

# MAPECEM

Fast drying and setting cement for floor screeds (24 hours) hydraulic binder for shrinkage - compensated screeds



## WHERE TO USE

Preparation of bonded, unbonded and floating screeds on existing and new slabs for the installation of wood, PVC, linoleum, ceramic tiles, carpeting or any other flooring where fast-drying is required for minimum downtime.

### Some application examples

- Preparation of screeds set to light foot traffic after 2-3 hours and perfectly dry after 24 hours, for the installation of parquet and resilient flooring.
- Preparation of screeds ready to receive ceramic tiles and natural stone after only 3-4 hours.
- Patching and repairing screeds in areas subject to continuous traffic (supermarkets, hospital, airports, etc.).
- Preparation of screeds incorporating underfloor heating systems.

## TECHNICAL CHARACTERISTICS

**Mapecem** is a special hydraulic binder, which, when mixed with graded aggregates and water, has the extraordinary capacity to harden in just a few hours and to dry perfectly at whatever thickness within 24 hours (residual moisture less than 2% water by weight).

Because of these characteristics and very high mechanical strength, **Mapecem** is the ideal fast track solution allowing ceramic tiles to be installed within 3-4 hours and ready to receive resilient floor coverings such as vinyl, rubber, carpet etc within 24 hours.

## RECOMMENDATIONS

- Do not use **Mapecem** on substrates subject to rising damp (lay a waterproofing membrane first).
- Do not use **Mapecem** mixed with other cements, lime, gypsum, etc.
- Do not leave **Mapecem** dry-mixed with aggregates (quickly add the right quantity of water and use immediately).
- Do not mix **Mapecem** only with fine sand (use aggregates graded from 0 to 8 mm or Gravel 0-8 for thicknesses of max 8-9 cm).
- Do not mix **Mapecem** with an insufficient quantity of water (this will cause partial hydration and compromise its mechanical strength).
- Do not leave **Mapecem** mix in the mixer for more than 3-4 minutes.
- Do not mix **Mapecem** with an excessive quantity of water (drying time will be lengthened).
- Since **Mapecem** screeds are very compact, absorption of the water contained in water dispersion adhesives is slow: it is therefore recommended to use **Lignobond**, **Ultrabond P990 1K** or **Ultrabond P902 2K** (polyurethane adhesives) for installing parquet floors that are particularly sensitive to moisture.
- Do not add water to a prepared mix and do not remix **Mapecem** after it has started to set.
- Do not wet the surface of a screed laid with **Mapecem**.
- Do not mix in batching plants and do not transport the mixture by cement mixer lorry: the setting time of **Mapecem** is too short!

## APPLICATION PROCEDURE

### Preparing the substrate

All substrates are suitable for receiving a **Mapecem** screed as long as they are not subject to rising damp, in which case install a suitable damp proof membrane.

For bonded screeds (from 10 mm minimum), which have therefore to be anchored, the substrate must be dry, free from cracks, resistant to compressive and tensile strength, free from dust, loose materials, paints, wax, oil, traces of gypsum.

### Unbonded screeds from 35 mm and floating screeds from 55 mm

#### Preparing the mix

**Mapecem** must be mixed carefully and quickly, with water and graded aggregates 0-8 mm in diameter or with Gravel 0-8, for a maximum of 3-4 minutes, in a mixer or batcher.

The mix must be spread and levelled in the shortest time possible within 30 minutes after mixing. Special care must be taken with the quantity of water that must be enough to form a cohesive mass so that tamping gives a flat surface without a cement film.

Mapecem, aggregates and water can be mixed:

- in a drum mixer;
- in an ordinary concrete mixer;
- in a forced action mixer;
- manually, with a shovel. The Mapecem mix can be placed using an automatic pressure pump. Guidance regarding the instructions for mixing must always be closely followed.

#### Spreading the mix

The **Mapecem** mix is placed onto a substrate like any ordinary concrete. A polyethylene sheet must be laid (even over a bituminous membrane or other existing waterproofing substrate) in order to create an easily flowing layer between the **Mapecem** screed and the already existing substrate and at the same time to prevent any rising damp. If the **Mapecem** screed is crossed by pipes, it is necessary to lay a light metal mesh (a hexagonal mesh, for instance) over the screed as a reinforcement.

**Mapecem** screeds are prepared using the same methods as those for ordinary sand and cement screeds: preparing levelling strips, spreading the mix and accurately compacting it and then tamping to obtain a better surface finish.

Around the perimeter of the area and around the columns etc., it is recommended to insert a 1 cm thick anti-fracture material (such as felt board, cork, polystyrene, etc.).

If work is interrupted for more than 1 hour, it is necessary to cut the screed perpendicularly and insert pieces of rod (20-30 cm long and 3-6 mm in diameter) into the edge of the screed. They should be inserted 20-30 cm apart to guarantee perfect bonding and to avoid cracks and differing levels.

### Bonded screeds from 10 mm minimum

Preparing the mix, proportions and spreading the mix are exactly the same as for floating screeds, but first it is necessary to apply a **Planicrete** bonding slurry onto the perfectly clean substrate.

#### Dosage of the anchoring slurry

**Planicrete**: 1 part by weight

Water: 1 part by weight

**Mapecem**: 2 parts by weight

In order to ensure bonding, the slurry must be applied onto the surface that needs to be covered just before the **Mapecem** screed is installed (fresh on fresh).

## MEASURING THE MOISTURE

Electronic hygrometers supply only indicative values for measuring moisture. The residual moisture level of **Mapecem** screeds must absolutely be measured with a carbide hygrometer, which provides absolute values of moisture by weight.

## Cleaning

Tools are cleaned with plenty of water.

## CONSUMPTION

Consumption varies depending on the thickness of the screed and the amount of **Mapecem**.

For 350-450 kg of **Mapecem** per m<sup>3</sup> of aggregates, consumption is 3.5-4.5 kg/m<sup>2</sup> per cm of thickness.

## PACKAGING

20 kg paper bags

## STORAGE

12 months in a dry place in the original packing. However, in time, setting time could be slower without altering the final performances.

The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Mapecem** contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. It can cause damage to eyes.

During use, wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with the eyes or skin, wash immediately with plenty of 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.

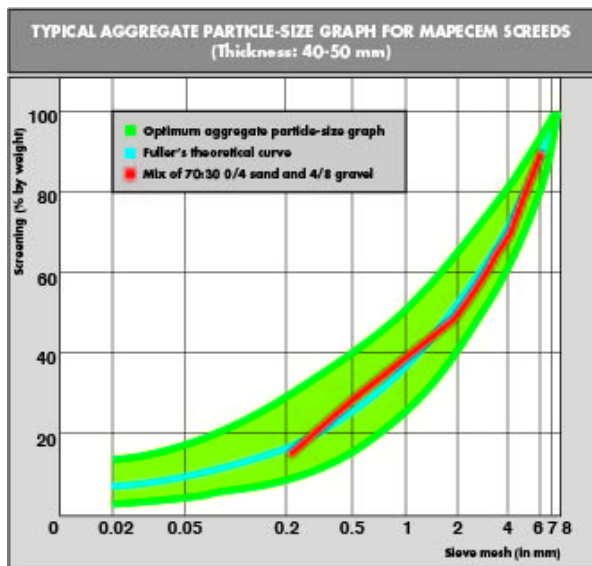
## TECHNICAL DATA

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey
Bulk density (kg/m <sup>3</sup> ):	1,300
Dry solids content (%):	100
APPLICATION DATA (at +23°C – 50% R.H.)	
Recommended mixing ratio:	350-450 kg of <b>Mapecem</b> with 1 m <sup>3</sup> aggregates (from 0 to 8 mm diameter) and 80-160 kg of water, depending on the moisture in the aggregates.
Density of the mix (kg/m <sup>3</sup> ):	2,200-2,250
Duration of mixing:	3-4 minutes
Open time of mix:	20-30 minutes
Application temperature range:	from +5°C to +35°C
Set to light foot traffic:	2-3 hours
Ready for use:	24 hours
Ready for levelling:	after 4 hours
Waiting time before installation:	3 hours for ceramic tiles and stone material 24 hours for resilient coverings and wood
Residual moisture after 24 hours (%):	< 2
FINAL PERFORMANCES	
Resistance to acids:	fair
Resistance to alkali:	excellent
Resistance to oils:	excellent
Resistance to solvents:	excellent
Temperature when in use:	from -30°C to +90°C
Mechanical strength:	see tables and graphs

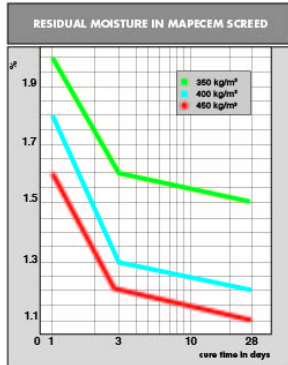
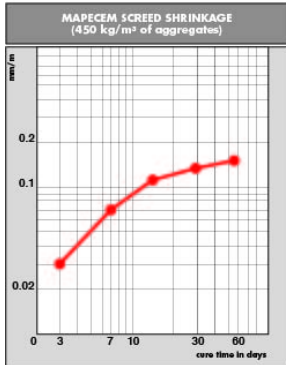
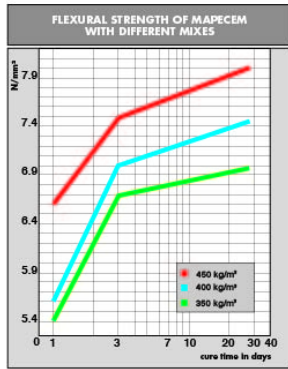
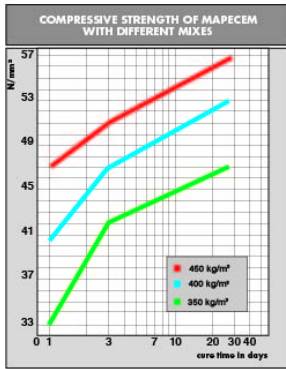
Mechanical strength of Mapecem with 0-8 mm sand									
Proportion of Mapecem	Flexural strength (N/mm <sup>2</sup> )			Compressive strength (N/mm <sup>2</sup> )			Residual moisture (%)		
	24 h	3 days	28 days	24 h	3 days	28 days	24 h	3 days	28 days
350 kg/(m <sup>3</sup> sand)	5.4	6.7	7.0	33.0	42	47	2	1.6	1.5
400 kg/(m <sup>3</sup> sand)	5.6	7.0	7.5	40.5	47	53	1.8	1.3	1.2
450 kg/(m <sup>3</sup> sand)	6.6	7.5	8.0	47.0	51	57	1.6	1.2	1.1

Recommended proportions	
Mapecem:	350-450 kg
Graded aggregates from 0 to 8 mm <b>Gravel 0-8:</b>	1 m <sup>3</sup>
Water:	from 80 to 160 kg depending on the moisture in the aggregates

equal to:	
Mapecem:	one 20 kg bag
Graded aggregates from 0 to 8 mm <b>Gravel 0-8:</b>	80-100 kg or 13-15 shovelfuls
Water:	from 4 to 8 kg depending on the moisture in the aggregates



**MAPECEM: TECHNICAL DATA**



Aggregates for Mapecem: gravel from 4 to 8 mm and sand from 0 to 4 mm



The correct consistency of Mapecem



Mixing Mapecem with an automatic pumping unit



Covering pipes with Mapecem and reinforcement netting



Mixing Mapecem in a mini-batcher



Spreading the anchoring slurry for bonded Mapecem screeds



Finishing a Mapecem screed with Ultraplan self-levelling compound



Tamping the Mapecem screed



Batching a Mapecem mix



Preparing a levelling strip



Using the straight-edge



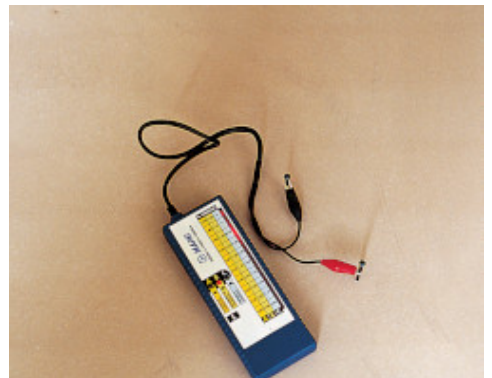
Fast repair of a screed in a supermarket



Laying and smoothing of the Mapecem screed - Sistine Halls - Vatican City



Carbide hygrometer for measuring the moisture level of a Mapecem screed



Electronic hygrometer for measuring the moisture level of a Mapecem screed



Mapecem: the ideal screed for all types of flooring



Mixing Mapecem with Planicrete to make an anchoring slurry

## WARNING

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*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.co.uk](http://www.mapei.co.uk)**

**201-9-2017 (UK)**

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