DESCRIPTION
Mapequick AFK 889 is a liquid alkali-free accelerator, with which it is possible to produce shotcrete characterised by rapid setting times and a very quick development of its strength.

WHERE TO USE
Mapequick AFK 889 is a stable suspension to be used to accelerate sprayed concrete, both in wet-mix as well as dry-mix spray systems and, thanks to its acceleration properties and absence of alkali, it is particularly suitable for spraying high quality concrete which has high strength after a very short (0-60 minutes), short (60 min.-24 hours) and long (> 24 hours) curing time.

The absence of alkali enables concrete to develop high mechanical resistance only a few minutes after casting, with almost no loss of resistance at final cure when compared to concrete prepared without an accelerator. Furthermore, concrete accelerated with this product is not subject to leaching, which can occur when using normal alkaline accelerators. For this reason Mapequick AFK 889 reduces the risk of obstructing water drainage system.

Some application examples
• Securing surfaces during tunnelling.
• Sprayed concrete for structural tunnel repairs.
• Sprayed concrete applications with high mechanical performances.
• Sprayed concrete applications with high mechanical strength (≥ 40 N/mm²) for the final tunnel lining.
• Consolidation of rock and cliff-faces.

TECHNICAL CHARACTERISTICS
Mapequick AFK 889 is a water solution of aluminium components to be added at the nozzle during the spraying phase, prepared according to a formula developed in the MAPEI research laboratories. 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, its aging and the water-binder ratio used.

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 or blast furnace slag, limestone powder, etc), it must be pointed out that the water-binder ratio should be lower than 0.5 to promote durability and final mechanical performance. For this reason the addition of a super-plasticizer admixture is certainly recommended.

Mapequick AFK 889 can be used for spraying 20 cm layers in only one application.
Mapequick AFK 889 improves the adhesion of the shotcrete to the rock and losses caused by rebound...
TECHNICAL DATA (typical values)

PRODUCT IDENTITY

<table>
<thead>
<tr>
<th><strong>Appearance:</strong></th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colour:</strong></td>
<td>brownish</td>
</tr>
<tr>
<td><strong>Density (ISO 756) (g/cm³):</strong></td>
<td>1.42 ± 0.03 @20°C</td>
</tr>
<tr>
<td><strong>Dry solids content (EN 480-3) (%):</strong></td>
<td>55.0 ± 2.5</td>
</tr>
<tr>
<td><strong>pH (ISO 4316):</strong></td>
<td>3.0 ± 1.0</td>
</tr>
<tr>
<td><strong>Principal action:</strong></td>
<td>acceleration of setting time</td>
</tr>
<tr>
<td><strong>Alkali (equivalent Na₂O) (EN 480/12) (%):</strong></td>
<td>≤ 1</td>
</tr>
<tr>
<td><strong>Chlorides (EN 480/10) (%):</strong></td>
<td>&lt; 0.1</td>
</tr>
<tr>
<td><strong>Dosage (%):</strong></td>
<td>3-8% in weight by weight of cement</td>
</tr>
</tbody>
</table>

are reduced with good penetration ability between the layers. This may be verified by using small core samples to measure the level of compaction of the shotcrete: the loss in compaction is less than 5% compared with the same concrete without a set accelerator that has been perfectly compacted.

RECOMMENDATIONS

Do not use Mapequick AFK 889 with ordinary concrete.

Mapequick AFK 889 cannot not be mixed with other setting accelerators. When using another type of accelerator, it is necessary to thoroughly clean the dosage equipment with water before use.

Do not add directly Mapequick AFK 889 into the cement mixer.

LABORATORY TESTING

Our Laboratory is available for evaluating the compatibility and dosage of Mapequick AFK 889 with cements used on job-sites.

To make the best use of Mapequick AFK 889, please contact the Underground Technology Team technical service to verify and perfect the characteristics of the concrete used, according to local application conditions.

COMPATIBILITY WITH OTHER PRODUCTS

- Mapequick AFK 889 is compatible with all the superplastizers and hyperplastizers of the Dynamon System and the Mapefluid range.
- Mapequick AFK 889 is compatible with Mapecure CCI 2000 and Mapecure SRA curing compounds.
- Mapequick AFK 889 is compatible with our retarding agents, such as Mapetard D and Mapetard SD2000.

CONSUMPTION

Dosage in weight:
from 3 to 8 kg per 100 kg of cement.

PACKAGING

Mapequick AFK 889 is supplied 25 kg drums, in 284 kg (200 l) drums and 1335 kg (1000 l) tanks.

Bulk quantities are also available upon request.

STORAGE

Store the product in closed containers at
a temperature between +5°C and +30°C, protected from frost and direct sunlight. If the product has been stocked for a long period, it is suggested to shake and homogenize it by using mechanised mixers and/or recirculation pumps. **It is strongly recommended not to shake the product by means of compressed air.** Please contact our technical service **Underground Technology Team** if the product is used after its expiring date (3 months) or after freezing. Even if the product is exposed to long elevated storage temperature or to rapid temperature changing, **it does not change** its characteristic which remains the same, it can only assume a different colour.

The product cannot be stored in metallic containers, except those INOX AISI 316.

**SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION**

**Mapequick AFK 889** is corrosive and it may cause burns and damage to eyes. It is recommended to wear protective gloves and goggles and to take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin wash immediately with plenty of clean water and seek medical attention. For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

**PRODUCT FOR PROFESSIONAL USE.**

**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**