

# Topcem

**Normal setting rapid drying (7 days) and controlled shrinkage special hydraulic binder for screeds**



## WHERE TO USE

Formation of floating and bonded screeds on both existing and new slabs, for 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 and completely dry after 7 days, for the laying of parquet and resilient flooring (at +23°C - 50% RH).
- Formation of screeds on which to lay ceramic tiles after 24 hours and natural stones after 3 days.
- Patching and repairing floor screeds where rapid restoration is required.
- Preparation of screeds incorporating underfloor heating systems.

## TECHNICAL CHARACTERISTICS

**Topcem** is a special hydraulic binder which, when mixed with graded aggregates and water, has the property of hardening within 24 hours, and of completely drying within 7 days, independent of thickness.

## 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** solely with fine sand, use aggregates graded from 0 to 8 mm (for screeds up to 5-6 cm thick).

- Do not mix **Topcem** with an excessive quantity of water.
- Do not add water and remix **Topcem** after it has started to set.

## DIRECTIONS FOR USE

### Preparing the substrate

All substrates are suitable for receiving a **Topcem** screed. Isolate the substrate with a sheet of polyethylene or similar; in the case of rising damp provide a suitable waterproof membrane. For non floating screeds, which must therefore be bonded (from 10 to 35 mm), the existing substrate of cement, stone or ceramic tiles, must be dry, resistant to compression and tension, free of cracks, dust, loose material, oil, paint, wax and traces of gypsum. For other types of substrates consult Mapei's Technical Service.

### FLOATING SCREEDS (35 to 60 mm thick)

#### Preparing the mix

Carefully mix the **Topcem** with graded aggregates 0-8 mm in diameter and water, in a mixer or batcher 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 the start of the 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 itself to produce a closed and smooth surface without water surfacing.

**Topcem**, aggregates and water can be mixed using:

- a drum mixer;
- an ordinary concrete mixer;
- a screw mixer;
- a truck mixer;

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Mixing Topcem in a mini-batcher



Mixing Topcem with an automatic pumping unit



Batching a Topcem mix

• an automatic pressure pump. Mixing manually with a shovel is not recommended as it does not provide a good dispersion of the components of **Topcem** with the subsequent 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 works 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.

**On compressible substrates Topcem screeds should be reinforced with adequate steel mesh.**

## RECOMMENDED DOSAGE

<b>Topcem</b>	200 ÷ 250 kg/m <sup>3</sup>
Graded aggregates 0-8 mm in diameter	1650 ÷ 1800 kg/m <sup>3</sup>
Water	120 ÷ 140 kg/m <sup>3</sup> for dry aggregate. The amount of water could vary depending on the moisture in the aggregate

**OR:**

<b>Topcem</b>	one 20 kg bag
Graded aggregates 0-8 mm in diameter	140-160 kg
Water	10 ÷ 12 kg for dry aggregate. The amount of water could vary depending on the moisture in the aggregate

## Spreading the mix

The **Topcem** mix should be spread in the same way as a normal screed. A polyethylene insulating 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 its 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 2 cm 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 felt board, cork, polystyrene, etc.).

If the installation of the screed is interrupted away from a construction joint cut the screed straight down and insert pieces of 3-6 mm dia., 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 the laying and working of Topcem screeds compared to traditional cement screeds. However the ambient temperature influences the setting and drying times.**

## INTEGRAL SCREEDS (10 to 35 mm thick)

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

## DOSAGE OF THE ANCHORING SLURRY

<b>Planicrete</b>	1 part by weight
Water	1 part by weight
<b>Topcem</b>	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).

## 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

20 kg paper sacks.

## STORAGE

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

## SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

The product contains cement that, when in contact with sweat or other body fluids, produces an irritant alkaline reaction. Wear protective gloves and goggles. For further information consult the safety data sheet.

FOR PROFESSIONALS.

## WARNING

*Although the technical details and recommendations contained in this report 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 applications; 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.*

**All relevant references of the product are available upon request**

## TECHNICAL DATA (typical values)

### PRODUCT IDENTIFICATION

<b>Consistency:</b>	powder
<b>Colour:</b>	grey
<b>Apparent specific gravity (g/cm<sup>3</sup>):</b>	0.85
<b>Dry solid content (%):</b>	100
<b>Storage:</b>	12 months in original packaging in a dry place
<b>Hazard classification according to EEC 88/379:</b>	none
<b>Customs class:</b>	3824 50 90

### APPLICATION DATA (at +23°C - 50% R.H.)

<b>Mixing ratio:</b>	200 ÷ 250 kg of <b>Topcem</b> with 1 m <sup>3</sup> of aggregate (diameter from 0-8 mm) and 120-140 kg of water for dry aggregate
<b>Density of the mix (g/cm<sup>3</sup>):</b>	2.15
<b>Mixing time:</b>	5÷10 minutes
<b>Open time of mix:</b>	40÷60 minutes
<b>Application temperature:</b>	from +5°C to +35°C
<b>Set to light foot traffic:</b>	after 12 hours
<b>Ready for use:</b>	7 days
<b>Application of levelling compound:</b>	after 5-7 days
<b>Waiting time before installation:</b>	24 hours for ceramic tiles 3 days for stone material 7 days for resilients and wood
<b>Residual moisture after 7 days (%):</b>	< 2

### FINAL PERFORMANCE DATA

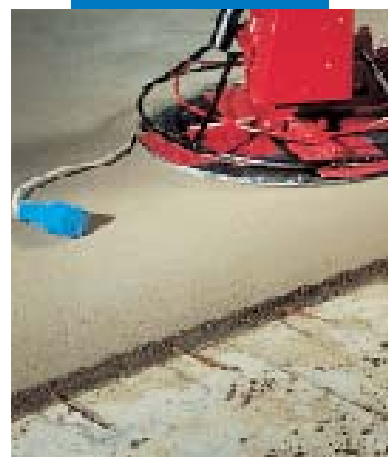
<b>Resistance to alkalis:</b>	excellent
<b>Resistance to oils:</b>	excellent (poor to vegetable oils)
<b>Resistance to solvents:</b>	excellent
<b>Temperature when in use:</b>	from -30°C to +90°C



*Preparing a levelling strip*



*Screeding Topcem*



*Power floating the surface of a Topcem screed*

# Topcem



Detail of a Topcem screed with reinforcement rods



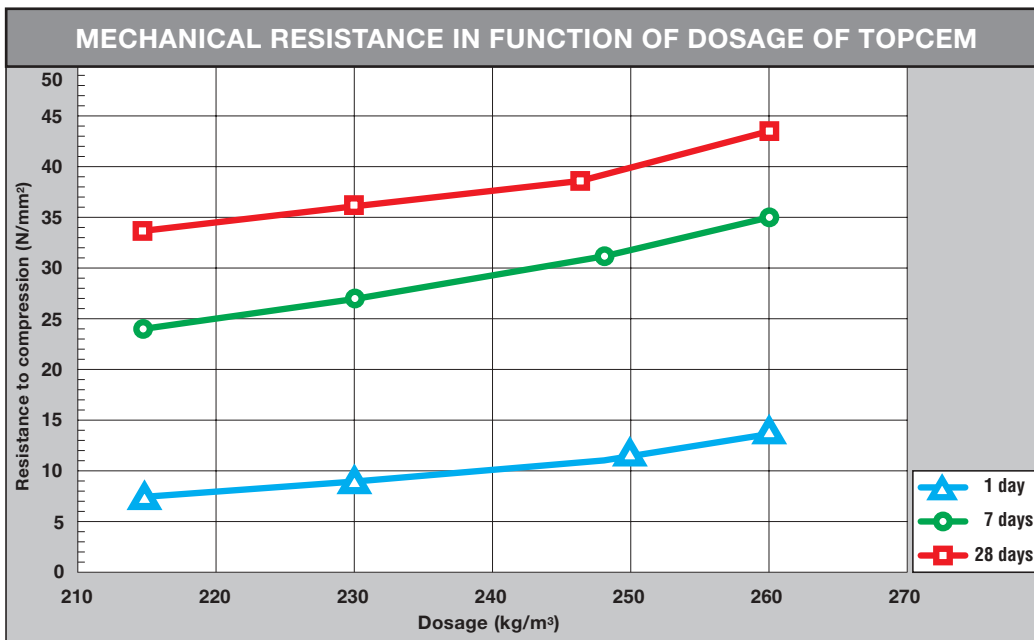
Mixing Topcem with Planicrete to make an anchoring slurry



Spreading the anchoring slurry for integral Topcem screeds

MECHANICAL RESISTANCE AND MOISTURE IN SCREEDS (35 mm) WITH TOPCEM (20 kg), GRADED DRY AGGREGATE 0-8 mm (160 kg) AND WATER (11 kg) AT +23°C - 50% R.H.		
TIME (days)	MECHANICAL RESISTANCE (N/mm <sup>2</sup> )	MOISTURE (%)
1	5	< 4
3	10	< 3
7	20	< 2
28	30	< 2

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



BUILDING THE FUTURE

## MAPEI GROUP CERTIFIED MANAGEMENT SYSTEMS (Quality, Environment and Safety)

MAPEI S.p.A. - ITALY

- CERTQUALITY No. 250/2
- The Mapei Environmental Management System ISO 14001 Mediglia, Italy plant CERTNECO No. 1230/1
- EMAS
- OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS MAPEI PLANT IN ROBBIANO DI MEDIGLIA (MI) OHSAS 18001 Standard Certificate No. 3586

CERTQUALITY No. 1517/1

MAPEI FRANCE

QMI No. 004157

MAPEI INC - CANADA

DNV No. 94-OSL-AQ-6236

RESCON MAPEI AS - NORWAY

EMAS

DNV No. 216 80 159

MAPEI KFT. - HUNGARY

CERTQUALITY No. 3358

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