

Tekno AF 20

Cold Weather Antifreeze Concrete Admixture



ASTM C 494-81 Tip C

Public Pos. No: 04.613/7

Product Description

Chlorine-free plaster, self levelling and concrete admixture which provides high quality concrete casting by set accelerating in low temperature weather conditions.

Areas of Usage

- It's used in all kinds of concrete and mortar works in cold weather conditions,
- Where concrete and mortar are wanted to be set,
- In cases where light frost effects continue throughout the day,
- In cases of frost expectation during the night.

Features and Benefits

- As a result of reactions of cement in fresh concrete, it accelerates the initial formation of aluminate and silicate gels.
- It accelerates the hydration of fresh concrete and enables fast concrete to harden and gain strength. Therefore it helps to cast concrete in cold weather conditions.
- Antifreeze shortens the hardening period of cement like other alkali additives, increases the strength of concrete in first hours and days.
- Since it doesn't contain chlorine, it has no corrosion affect on the reinforcement.
- Thanks to a fast setting, it saves time in places where it is thought to take mould early and also provides savings because it reduces the application temperature and duration.
- Increases the resistance against frost and increase the strength of concrete.
- Allows to overcome the limit of concrete strength (4-5 N/mm²) required for frost resistance and shortens this period.

Application Instructions

Surface Preparation: It should be preferred when screed, plaster or concrete is to be cast where the ambient temperature is highest. Noon hours are the best time to do this application. Additional precautions are necessary to be taken in advance to protect the surface from frost, rain, dew and rime.

TEKNO AF 20 is used by adding to the product mixture water in concrete or to low-mix fresh concrete by mixing directly. When added directly to fresh concrete, the mixing duration is increased by 3 minutes at high speed to ensure homogeneity. Before concrete is emptied, it should be visually checked that it has a homogeneous consistency.

In the production of screeds or plaster, 50 kg of cement for about 150 kg of sand is prepared as a dry mixture. For 50 kg of cement, 1 kg of TEKNO AF 20 will be sufficient to be used. (2% of binder) TEKNO AF 20 is added to approximately 5 kg of clear water and the dry mixture is opened with this water. The screed is added to fresh, clear water until it reaches the consistency of the desired workability.

It is recommended to use TEKNOFLOW 100 together by hand or mortar machines to increase the flow while screeding.

Application Notes / Restrictions

- During the application of the product, work clothes suitable for occupational health and safety rules should be worn. Suitable glasses and mask should be used.
- The mold and reinforcement must be protected against water, snow and ice, and if necessary, must be brought to a minimum 0°C with preheating.

- If possible, wooden molds must be used instead of steel molds.
- Cements with high clinker ratio should be preferred instead of using blended cement.
- Molds should be insulated against temperature losses.
- The fresh concrete temperature should be at least 5-15°C depending on the ambient temperature and the thickness of the concrete casting.
- The loss of temperature and moisture should be avoided by covering or isolating the concrete and the concrete must be protected very tightly until reaching the strength limit of 4-5 N/mm²
- If TEKNO AF 20 is frozen in barrel, it should be thawed and mixed in a place with high ambient temperature. It should not be contacted directly with fire. At the end of thaw, the product features do not change.
- In using TEKNO AF 20, local materials should be tried and appropriate mix of concrete should be taken into consideration
- TEKNO AF 20 should not be added to dry cement.
- TEKNO AF 20 should be added with mixture water or added at the end of the mixing process
- Before use, conformity tests should be performed.
- Hands should be cleaned thoroughly with water and detergent before concrete or mortar is fully cured and hardened.

Technical Data

General Information	
Chemical Structure	Inorganic Salt
Color	Clear Liquid
Density	1,20 (± 0,05) kg/lt
Packaging	35 kg bins
Consumption	1 - 3 % of the weight of the cement.
Shelf Life	12 months in unopened original packaging
Solids (%)	20 (± 2,00)
PH	6-10
Chloride Amount	< 0.1 % Chlorine free

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.

