Mapequick AL 15 is a sodium aluminate-based liquid accelerator additive for shotcrete.

WHERE TO USE
Mapequick AL 15 is suitable for application with wet-mix spraying systems. It gives immediate acceleration properties to the shotcrete, while guaranteeing self-bearing after only a very few seconds.

Mapequick AL 15 is also particularly suitable for clogging and evening out spaces where steel arch reinforcement is used during excavation work (e.g. ribbing).

The presence of damp surfaces and/or running water does not represent an obstacle to the regular application of the concrete accelerated with Mapequick AL 15.

Some application examples
• Securing tunnels, mine shafts, wells, dams etc. during boring operations;
• Levelling layers for smoothing and finishing off shotcrete;
• For non-confining structural coverings in form boxes, canals, basins etc.
• Consolidation of rock and cliff-faces.

TECHNICAL CHARACTERISTICS
Mapequick AL 15 is a transparent, odourless sodium aluminate solution to be added in the spraying nozzle during the spraying phase of the concrete.

The acceleration of the setting time and the development of mechanical performance vary according to the dosage of the admixture, the type and amount of cement, the ageing of the cement and the water/cement or water/binder ratio used. The temperature of the shotcrete sprayed on and the rock which makes up the substrate also influence the rate of setting and early performance.

As far as the water/cement or water/binder (cement-fly ash, silica fume or blast furnace slag, etc.) ratio of the shotcrete is concerned, it must be pointed out that it must be less than 0.5 in order to promote durability and final mechanical performance. For this reason, the addition of a superplasticizing admixture is absolutely essential.

Mapequick AL 15 admixture is added into the nozzle during spraying at a rate of between 2% and 6% in weight of the cement or of all the binding elements.

COMPATIBILITY WITH OTHER PRODUCTS
Mapequick AL 15 is compatible with all the superplasticizers in the Mapefluid and Dynamon ranges which enable the water/cement or water/binder ratio to be reduced, increases their
fluidity and reduces their slump loss. The recommended dosage is between 2% and 6% in weight of the cement, according to the setting time and speed of development of the mechanical strength desired.

**RECOMMENDATIONS**
- Do not use Mapequick AL 15 with ordinary concrete.
- Do not add Mapequick AL 15 directly into the cement mixer.

**HOW TO USE**
**Example of shotcrete**
- 380-500 kg/m³ of cement (type and dosage to be determined according to performance requirements).
- If necessary, the addition of 3-8% of the weight of cement of fly ash or silica fume.
- Aggregate with a maximum diameter of approximately 8 mm.

- Superplasticizing admixture at a dosage of 1-1.5% in volume of the weight of the cement to guarantee a low water/cement or water/binder ratio.
- It is recommended to use Mapequick AL 15 setting accelerator in the nozzle at a temperature of at least +20°C.

If the waiting time before use is more than 1 hour and/or if the temperature is higher than +25°C, a superplasticizing acrylic-based admixture from the Dynamom System range may be added.

The pozzolanic-action component Mapeplast SF may also be used to improve the rheological properties, thixotropy, impermeability and resistance to chemical attack.

**LABORATORY TESTING**
Our laboratory is available to evaluate the compatibility and dosage of Mapequick AL 15 with the types of fluidity and reduces their slump loss. The recommended dosage is between 2% and 6% in weight of the cement, according to the setting time and speed of development of the mechanical strength desired.

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**LABORATORY TESTING**
Our laboratory is available to evaluate the compatibility and dosage of Mapequick AL 15 with the types of
cement available on site. To optimise the use of Mapequick AL 15, please contact the Underground Technology Team in order to verify and perfect the characteristics of the concrete used, according to local application conditions.

**CONSUMPTION**
Between 2 and 6 kg per 100 kg of cement.

**PACKAGING**
Mapequick AL 15 is supplied in 280 kg (200 l) drums and 1400 kg (1000 l) tanks. Bulk quantities are also available upon request.

**STORAGE**
Store the product in closed containers and protect from freezing and exposure to direct sunlight.

**SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION**
Mapequick AL 15 is corrosive and provokes burns and serious damage to the eyes. Always wear suitable protective gloves, goggles and clothing. If the product comes into contact with the skin or eyes, rinse immediately with water and seek medical advice.

**PRODUCT FOR PROFESSIONALS.**

**WARNING**
While the indications and guidelines contained in this data sheet correspond to the company’s knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

All relevant references of the product are available upon request