



# KEM CRETESET 100 AF

## Alkali Free, Liquid High Performance Set Accelerator for Wet-mix Sprayed Concrete

Ref : CA/SA-V2-1215

### Description

KEM CRETESET 100 AF is a high performance alkali-free set accelerator for sprayed concrete. It is a liquid admixture whose dosage can be varied to the desired setting and hardening times.

### Uses

KEM CRETESET 100 AF is suitable for all applications where high early strength, good final strength and thick layers are required:

- Temporary and permanent rock support in tunnels
- Rock support in mining In poor ground conditions
- Slope stabilization
- Also suitable for acceleration of cementitious grouts, such as used in TBM tunnel linings, cement ground injection and foam concrete backfill operations

### Advantages

KEM CRETESET 100 AF is the ideally suited accelerator for wet mix sprayed concrete for rock support because:

- The quick setting property allows rapid work progress and the ability to construct thick sprayed concrete linings via layered application during one construction sequence.
- The unique product formulation provides continual early-age strength development whilst also achieving excellent long-term strength and durability.
- KEM CRETESET 100 AF is a liquid product and thus provides easy handling, as well as facilitating accurate addition to the concrete.
- Very low dust production and therefore a good working environment.

- Since the product is non-aggressive, it provides improved working safety, reduced environmental impact and lower handling costs.

### Typical Properties

**Appearance** : Off white coloured liquid

**Specific gravity @ 25<sup>0</sup> C** : 1.40 ± 0.02

**pH** : 0.00—2.00

The following data shall be considered as a performance guide only:

Initial Set	Final Set	24 Hour Strength	Rating
2 min.	6 - 8 min.	18 - 20 Mpa	Good
5 min.	8 - 12 min.	12 - 15 Mpa	Ok
> 10 min.	> 15 min.	> 10 Mpa	Poor

**Remark:** If the setting times are poor, the 24 hour strength usually remains good.

### Standards

ASTM C1141

### Direction for use

The substrate must be clean and free from loose particles and preferably damp.

It is recommended to use only fresh cement as the age of the cement may affect setting characteristics.

The setting time and other properties of sprayed concrete depend on the type of cement used. Generally KEM CRETESET 100 AF gives best results with OPC. KEM CRETESET 100 AF also works with blended cement, fly ash & GGBS. It is highly recommended to conduct preliminary trials to check the setting and 24 hours compressive strength of the cement being used.

**Mixing:** When KEM CRETESET 100 AF is used for wet mix spraying, the w/c ratio should be below 0.5 and preferably < 0.45. When targeting extremely high early strength, 0.40 or lower. The lower w/ b ratios provides faster setting, higher early strength, better durability, lower accelerator dosage and thicker layers can be applied over head.



## Dosage

The dosage of KEM CRETESET 100 AF depends on ambient temperature and temperature of concrete ingredients and substrate. The type and reactivity of cement also influences the dosage. Depending on requirements of setting time & early strength KEM CRETESET 100 AF may normally be dosed between 4 – 8 % on the binder weight. Over dosing (generally more than 10 %) may result in decrease final strength

**Pumps:** We recommend following dosing pump types – Rotor-stator pumps and Peristaltic pumps (Bredel). Do not use with Piston pumps, all pumps with seat valve system & pressure tanks.

**Cleaning of dosing pump:** Prior to the use of KEM CRETESET 100 AF, the dosing pump and other parts of the system must be thoroughly cleaned with plenty of water. Failure to do so provokes blockages in the dosing system. Make sure that all operators involved in testing and application are fully informed.

## Compatibility

Do not mix KEM CRETESET 100 AF with any other type of accelerator, as this could cause immediate clogging of dosing pumps and hoses. Do not interchange accelerators in the storage tanks and on the spraying machines unless the previous accelerator has been completely flushed out and the conveying system is thoroughly washed.

## Packaging

It is supplied in 250 kg drums & 1000 kg containers.

## Storage and Shelf life

KEM CRETESET 100 AF must be stored at minimum +5°C and maximum +30°C. It has to be kept in closed containers made of plastic, glass fibre plastic and stainless steel. KEM CRETESET 100 AF must not be stored in normal steel containers as the pH can cause corrosion that might affect the performance of the product.

## Technical Service

Chembond has established itself in various fields on the basis of its dependable technical service. For this purpose, we maintain a well equipped laboratory for research & quality assurance of all products. Our experienced personnel are always on call and would always be available for product demonstrations and product performance monitoring.

## Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. For further information refer to the material safety data sheet.

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