

TOPCEM

Special hydraulic binder for normal setting, fast drying and shrinkage controlled screeds



WHERE TO USE

Formation of bonded, unbonded and floating or heated screeds on both existing and new concrete prior to the installation of wood, PVC, linoleum, ceramic tiles, natural stone, carpet or any other flooring where rapid drying is required for short installation times. Suitable for indoor and outdoor use.

Some application examples

- Formation of screeds set to light foot traffic after 12 hours.
- Formation of screeds on which ceramic tiles can be laid after 24 hours.
- Formation of screeds on which natural stone can be laid after 2 days.
- Formation of screeds on which resilient flooring, wooden flooring, waterproofing and other Mapei Systems can be laid after 4 days.
- Patching and repairing floor screeds where rapid restoration is required.
- Preparation of screeds incorporating underfloor heating systems without the need for polymer additives.

TECHNICAL CHARACTERISTICS

Topcem is a special hydraulic binder which, when mixed with graded aggregates and water, can produce an early drying high strength screed ready to receive floor finishes between 24hrs and 4 days.

USES

- High traffic areas such as airports, shopping centres, schools, hospitals etc.
- Fast track construction where the screed needs to be trafficked or overlaid early.
- Suitable for underfloor heating systems.
- Suitable for use where BRE screed test category A or B is required.

RECOMMENDATIONS

- Do not mix **Topcem** with other cement, lime, gypsum or **Mapecem** etc.
- Do not leave **Topcem** dry-mixed with aggregates, immediately add the correct quantity of water to the mix.
- Do not mix **Topcem** just with fine sand, use aggregates graded to BS EN 13139 0/8.
- Do not mix **Topcem** with an excessive quantity of water.
- Do not add water and remix **Topcem** after it has started to set.

RECOMMENDED DOSAGE

Topcem binder	250 kg/m ³
Recommended mix design:	
0/8 mm aggregate	1750 kg/m ³
Topcem binder	250 kg/m ³
Water	100 kg/m ³

Note: Water content may vary according to the moisture content of the aggregate.

Spreading the mix

The **Topcem** mix should be spread in the same way as a normal screed. A polyethylene isolating sheet (or other similar material) must be laid to create a separating layer between the screed and the supporting substrate.

This separating layer also provides the function of a vapour barrier, preventing damp rising from the substrate and also dehydration of the **Topcem** screed due to rapid absorption of water; the absorbed water, rising subsequently would retard the drying process.

Topcem screeds are prepared using the same techniques as for ordinary cement screeds, preparing levelling strips, laying the mix, carefully compacting it and then tamping for the required surface finish.

Where it is necessary to incorporate piping or sheathing in the **Topcem** screed the upper layer which must not be less than 25 mm thick, should be reinforced with galvanized steel mesh of not more than 30x30 mm. Around the perimeter of the area and around columns etc., it is advisable to form an expansion joint about one centimetre wide between the wall and the screed with a flexible material (such as polyethylene, felt board, cork, polystyrene, etc.).

If the installation of the screed is interrupted away from a construction joint cut the day joint in the screed straight down and insert pieces of 3-6 mm diameter, steel rods 20-30 cm long.

They should be spaced 20-30 cm apart to ensure perfect bonding and to avoid cracks and differing levels when work is resumed.

On average there is more time available for laying and working with Topcem screeds compared to traditional cement screeds. However the ambient temperature influences the setting and drying times.

CONSTRUCTION METHOD

BONDED SCREEDS (Min 10mm thick)

Thin screeds must be laid directly in contact with the substrate, which may be cementitious material. For other substrates, consult the MAPEI Technical Services Department.

Once the substrate has been prepared sufficiently, and immediately before spreading on the **Topcem** mix, prepare bonding slurry with **Planicrete** according to the ratio in the table below. Apply a continuous, even 2-3 mm layer using a large flat brush, a scrubbing brush or a trowel.

To get perfect adhesion, spread **Topcem** on the slurry while it is still fresh (fresh on fresh technique).

If the floor is subjected to high mechanical stresses, the construction joint must be made by replacing the **Planicrete** cementitious bonding slurry with **Eporip**.

Spread on **Topcem** using the same method described above.

Recommended Dosage

0/8mm aggregate	1750kg/m ³
Topcem binder	250kg/m ³
Water	100kg/m ³

UNBONDED SCREED (Min 35mm thick)

The **Topcem** mix must be laid on an isolating layer, made up of a 1200 gauge polyethylene sheet barrier, or similar, to allow for movement between the screed and the existing substrate. In case of rising damp use a waterproof membrane to form a vapour barrier underneath the screed. **Mapefibre NS12** may be added to the screed at 120 g/Bag of **Topcem** as an additional measure. Areas of **Topcem** screeds containing pipes must be reinforced with light steel reinforcement (such as a hexagonal mesh). Spread the **Topcem** mix just like any

other cement-based screed mix: use screed guides, then spread the mix and tamp thoroughly before floating to obtain a better surface finish. Place isolating material (such as polystyrene foam, cork, etc.) approx. 1 cm thick around the sides of the area and around columns before casting. If work is interrupted, place steel rods 20 to 30 cm long and 3 to 6 mm in diameter, spaced 20 to 30 cm apart, into the screed (which has been cut perpendicular to the substrate) to ensure a perfect connection between the new and the old pours and to prevent uneven joins and cracks. The Topcem mix is usually workable for a greater length of time than a conventional screed mix. Ambient temperatures may influence the setting and drying times.

FLOATING SCREED (Min 55mm thick)

The Topcem mix is prepared and applied in the same way as an unbonded screed. **Mapefibre NS12** may be added to the screed at 120 g/Bag of **Topcem** as an additional measure.

The insulation should have a high resistance to compression and not depress more than 3 mm under the anticipated final load.

Where underfloor heating pipes are incorporated, they should be located a minimum of 25 mm below the surface of the screed. Additionally reinforcing mesh if used, should be placed over the pipes. The underfloor heating may be commissioned after 4 days.

Note: For under floor heating systems the screed must contain either additional reinforcing mesh or **Mapefibre NS12** fibres.

DOSAGE OF THE BONDING SLURRY

Planicrete	1 part by weight
Water	1 part by weight
Topcem	4 parts by weight

To ensure adhesion, spread the slurry onto the surface to be covered immediately before the **Topcem** screed (fresh screed on fresh slurry).

Note: For structural bonding use **Eporip Epoxy Bonding Agent**.

MEASURING THE MOISTURE CONTENT

Because of the particular composition and character of **Topcem**, ordinary electric moisture meters do not give reliable values; residual moisture can only be recorded with a carbide hygrometer.

CLEANING

Tools can be cleaned with water.

CONSUMPTION

Consumption varies in relation to the thickness of the screed and the dosage of **Topcem**.

For doses of 200-250 kg of **Topcem** per m³ of aggregate consumption is 2-2.5 kg/m²/cm of thickness.

PACKAGING

20kg paper sacks.

STORAGE

Topcem can be stored for 12 months in a dry place in the original packaging.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION



Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.co.uk.

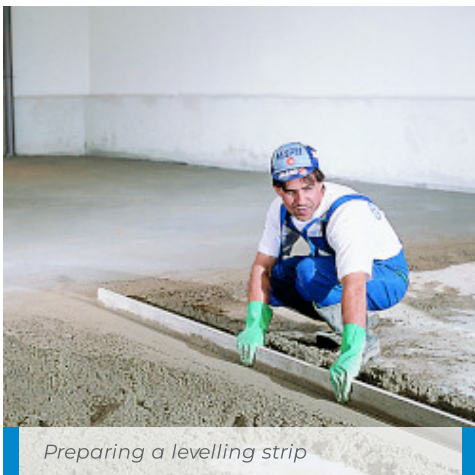
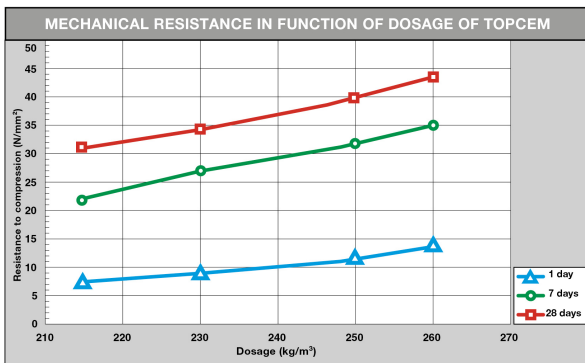
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey
Bulk density (kg/m ³):	850
Dry solids content (%):	100
EMICODE:	EC1 Plus - very low emission
APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing ratio:	200-250 kg of Topcem with 1 m ³ of aggregate (diameter from 0-8 mm) and 110-130 kg of water for dry aggregate
Density of the mix (kg/m ³):	2100
Mixing time:	5-10 minutes
Working time of mix:	60 minutes
Application temperature:	from +5°C to +35°C
Set to light foot traffic:	after 12 hours
Ready for use:	4 days
Application of levelling compound:	after 1-4 days
Waiting time before installation:	24 hours for ceramic tiles 2 days for stone material 4 days for resilient and wood
Residual moisture after 4 days (%):	< 2.0
FINAL PERFORMANCE DATA	
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor to vegetable oils)
Resistance to solvents:	excellent
Temperature when in use:	from -30°C to +90°C

MECHANICAL RESISTANCE EN 13892 AND MOISTURE IN SCREEDS WITH TOPCEM (20 kg), GRADED DRY AGGREGATE 0-8 mm (160 kg) AND WATER (11 kg)

TIME (days)	MECHANICAL RESISTANCE (N/mm ²)		MOISTURE at +23°C - 50% R.H. Measured on samples 4x4x16 cm
	COMPRESSIVE STRENGTH	FLEXURAL STRENGTH	
1	> 8	> 3	< 3.5
4	> 15	> 4	< 2.0
7	> 22	> 5	–
28	> 30	> 6	–

Topcem is not a rapid setting binder, therefore workability is like a normal cement screed.





Spreading the anchoring slurry for bonded Topcem screeds

N.B.

Whilst we try to ensure that any advice, recommendations or information given in our literature is accurate and correct, we have no control over the circumstances in which our product is used. It is therefore important that the end users satisfy themselves that the product and conditions are suitable for the envisaged application.

No warranty can be given or responsibility accepted other than, that the product supplied by us will meet our written specification.

End users should ensure that our latest product data and safety information sheets have been consulted prior to use.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.co.uk


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.co.uk.

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