

Mapescreed 704

Special plasticising and water-reducing acrylic admixture for cementitious screeds, including heated and cooling screeds

WHERE TO USE

To make internal and external floating and bonded screeds, including heated and cooling screeds, suitable for laying ceramic tiles, natural stone, parquet, resilients, carpet, etc.

Some application examples

- Screeds with low hygrometric shrinkage which set to foot traffic in 12-24 hours.
- Screeds with high mechanical strength after only 7 days.
- Rapid-curing heated and cooling screeds to reduce the waiting time before switching the heating/cooling system on for the first time before laying ceramic tiles, natural stone, resilients, parquet, etc. (before laying flooring sensitive to humidity, always check the R.H. level with a calcium carbide hygrometer).

TECHNICAL CHARACTERISTICS

Mapescreed 704 is a watery solution of acrylic polymers (without formaldehyde) developed in the MAPEI laboratories. When the product is added to conventional screed mixes (aggregates-cement-water) at a rate of 1-1.5% on the weight of the cement, it improves their plasticity and workability, reduces porosity and hygrometric shrinkage, speeds up and increases development of mechanical strength, improves thermal conductivity, reduces

drying times and allows the 1st heating cycle to be carried out (in compliance with UNI EN 1264-4 : 2003) after only 15 days.

It is very easy to use which makes it particularly suitable for use with mechanical-computerised application systems, such as in modern fixed silo systems or on cement trucks.

RECOMMENDATIONS

- Do not add **Mapescreed 704** to lime or gypsum-based mortar.
- Do not add to special hydraulic binders, such as **Mapecem** or **Topcem**.
- Protect the screed against draughts, direct sunlight, freezing weather, rain, etc. for the first 24-48 hours.
- Check and correct the dose of **Mapescreed 704** and all the components in the mix.
- Protect containers of **Mapescreed 704** from freezing weather.

APPLICATION PROCEDURE

Preparation of the substrate

All types of substrate are suitable for laying cement screeds containing **Mapescreed 704**. Isolate the substrate with sheets of polyethylene or similar material. If there is rising damp, integrate the

Mapescreed 704



Mapescreed 704 used as an admixture for a pre-blended product in a silo or in a truck-mounted silo

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Appearance:	liquid
Colour:	amber
Density according to ISO 758 (g/cm ³):	1.04 ± 0.02 at +20°C
Dry substance content according to EN 480-8 (%):	15 ± 1.5
Main action:	to increase workability and/or reduce the amount of mixing water required
Classification according to UNI EN 934-2:	high-efficiency, super-plasticising water-reducing agent according to tables 3.1 and 3.2
Soluble chloride content according to EN 480-10 (%):	< 0.1 (absent according to UNI EN 934-2)
Alkali content (equivalent Na ₂ O) according to EN 480-12 (%):	< 2.0
pH according to ISO 4316:	7.0 ± 1
PERFORMANCE DATA OF PRODUCT	
Compressive/flexural strength (N/mm ²) EN 13892:	> 14 / > 3 (after 7 days) > 20 / > 5 (after 28 days)
Set to light foot traffic:	12 hours
Waiting time before switching on heating system:	15 days
Residual humidity after 21 days (%):	< 2.0 (screed thickness 5 cm)
Density of mix (kg/m ³):	1950
Pot life of mix:	~ 60 minutes
Application temperature range:	from +5°C to +35°C

The data in this technical data sheet refer to screeds made using the composition recommended above, cured under standard laboratory conditions with a thickness of 4-5 cm (for normal screeds) and 6-7 cm (for heated screeds).

isolation with a suitable waterproof sheath. On screeds which are not self-bearing, which means that they must be anchored (from 10 to 35 mm thick), the old substrate must in either cementitious, stone or ceramic material, resistant to compressive and tensile loads and must be dry and free of cracks, dust, loose parts, paint, wax, oil and traces of gypsum. Please contact the MAPEI Technical Services Department for other types of substrate.

Recommended composition of the mix

- CEM II/A-LL 32.5 R: 220 kg.
- Aggregates with grain size range from 0 to 6 mm diameter: ~1750 kg (~1 m³).
- **Mapescreed 704**: 3 kg (1.4%).
- Water: 130-140 kg for dry inert.

The mixing ratios may vary as indicated below according to the final performance required.

- Cement: from 200-240 kg of cement with 1 m³ of aggregates (from 0 to 6 mm diameter).
- 120-160 kg of water for dry aggregates.
- 1-1.5% of **Mapescreed 704**.

FLOATING AND HEATED/COOLING SCREEDS (thickness from 35 to 60 mm)

Preparation of the mix

Carefully mix the cement, aggregates (0 to 6 mm diameter) water and **Mapescreed 704** in a cement mixer for approximately 2 minutes.

Cast, compact and tamp the mix as quickly as possible, and always within one hour from the start of preparation. Special care must be taken when dosing the water. The amount of water added must form a "damp-earth" consistency which, when tamped, must be compacted until a smooth surface is obtained without bleeding on the surface.

The mix may be prepared with one of the following:

- planetary mixer;
- conventional site mixer;
- worm-screw mixer;
- cement mixing truck;
- automatic pressure pump.

We do not recommend hand mixing with a shovel. This method does not guarantee good dispersion of the **Mapescreed 704** and more water will be needed to form the required consistency.

On compressible substrates, the screed must be thick enough for purpose and must also be reinforced with suitable metallic mesh.

Spreading the mix

The mix should be poured on the substrate like any traditional concrete on which polyethylene (or similar material) separation sheets have been laid, to form a layer

between the substrate and screed on which the mix may easily flow.

The isolating layer, if also used to form a vapour barrier, blocks rising damp from the substrate and dehydration of the screed due to rapid absorption of water into the substrate. In fact, the water absorbed by the substrate would rise up again and increase the drying time of the screed. Screeds are laid by installing spacers to form the required thickness, casting the mix, carefully tamping the mix and then passing over the surface with a float to get a better finish.

If pipework or a sheath needs to be incorporated in the screed, the layer above them must be at least 3 cm thick (in compliance with UNI EN 1264-4 : 2003) and reinforced with zinc-plated metallic wire mesh made with wire at least 2 mm in diameter and with a mesh size of 50x50 mm. We also recommend installing isolating material around 1 cm thick (cardboard, polystyrene, cork, etc.) around the perimeter of the room and around any pillars in the room. If any interruption in the laying work does not correspond with a joint, insert 20-30 cm long pieces of 6 mm diameter round bar vertically into the screed at a pitch of 20-30 cm to guarantee that there is a perfect joint when casting recommences and to avoid cracks and steps in the screed.

BONDED SCREEDS

(thickness from 10 to 35 mm)

Preparation and spreading the mix

Preparation and spreading are the same as for floating screeds. However, it is necessary to apply a coat of bonding slurry made from **Planicrete** on the dry substrate beforehand.

Composition of the bonding slurry

Planicrete: 1 part by weight.

Water: 1 part by weight.

Cement: 3 parts by weight.

Spread the slurry on the surface of the substrate before casting the screed (fresh on fresh) to guarantee a good bond.

Measuring the humidity level

Any standard electric or calcium carbide hygrometer is suitable to measure the level of residual humidity.

Cleaning

Tools may be cleaned with water.

CONSUMPTION

1-1.5 kg every 100 kg of cement.

PACKAGING

The product is available in bulk quantities, 1000 litre tanks, 200 litre drums, 25 kg and 10 kg cans.



Preparation of the heating/cooling system



Mechanical system for metering Mapescreed 704

Mapescreed 704



Spreading the mix with
Mapescreed 704 admix



Smoothing the surface
with a steel disk

STORAGE

Mapescreed 704 may be stored for up to 12 months in sealed containers protected from frost.

If exposed to direct sunlight, the colour of the product may change without causing any change to its performance characteristics.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapescreed 704 is not considered hazardous according to current norms and guidelines regarding the classification of mixtures. However, we recommend taking the usual precautions for handling chemical products.

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

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