

Mapescreed 704

Special plasticising and water-reducing admix for cementitious screeds, including heating and cooling screeds

WHERE TO USE

To produce internal and external bonded, unbonded and floating screeds, including UFH, suitable for receiving ceramic tiles after only 7 days and natural stone, wood, carpet, resilient and resin flooring after 14 days.

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.
- Fast drying heated screeds to reduce the waiting time before switching the heating/cooling system on for the first time before laying ceramic, natural stone, wood, resilient flooring etc.

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 1.5% 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 after only 15 days.

It is very easy to use which makes it particularly suitable for use with mechanical-computerised dispensing systems, such as those used in modern plant batching systems, volumetric truck mixers and for on-site mixer pumps.

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 the correct dosage of **Mapescreed 704** is used as well as 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:sand screeds containing **Mapescreed 704**. Isolate the substrate with sheets of polyethylene or similar material. If there is rising damp, integrate the installation with a suitable waterproof membrane. Screeds which are bonded must be anchored to

Mapescreed 704



Mapescreed 704 can be applied through a central mixer or site pump mixer

Central plant mixer



TECHNICAL DATA (typical values)

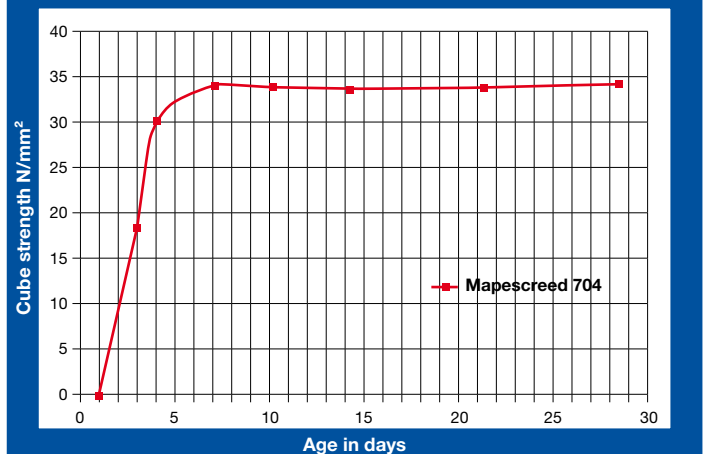
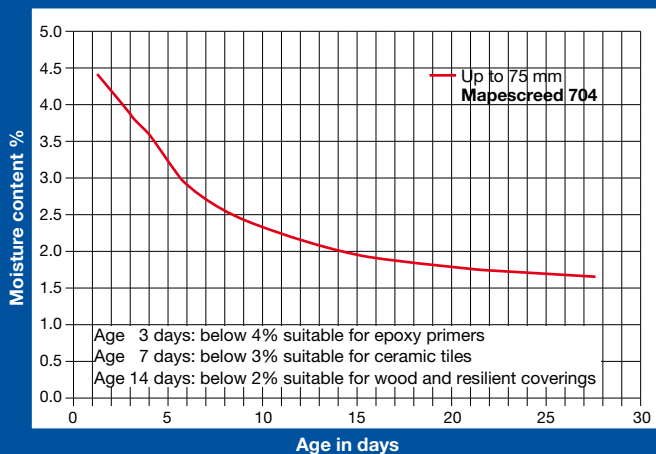
PRODUCT IDENTITY	
Appearance:	liquid
Colour:	amber
Density according to ISO 758 (g/cm ³):	1.04 ± 0.02 at +20°C
Dry substance content according to EN 480-8 (%):	15 ± 0.8
Main action:	to increase workability and/or reduce the amount of mixing water required
Classification according to EN 934-2:	high-efficiency, 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 EN 934-2)
Alkali content (equivalent Na ₂ O) according to EN 480-12 (%):	< 2.0
pH according to ISO 4316:	7.0 ± 1

TECHNICAL DATA

Compressive/flexural strength of a mortar based on the recommended mix design (N/mm ²) EN 13892:	> 20/3 (after 7 days) > 30/6 (after 28 days)
Set to foot traffic:	12-24 hours
Waiting time before switching on heating system:	15 days
ISCR to BS:8204 at +14 days	CAT A
Residual moisture after 14 days (%):	< 2.0 (screed thickness up to 7.5 cm)
This final heading should say 'ISCR to BS:	8204 at 14 days'
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 the table above refers to screeds made using the composition recommended within this TDS, cured under standard laboratory conditions with a thickness of 4-5 cm (for normal screeds) and 6-7 cm (for heated screeds)

The drying data illustrated on the graph below was obtained using a carbide hygrometer, air cured under cover during January 2012 with an average monthly temperature of 5.77°C



the substrate. The existing substrate must be either cementitious, stone or ceramic material, be 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 Mix Design

- CEM I or CEM IIA-V: 320 - 340 kg.
- Aggregates 0/4 MP (EN 13139) 1650 - 1750 kg.
- **Mapescreed 704**: 4.8 - 5.1 kg (1.5% of Cement).
- Water: 130-140 kg.

It can vary according with the humidity of the aggregate.

FLOATING SCREEDS (min thickness 55 mm) Preparation of the mix

Carefully mix the cement, aggregates and water in a cement mixer for at least 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;
- worm-screw mixer;
- 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 such as D49.

If the screed is laid over heating pipes, a thickness of not less than 65 mm should be used.

Spreading the mix

The mix should be spread on the substrate, such as a traditional concrete, on which polyethylene (or similar) 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.

Screeds are laid by preparing levelling strips to form the required thickness,

casting the mix, carefully tamping the mix and then passing over the surface with a float.

If pipework or a cable channel needs to be incorporated in the screed, the layer above them must be at least 3 cm thick 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 of approximately 10 mm thick (cardboard, polystyrene, cork, etc.) around the perimeter of the room and around any upstands.

If any interruption in the installation 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 (Min thickness 10 mm)

Preparation and spreading the mix Preparation and spreading are the same as for floating screeds. However, to achieve a fully bonded construction, it is necessary to apply a coat of bonding slurry made from Planicrete on the dry, mechanically abraded substrate beforehand.

Composition of the bonding slurry

Planicrete: 1 part in weight.

Water: 1 part in weight.

Cement: 3 parts in weight.

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

Note: for thicker section bonded screeds over 50 mm use Eporip epoxy bonding agent.

UNBONDED SCREEDS (Min thickness 50 mm)

When laid on a damp-proof membrane, a separating layer, a base that incorporates a waterproofing admixture or has been contaminated, or a base that for any reason cannot be prepared for bond, the screed thickness should not be less than 50 mm.

Preparation and spreading the mix

Preparation and spreading are the same as for floating screeds.

Measuring the moisture content

Before laying flooring sensitive to moisture always check the relative moisture level



Underfloor Heating preparation



Mortar with Mapescreed 704 can be dispensed automatically

Mapescreed 704



Spreading the mix with Mapescreed 704 admix



Smoothing the surface with a steel disk

of the screed using the calcium carbide method.

Cleaning

Tools may be cleaned with water.

CONSUMPTION

1.5 kg every 100 kg of cement.

PACKAGING

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

STORAGE

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

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

a 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



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