

Mapeplast SF

Densified silica fume-based admixture with pozzolanic action

DESCRIPTION OF THE PRODUCT

Mapeplast SF is a powdered admixture with pozzolanic action to be used in combination with plasticizers or superplasticizers for high-quality mortar, grout and concrete with thixotropic, plastic, fluid or super-fluid consistency.

WHERE TO USE

The main application areas for **Mapeplast SF** are:

- high-quality thixotropic mortar that is resistant under the most severe environmental conditions (for new structures and the restoration of deteriorated structures);
- special concrete and grout to be applied with a pump;
- mortar and grout to be applied with a spray gun.

Some application examples

- Repair of deteriorated concrete structures attacked by sulphates and chlorides (dry docks, highway viaducts).
- Tunnel linings carried out using sprayed mortar or grout. Because of their excellent thixotropic and adhesive properties, sprayed mortar or grout prepared with **Mapeplast SF** often does not require the addition of setting accelerators that can weaken the quality of the final product.

- Underwater concrete with extremely high cohesion and resistant to washout.
- Repair of canals and hydraulic projects in general.

Mortar and concrete prepared with **Mapeplast SF** can resist leaching because the silica fume reacts with the free lime produced by the hydration of the cement.

TECHNICAL CHARACTERISTICS

Mapeplast SF is a dark grey-coloured powder composed of amorphous silica in the form of spherical sub-micron sized granules.

The extremely small size of the graded particles (many of them smaller than 0.1 mm) enables the spherical granules of **Mapeplast SF** to lodge in the interstices between the larger sized cement.

As a result the cement matrix is denser and more compact.

Using a combination of **Mapeplast SF** and the various superplasticizers of the **Mapefluid** or **Dynamon** product range, concrete can be obtained with a range of rheological properties that is waterproof in the fresh state and durable after hardening.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:	powder
Colour:	dark grey
Mass in pile (kg/m ³):	600
Main action:	pozzolanic
Secondary action:	filler
Dry solids content (%):	100

HOW TO USE

Pour **Mapeplast SF** into the cement mixer together with the other ingredients of the concrete (cement, aggregate, and water) in an amount varying from 20 to 60 kg/m³, depending on the type of material desired. To obtain maximum product performance, **Mapeplast SF** should be combined with a super-plasticizer or plasticizer because the small size of the particles require a greater amount of water.

It is also important to disperse the granules of **Mapeplast SF** as well as possible. For this reason, mixing for at least 5 minutes is recommended.

RECOMMENDATIONS

- Do not use **Mapeplast SF** for mortar and concrete that is not thoroughly mixed: at least 2 minutes in vertical mixers and at least 5 minutes in job-site mixers and mixer trucks.
- In order to disperse the micro-silica granules, **Mapeplast SF** can be poured in the water for the mix, especially for class S1 and S2 consistency concrete.

Reminder: for waterproof concrete, the water/cement ratio should be no higher than 0.55.

COMPATIBILITY WITH OTHER PRODUCTS

Mapeplast SF has no plasticizing action and must therefore be used in combination

with plasticizers and super-plasticizers of the **Dynamon** or **Mapefluid** product range.

Mapeplast SF is also compatible with:

- hardening accelerators without chlorides from the **Mapefast** range to reach a high level of strength after short curing cycles;
- setting retardants from the **Mapetard** range used in the production of concrete;
- **Mapeair AE**, air-entrainer for concrete resistant to freeze/thaw cycles;
- **Expancrete**, expanding agent for shrinkage-compensated concrete;
- **Mapeform Eco** and **DMA** form-release agent for formwork concrete;
- **Mapecure**, curing compound for protection against rapid evaporation of the mix water in concrete without formwork (floors).

DOSAGE

Mapeplast SF should be used in a dosage of from 20 to 60 kg per m³ of concrete depending on the characteristics required. Different dosages from those suggested must be previously tested through concrete trials, in addition to consulting MAPEI Technical Services Department.

PACKAGING

Mapeplast SF is available in 20 kg bags. Also available in 10 kg water soluble bags.

Available in large bags or in bulk on request.

STORAGE

Store **Mapeplast SF** for 24 months in a dry place in its original packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapeplast SF is not considered dangerous according to the current regulation regarding the classification of mixtures. It is recommended to wear protective gloves and goggles and to take the usual precautions for handling chemicals.

For further and complete information about the safe use of our product please refer to the latest version of our 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 website www.mapei.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.

The most up-to-date TDS can be downloaded from our website www.mapei.com.

ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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

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