

### LOW VISCOUS ALKALIFREE SHOTCRETE LIQUID

#### Description

SPRAYCON AF(LV) is an low viscous alkali-free shotcrete accelerating admixture. It is a liquid admixture whose dosage can be varied to the desired setting and hardening times.

#### Uses

SPRAYCON AF(LV) is a liquid high performance set accelerator for wet-mix sprayed concrete, which is suitable for the following main application:

- Securing of rock in tunnel construction
- Rock and slope stabilization
- High quality shotcrete for general construction work

#### Advantages

SPRAYCON AF(LV) 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.
- Suitable to use at sub zero temperature.
- SPRAYCON AF(LV) 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.

#### Technical Data

Appearance : Turbid Liquid

Relative density :  $1.37 \pm 0.04$  at 25°C

Chloride content : Nil to BS 5075 Part I

#### Standard Compliance

SPRAYCON AF(LV) confirms to ASTM C 1141 Type II Grade I Class A, also meets the requirements of ACI 506-56

#### Specification Clauses

The alkali-free accelerator for shotcrete shall be SPRAYCON AF(LV), a non-caustic, high solids (> 48%) formulation.

The product shall have density in excess of 1.35 and shall be capable of enhancing performance of wet shotcrete to less than 15% rebound and capable to spray >150mm thickness in single operation. The product shall enable achieving high early strengths (> 12 MPa at 24 hours) and quick final set (with in < 15 minutes).

#### Dosage

The dosage of SPRAYCON AF(LV) depends on the temperature conditions, reactivity of cement used and on required thickness of layers, setting time and early strength development. The consumption of SPRAYCON AF(LV) is normally in the range of 3 to 10% of binder weight.

Overdosing (>10%) may result in decreased final strengths.

#### Direction of 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 can have a negative influence on the setting characteristics of the mix.

SPRAYCON AF(LV) can be sensitive to the type of cement. With some cements the setting characteristics can be too slow. We recommend the use of Portland cements (PC / HPC) which normally give faster setting than blended or sulphate resistant cement types. However, SPRAYCON AF(LV) also works well with composite cement types (blended cements, fly-ash / slag). In all cases, it is strongly recommended to do preliminary tests to check the setting and the 24 hours strength of the cements planned for use in a project.

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#### Mixing

When SPRAYCON AF(LV) 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/c+b ratios provide faster setting, higher early strength, better durability, lower accelerator dosage and thicker layers can be applied overhead.

#### Technical support

FIRST CHOICE SPECIALITY CHEMICALS provides technical advisory services for on-site assistance and guidance on mix design, optimum dosage evaluation of trials.

#### Packaging

SPRAYCON AF(LV) must be stored in its original container as supplied.

6 months from date of production if stored in undamaged and unopened, original sealed containers, protected from direct sunlight and frost, at temperatures between +5°C and +30°C.

Opened containers must be used as quickly as possible. Failure to comply with the recommended storage conditions may result in premature deterioration of. For specific storage advice consult our local FIRST CHOICE SPECIALITY CHEMICALS representative.

#### Safety precautions

SPRAYCON AF(LV) does not fall into the hazard classifications. However, it should not be swallowed or allowed to come into contact with the skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with the eyes it shall be rinsed immediately with plenty of water and medical advice sought immediately. If swallowed, medical attention shall be sought immediately - Vomiting should not be induced.

#### Fire

SPRAYCON AF(LV) is water based and non-flammable.

#### Cleaning

Prior to the use of SPRAYCON AF(LV), 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.

#### Note

All Technical Data Sheets of FIRST CHOICE SPECIALITY CHEMICALS are updated on regular basis; it is the user's responsibility, to obtain the most recent issue. Field services where provided, does not constitute supervisory responsibility, for additional information contact our local representative.

#### Disclaimer

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