DESCRIPTION
Mapequick AF300 Dry is a powder alkali-free accelerator developed for shotcrete with a very rapid setting time.

WHERE TO USE
Mapequick AF300 Dry is formulated to be used both in wet-mix shotcrete spray systems as well as dry-mix shotcrete spray systems. Because of its composition and accelerating action, Mapequick AF300 Dry is suitable for preparing quality shotcrete with high mechanical strength.

Some application examples
- securing surfaces during tunnelling;
- consolidating rocks, cliff-faces and for vertical foundation diggings as well;
- shotcrete for structural tunnel repairs;
- shotcrete applications with high mechanical strength performance;
- shotcrete applications for final tunnel lining.

TECHNICAL CHARACTERISTICS
Mapequick AF300 Dry is a powder which can be added at the nozzle during the spraying phase when used with the mix for wet-mix shotcrete spraying and directly in the mix when using dry-mix shotcrete spraying.

Because of the absence of alkali, Mapequick AF300 Dry does not trigger an alkali-aggregate reaction. The acceleration of the setting time and the development of mechanical performances depend on the dosage of the admixture, the type and content of cement, the ageing of the cement, and the water-binder ratio. The temperature of the shotcrete influences the rate of setting and early strength. As far as the water-binder ratio is concerned (cement + fly ash/silica fume/blast furnace slag, etc.), it must be pointed out that the water-binder ratio should obviously be < 0.5 to promote durability and final mechanical performance. For this reason the addition of super-plasticising admixtures is certainly recommended.

RECOMMENDATIONS
- Do not use Mapequick AF300 Dry with ordinary concrete.
- Mapequick AF300 Dry cannot be mixed with other setting accelerators. When using other types of accelerators, it is necessary to thoroughly clean the dosage equipment with water before use.
- N.B. If using the wet-mix shotcrete system, do not add Mapequick AF300 Dry directly into the cement mixer.

HOW TO USE
Typical shotcrete
- 350-500 kg/m³ of cement (the type and amount is to be determined on the performance requirements).
- The addition, if necessary, of 3-8% by weight of cement of microfine material with pozzolanic activity as for example Mapeplast SF, silica fume based powder admixture.
- Mapeplast SF improves rheological properties of the fresh mixture (absence of bleeding and increase of thixotropic property) and the properties of the hardened mixture (mechanical strength, impermeability and resistance to chemical agents). For these reasons the shotcrete has a very high durability.
- Aggregate with maximum diameter between 8 and 12 mm.
- In case of use of wet-mix shotcrete, it is recommended to use a super-plasticising admixture in a dosage of 1-1.5% in volume by weight of cement to ensure a low water-binder ratio.
- Mapequick AF300 Dry in a dosage of between 2 and 6% by weight of cement.

Laboratory testing
Our laboratory is available for evaluating the compatibility and dosage of Mapequick AF300 Dry with cements on job-sites. To make the best use of Mapequick AF300 Dry, it is recommended to contact the Underground Technology Team to verify and perfect the local conditions for application and the properties of the cement used.

COMPATIBILITY WITH OTHER PRODUCTS
Mapequick AF300 Dry is compatible with all the super-plasticisers of the Dynamon and Mapefluid line that enable the reduction of water-binder ratio, increase fluidity and reduce slump loss.
The recommended dosage is between 2 and 6% by weight of cement depending on the setting time, the thickness necessary and the development of mechanical strength required in very short, short and long curing stages.

**Dosage**
Dosage by weight: from 2 to 6 kg per 100 kg of cement.

**Packaging**
Mapequick AF300 Dry is available in 25 kg bags.

**Storage**
Mapequick AF300 Dry can be stored for 12 months in original sealed containers and protect from umidity.

**Safety Instructions for the Preparation and Application**
Mapequick AF300 Dry is irritating to the skin and can provoke serious damage when in contact with the eyes. Avoid contact with eyes and skin. In case of contact with eyes, rinse immediately with plenty of running water and seek medical advice. Use suitable protective gloves, goggles and face masks. For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

**FOR PROFESSIONAL USERS.**

**WARNING**
Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application: for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application: in every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our web site www.mapei.com

All relevant references for the product are available upon request and from www.mapei.com

**TECHNICAL DATA (typical values)**

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