------------------------|
| Chemical Content | Special component |
| Appearance | Liquid |
| Color | Light yellow |
| pH | 7±1 |
| Density (20 °C) | 1.18 ± 0,02 g/cm ³ |
| Chloride Content (%) | < 0.1 |
| Alkaline Content (%) | < 5 |
| Freezing | -15 °C |

Advantage:

- Cost-effective solution for standard winter concreting.
- Reduces risk of early frost damage.
- Improves early strength development.
- Shortens initial setting time under cold conditions.
- Chloride-free and safe for reinforced concrete.
- Easy to dose and compatible with most conventional admixtures.

Area of Use:

- Ready-mix concrete production in winter conditions.
- On-site concrete casting between 0 °C and -5 °C.
- Foundations and slabs exposed to mild frost risk.
- Residential and commercial construction projects.
- Mass concrete where moderate acceleration is sufficient.
- Reinforced concrete structures requiring chloride-free protection.

Dosage:

ANTIFREEZE AF 500 is used % 1,0-2.0 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 500 should be added to the mixing water or directly into the concrete mixer during batching. Ensure uniform distribution by mixing for at least 60–90 seconds after addition. Do not add to dry cement or aggregates. In severe cold conditions, additional protective measures (heated water, insulated formwork, curing blankets) are recommended. Compatibility with other admixtures should be verified by preliminary trials.

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

Compatibility:

ANTIFREEZE AF 500 admixture is compatible with other POLYSTAR plasticizer admixtures used in the same concrete mix.

Precautions in Application:

- Antifreeze admixtures do not eliminate the need for proper cold weather concreting practices.
- Fresh concrete temperature should be maintained above +5 °C whenever possible.
- Keep formwork and reinforcement free from water, snow and ice.
- Concrete must be protected against early freezing with insulation or curing blankets.
- Do not exceed recommended dosage without laboratory verification.
- Always perform trial mixes before large-scale application.
- Compatibility with cement type and other admixtures must be tested.
- Overdosing may cause excessive acceleration, reduced workability or cracking risk.
- Product performance depends on cement composition and environmental conditions.

**Cleaning:**

ANTIFREEZE AF 500 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.

