

# TOPCEM

Special hydraulic binder for normal setting, fast drying and shrinkage controlled screeds manufactured to BS 8204-1



## 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 and wooden flooring 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. **Topcem** is defined within BS 8204 -1 section 5.1.3 part f.

## 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 thin resin or cementitious systems such as **Mapefloor** or **Ultratop**.
- 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.

## UNBONDED SCREEDS (min 35 mm thick)

### Preparing the mix

Carefully mix the **Topcem** with graded aggregates 0/8 mm in diameter and water, in a mixer or screed pump for at least 5 minutes.

The mix must be spread, tamped and levelled in the shortest possible time and in any event not more than an hour after preparation. Particular care must be taken with the quantity of water which must be such as to obtain a mix with a "damp earth" consistency that under a float finish will compact to produce a closed and smooth surface without water bleed.

Topcem, aggregates and water can be mixed using:

- a forced action mixer;
- an ordinary concrete pan mixer;
- a screw mixer;
- an automatic pressurised screed pump.

Mixing manually with a shovel is not recommended as it does not permit good dispersion of the **Topcem** components resulting in the need to increase the quantity of water in order to obtain the right mix. Where it is not possible to use a mechanical mixer and for small areas that require mixing by hand, it is recommended to thoroughly dry mix the **Topcem** with the aggregates before adding the water in small amounts, turning the mix until a "damp earth" consistency is obtained.

## RECOMMENDED DOSAGE

**Topcem** binder 250 kg/m<sup>3</sup>

### Recommended mix design:

0/8 mm aggregate 1750 kg/m<sup>3</sup>

**Topcem** binder 250 kg/m<sup>3</sup>

Water 100 kg/m<sup>3</sup>

**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.**

## BONDED SCREEDS (Min 10mm thick)

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

## DOSAGE OF THE BONDING SLURRY

**Planicrete** 1 part by weight

Water 1 part by weight

**Topcem** 3 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 thicker section bonded screeds over 50mm use **Eporip Epoxy Bonding Agent**.

## FLOATING SCREEDS (min. 55 mm thick)

The screed 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.

## 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 m<sup>3</sup> of aggregate consumption is 2-2.5 kg/m<sup>2</sup>/cm of thickness.

## PACKAGING

20kg paper sacks.

## STORAGE

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

### Quality Systems

Manufactured in the UK by Mapei UK Ltd under quality control procedures assessed to EN ISO 9001.

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

## SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

**Topcem** 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. It is recommended to use protective gloves and goggles and to 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.

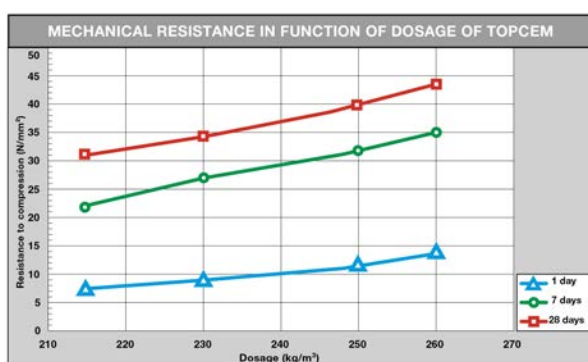
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey
Bulk density (kg/m <sup>3</sup> ):	850
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emission

APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing ratio:	200-250 kg of <b>Topcem</b> with 1 m <sup>3</sup> of aggregate (diameter from 0-8 mm) and 110-130 kg of water for dry aggregate
Density of the mix (kg/m <sup>3</sup> ):	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 <sup>2</sup> )		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.*







Mixing Topcem in a mini-batcher



Mixing Topcem with an automatic pumping unit



Batching a Topcem mix



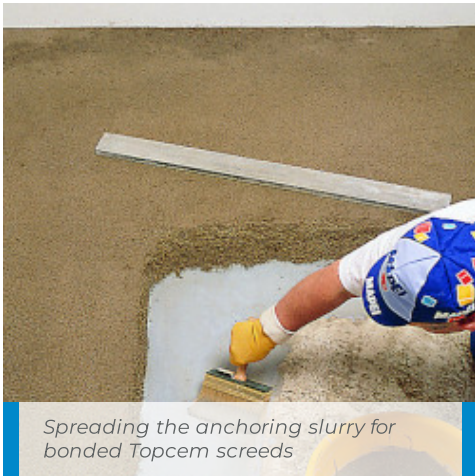
Preparing a levelling strip



Screeding Topcem



Power floating the surface of a Topcem 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](http://www.mapei.co.uk)

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