

TOPCEM

Special prebagged, polymer-modified hydraulic binder for normal setting, fast drying (4 days) and controlled shrinkage screeds



WHERE TO USE

Formation of bonded, unbonded and floating screeds on both existing and new concrete prior to the installation of wood, PVC, linoleum, ceramic tiles, natural stone, reconstituted 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 which are set to accept light foot traffic after 12 hours and completely dry after 4 days, for laying resilient and wooden flooring;
- Formation of screeds onto which ceramic tiles can be laid after 24 hours and natural stone after 2 days;
- Patching and repairing floor screeds where rapid restoration is required;
- Preparation of screeds incorporating underfloor heating or cooling systems without the need for polymer additives.

TECHNICAL CHARACTERISTICS

Topcem is a special hydraulic binder that, when mixed with graded aggregates and water, can produce mortars that can harden in approximately 24 hours, and dry in approximately 4 days.

Topcem, when mixed in the correct proportions of correctly graded aggregate and mixing water, can produce a screed that complies with the relevant requirements of BS 8204-1:2003 and EN 13813:2002.

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** only with fine sand, use silt-free, correctly graded aggregates from 0 to 6 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.
- When working in high ambient temperatures, established hot weather practices such as; shading of stored material, use of shading, avoiding application during the hottest time of the day, and use of cool water when mixing should be observed.
- Where a faster setting and drying (3 to 24 hours) screed is required, use **Mapecem** or **Mapecem Pronto**.

APPLICATION PROCEDURE

Preparation of the substrate

Topcem is suitable for application to most types of substrates. For unbonded and floating screeds, isolate the substrate with a sheet of polyethylene or similar; in the case of rising damp provide a suitable waterproof membrane.

If the screed is not of the self-bearing type, existing cementitious, stone or ceramic substrates need to be dry, resistant to compression and tension, and free from cracks, dust, loose material, oil, paint, wax, and traces of gypsum. For other types of substrates consult MAPEI's Technical Service.

Unbonded Screeds (min 40 mm thick in accordance with BS 8204-1:2003)

Carefully mix the **Topcem** with graded aggregates 0-6 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 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 bleeding.

Topcem, aggregates, and water can be mixed using:

- a drum mixer;
- an ordinary concrete mixer;
- a screw mixer;
- a truck mixer;
- an automatic pressure pump.

Mixing manually, for example, with a shovel is not recommended as it does not permit good dispersion of the components including the polymers of **Topcem** 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.

On compressible substrates, Topcem screeds must be thick enough and/or should be reinforced with adequate steel mesh.

Recommended Dosage

Topcem	200-250 kg/m ³
Graded aggregates 0-6 mm in diameter	1600-1800 kg/m ³
Water	110-130 kg/m ³ for dry aggregate. The amount of water could vary depending on the moisture in the aggregate
or:	
Topcem	one 20 kg bag
Graded aggregates 0-6 mm in diameter	160-180 kg
Water	11-13 kg for dry aggregate. The amount of water could vary depending on the moisture in the aggregate

Topcem screeds using correctly graded aggregates in the correct proportions can provide a workable screeding mortar with good compaction and complying with BS 8204-1 & EN 13813.

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.

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 20mm 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 centimeter 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 day joint vertically through the screed 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 (10 to 40 mm thick) [design thickness in accordance with BS 8204-1:2003]

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

Bonding Slurry mix design

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).

Floating Screeds (min. 55 mm thick) [design thickness in accordance with BS 8204-1:2003]

The screed mix is prepared and applied in the same way as an unbonded screed. The insulation should have a high resistance to compression and not depress more than 3 mm under the anticipated final load.

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

Note on stated thicknesses: Thicknesses stated do not refer to material application limitations, rather are in compliance with established screed standards such as BS 8204 and EN 13813

Measuring the moisture content

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

Cleaning

Tools can be cleaned with water.



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

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 aggregates, consumption is 2-2.5 kg/m²/cm of thickness.

PACKAGING

20 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Topcem** has a shelf life and or high humidity conditions the shelf life of 12 months. If stored at high temperature may be reduced.

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Topcem is an irritant; that contains cement that when in contact with sweat or other body fluids causes irritant alkaline reactions and allergic reactions to those predisposed. During use wear protective gloves and goggles and take the usual precautions for handling chemicals. If the product comes in contact with eyes or skin, wash immediately with plenty of water and seek medical attention.

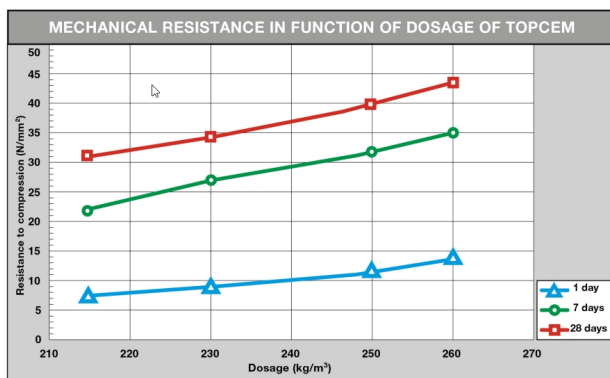
For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

TECHNICAL DATA (typical values)	
PRODUCT IDENTIFICATION	
Consistency:	powder
Colour:	grey
Bulk density (kg/m ³):	850
Dry solids content (%):	100
APPLICATION DATA (at +23°C - 50% R.H.)	
Mixing ratio:	200-250 kg of Topcem with 1 m ³ of aggregate (diameter from 0-6 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 +40°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	
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 0-6 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 rapid hydrating binder, however workability is comparable with a normal cement screed.



IMPORTANT NOTES

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 installers 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 specifications. The installer 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.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into other project-related documents, 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.com.

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

All relevant references for the product are available upon request and from www.mapei.com

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