



HIGH PERFORMANCE ANTIFREEZE AND ACCELERATING CONCRETE ADMIXTURE

Description:

ANTIFREEZE AF700 is a multifunctional concrete admixture combining polycarboxylate ether (PCE) based high-range water reduction with antifreeze technology. It ensures high workability and early strength development under cold weather conditions.

Technical Properties:

Chemical Content	Polycarboxylate ether
Appearance	Liquid
Color	Brown
pH	6±1
Density (20 °C)	1.08 ± 0,02 g/cm ³
Chloride Content (%)	< 0.1
Alkaline Content (%)	< 5
Freezing	-15 °C

Advantage:

- Combines antifreeze protection and high-range water reduction
- 15–25 % water reduction capability.
- Maintains workability in cold weather.
- Enhances early and ultimate compressive strength.
- Reduces need for multiple admixtures.
- Improves concrete density and durability.
- Compatible with most cement types.

Area of Use:

- Ready-mix concrete plants operating in winter conditions.
- Pumped concrete requiring high workability.
- High-strength concrete in cold weather.
- Dense and durable concrete production.
- Infrastructure projects (bridges, tunnels, retaining walls).
- Precast and in-situ structural concrete.
- Applications where both water reduction and antifreeze protection are required.

Dosage: ANTIFREEZE AF700 is used % 0.8-2.0 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 AF700 should be added with the mixing water or into fresh concrete during batching. Due to its superplasticizing effect, slump adjustment can be made by fine-tuning dosage. Do not combine with other high-range water reducers without compatibility testing. Ensure proper mixing time to achieve maximum dispersion efficiency. Maintain concrete temperature above recommended limits during placement. Trial applications are recommended before large-scale use.

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

Compatibility: ANTIFREEZE AF700 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 AF700 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.

