



## VITCON 9013 AFS

Alkali Free Accelerator for Dry Shotcrete

### DESCRIPTION

VITCON 9013 AFS is a high performance, alkali free powder accelerator for dry shotcrete mix. This product is formulated to increase the rate of hardening of cement and concrete mixes and this can be controlled by varying the dosage to the sprayed concrete.

VITCON 9013 AFS helps to improve productivity by shortening the time between each subsequent layer of sprayed concrete.

### TECHNICAL DATA

Form	Powder
Colour	Off White
pH Value (1:1 water solution)	$3 \pm 1$
Chloride Content	<0.1%
Alkali Content	<1%

### DOSAGE / USAGE

The dosage of VITCON 9013 AFS also depends on the water added, temperature conditions, cement reactivity, setting time and early strength development. The dosage is normally in the range of 4 – 8 % by weight of cement.

The dry mix should be thorough and uniform before addition of water to the system at the nozzle point.

Initial Setting Time	< 6 min.
Final Setting Time	< 40 min.

The above results are variable with cement type, grade, aggregate quality and climatic conditions and also with dosage of VITCON 9013 AFS. The site trials are advisory to find out optimum dosage with desired performance. VITCON 9013 AFS is compatible with our VITCON range of superplasticiser, which is added to the shotcrete for slump retention.



## **ADVANTAGES**

- Alkali free
- Reduces rebound losses and wastage
- Increases productivity of the shotcrete operation
- Good early strength development
- Fast setting time
- Provides an improved working environment

## **APPLICATIONS**

- Rock support in tunnels and mines
- Slope stabilization
- Tunnel linings
- Soil stabilization
- Structural concrete repair

## **APPLICATION METHODOLOGY**

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

VITCON 9013 is added to dry shotcrete mix containing cement and aggregates as per grading and strength required. Water is added at the nozzle point ensuring a cohesive mix formation.

The increased cohesiveness reduces rebound losses and ensures faster setting.

Moreover, VITCON 9013 AFS enhances the compressive strength of hardened shotcrete and improves durability.

It is recommended to only use fresh cement as the age of the cement can have a negative influence on the setting characteristics of the mix.

VITCON 9013 AFS is sensitive to the type of cement. With some cements the obtained setting characteristics can be too slow. This sensitivity can be compensated by reducing the water content. We recommended the use of Portland cements, which normally give faster setting than blended or sulphate resistant cement types.

In any case, it is strongly recommended to carry out preliminary tests to check the setting and the 24 hours strength characteristics of the cements planned for use in a project. All testing should be aligned to EFNARC European Specification for Sprayed Concrete (1996) to evaluate the best performing mix design against economical considerations.



## **HEALTH & SAFETY**

VITCON 9013AFS is non-toxic, non flammable and non hazardous. However any contact with human body must we washed with plenty of water.

## **PACKAGING**

VITCON 9013 AFS is supplied in 25 kg bags. Packaging size may vary subject to local regulations and requirements.

## **STORAGE**

Must be stored in original packaging at ambient temperature, dry place under shed. The bags must be protected from direct sunlight.

## **SHELF LIFE**

If stored in tightly closed original bags under the above conditions, it has a shelf life of 12 months.