TOPCEM PRONTO

Pre-blended mortar for screeds with high thermal conductivity, normal setting, controlled shrinkage and quick drying. Ideal for heated floors





EN 13813 · CT C30-F6 A1FL · λ=2.0 W/mK EN 12664 · GEV-EMICODE EC 1 PLUS very low emission · Fast Track Ready

BENEFITS AND FEATURES

- High thermal conductivity, ideal for heated screeds
- Quick-drying
- High mechanical strength
- Negligible hygrometric shrinkage

CLASSIFICATION ACCORDING TO EN 13813

Screeds prepared with **Topcem Pronto**, in accordance with the specifications described in this technical data sheet, are classified as CT - C30 - F6 - A1FL, in compliance with the European standard EN 13813.

WHERE TO USE

Formation of uncoupled, unbonded, heating and bonded screeds on new and existing slabs in interior and exterior prior to installing wood, PVC, linoleum, ceramics, natural stone, carpet or other floor coverings in areas where fast drying screeds are required in order to install floorings in a short time.

Some application examples

- Forming high thermal conductivity heating screeds without the need for admixtures.
- Forming quick-drying (< 2% R.H. after 4 days) screeds that are set for foot traffic in 12 hours and completely dry in 4 days, ideal for installing flooring sensitive to moisture such as wood parquet and resilient flooring such as rubber, PVC, linoleum, etc.
- Forming screeds that are ready to receive ceramic tiles after 24 hours and natural stone flooring after 2 days.
- Repairing screeds in areas where it is required to lay floorings in a short time (e.g. supermarkets, shops, residences, offices, etc.).

TECHNICAL CHARACTERISTICS

Topcem Pronto is a pre-blended, quick-drying mortar with normal setting, controlled shrinkage and high mechanical strength based on a special hydraulic binder and graded aggregates according to a formula developed in MAPEI's Research & Development laboratories.

Topcem Pronto is characterised by high thermal conductivity (λ = 2W/mK), which makes it particularly suitable for laying heating screeds on which after only 4 days it is possible to carry out the first system start-up cycle according to the procedure indicated in EN 1264-4.

Topcem Pronto has setting times similar to those of traditional cementitious mortars but with significantly reduced waiting times before floor coverings can be installed.

The environmental impact of **Topcem Pronto** during its entire life cycle has been measured using LCA (Life Cycle Assessment) method and the results are reported in the EPD (Environmental Product Declaration in compliance with ISO 14025 and EN 15804 standards) N° S-P-00910, certified and published by EPD International.

Topcem Pronto has very low emissions of VOC (Volatile Organic Compounds) emissions, ensuring the health and safety of both applicators and end users, and is EC1^{Plus} certified.
Topcem Pronto contributes achieving significant LEED credits.

RECOMMENDATIONS

- Do not use **Topcem Pronto**on substrates subject to rising damp (interpose a vapour barrier such as **Mapefoil VB 120**)
- Do not mix **Topcem Pronto** with other binders (e.g. **Mapecem**, Topcem, cement, lime, gypsum, etc.) and aggregates.
- Mix **Topcem Pronto** with the correct amount of water.
- Do not add water and do not mix **Topcem Pronto** when it has already started to set.
- Do not wet the surface of the screed made with **Topcem Pronto**.
- When there are waterproofing systems made from prefabricated flexible membranes present (such as a bitumen membrane), the insulating layer placed between the floor slab and the screed must be made from material permeable to water vapour (e.g. PP geotextile or low density non-woven fabric).

APPLICATION PROCEDURE

TECHNICAL INFORMATION FOR THE APPLICATION	
Composition of the mix:	100 kg of **Topcem Pronto** 6.8 L of water
Recommended application temperature range:	surrounding and substrate temperature from +5°C to +35°C
Pot life of mix:	60 mins. (at +20°C - 55% R.H.)
Set to foot traffic (*):	after 12 hours
Ready for skimming (*):	1 to 4 days depending on the type of floor to be laid
First system start-up cycle according to UNI EN 1264-4 (*):	after at least 4 days of curing
Waiting time before application of the covering (*):	- 24 hours for ceramic tiles - 2 days for natural stone - 4 days for resilient and wooden coverings

(*) The data refer to screeds up to 4 cm thick applied at +20°C and 55% R.H.
Note: for screeds thicker than 4 cm, drying times may increase by approximately 7–10 days for every additional centimetre of thickness.

Preparing of the substrate

All substrates are suitable to receive **Topcem Pronto** screed as long as they are not subject to rising damp. In such cases, a suitable waterproofing sheet (such as **Mapefoil VB 120**) should be added.

In the case of non-load-bearing screeds that require bonding (10–35 mm thick), the substrate must be dry, mechanically sound, free of cracks, and free from dust, loose or friable parts, paint, wax, oil, traces of gypsum, or any other substance that could affect adhesion.

Preparing the mix

Topcem Pronto mix can be prepared with:

- planetary mixer;
- traditional concrete mixer;
- screw mixer;
- automatic pressure pump.

Mix one 25 kg bag of **Topcem Pronto** with 1.7 liters of water for at least five minutes. Do not modify the amount of mixing water; the product's final performance properties could be affected. When mixing, it is possible to add **Mapefibre ST30**, which makes it possible to replace the use of metal reinforcement mesh, improves flexural strength, load distribution and favours the dissipation of internal stresses in the screed generated by hygrometric shrinkage.

The mix should have a "damp earth" consistency and must be spread, tamped and levelled in order to get a closed and smooth surface without water bleed.

UNBONDED SCREEDS

(from 30 to 80 mm thick)

The mix of **Topcem Pronto** should be applied on top of an uncoupling layer of polythene sheets or similar materials, so that an easy-flowing layer between the screed and the existing substrate is created. If rising damp is present, the aforementioned uncoupling layer must be made using material which also acts as a vapour barrier, such as **Mapefoil VB 120**, sealing the sheets with suitable adhesive tape where they overlap by at least 10 cm and turning them up along the walls to a height above the finished floor level.

If **Topcem Pronto** is used above system pipes, make sure the screed is at least 2 cm thick, it has alight metal reinforcement (e.g., with hexagonal meshes), or alternatively it is reinforced by adding **Mapefibre ST30.**

At the perimeter of the room and around any pillars passing through the floor, it is advisable to place uncoupling material, such as **Mapesilent Band R 50/100**, that reaches at least the height of the finished floor.

If installation of the screed is interrupted, insert pieces of 3-6 mm diameter steel bar at least 20-30 cm long at a pitch of 20-30 cm into the screed to guarantee the second pour welds perfectly to the first pour, preventing the formation of cracks or steps.

The use of special structural fibres such as **Mapefibre ST30** (2 kg/m^3 to be added to the mix of **Topcem Pronto**) or the placement of an electrowelded reinforcing mesh at mid-thickness is recommended to improve flexural strength, load distribution and favour the distribution of the screed's internal stress generated by hygrometric shrinkage.

The surrounding temperature affects setting and drying times.

FLOATING SCREEDS

(from 35 to 80 mm thick)

Topcem Pronto must be applied over insulating layers (soundproofing – such as **Mapesilent Comfort H10** – or thermal) and uncoupling layers (such as **Mapefoil VB 120**) so that an easy-flowing layer between the screed and the existing substrate is created. If rising damp is present, the aforementioned layers must be made using material that act as a vapour barrier.

The parts of screed made of **Topcem Pronto**, covering pipes, must be reinforced by laying a lightweight metal mesh (e.g., with hexagonal meshes) above the through elements ensuring a minimum cover thickness of at least 2 cm, or alternatively reinforce with the addition of **Mapefibre ST30**.

The application of **Topcem Pronto** screeds is carried out using the same technique as for cementitious screeds, i.e. by preparing level guides, spreading the mix, compacting it thoroughly and trowelling to achieve a better surface finish.

Along the perimeter of the room and around any pillars passing through the floor, it is advisable to place compressible material such as **Mapesilent Band R 50/100**, before pouring the concrete, ensuring that it reaches at least the level of the finished floor.

If necessary, apply a vapour barrier, such as **Mapefoil VB 120**, sealing with suitable adhesive tape the sheets to be overlapped by at least 10 cm, turning them up along the walls up to beyond the height of the finished floor.

If installation of the screed is interrupted, insert pieces of 3-6 mm diameter steel bar at least 20-30 cm long at a pitch of 20-30 cm into the screed to guarantee the second pour welds perfectly to the first pour, preventing the formation of cracks or steps.

The use of special structural fibres such as **Mapefibre ST30** (2 kg/m^2 to be added to the mix of **Topcem Pronto**) or the placement of an electrowelded reinforcing mesh at mid-thickness is recommended to improve flexural strength, load distribution and favour the distribution of the screed's internal stress generated by hygrometric shrinkage.

On average, more time is available for laying and applying Topcem Pronto screeds than with traditional cementitious screeds. The surrounding temperature affects setting and drying times.

HEATED SCREEDS

(from 30 to 80 mm thick)

If required, place the underfloor heating/cooling system on a flat, dry and clean substrate, following the manufacturer's installation instructions and EN 1264-4 standard: *"Water based surface embedded heating and cooling systems - Part 4: Installation"*.

Along the perimeter walls and vertical elements, prepare a band of compressible material, such as **Mapesilent Band HS**, reaching at least the elevation of the finished floor.

If necessary, apply a vapour barrier, such as **Mapefoil VB 120**, sealing with suitable adhesive tape the sheets to be overlapped by at least 10 cm, turning them up along the walls up to beyond the height of the finished floor.

The thickness of **Topcem Pronto** screed must be set according to the compressibility of the underlying layers, the expected loads under operating conditions and the type of coating planned, providing in any case a minimum thickness of 3 cm above the pipes or embosses of the heating panel.

It is advisable to use a reinforcement such as the laying of an electrowelded mesh, or equally effective system such as **Mapefibre ST30**, to be placed over the heating panel.

After a curing period of at least 4 days, the first ignition cycle of the heating system should be carried out according to the procedure prescribed in EN 1264-4.

BONDED SCREEDS

(from 10 to 80 mm thick)

Compact screeds must be bonded to the substrate, which may be either cement-based or an old ceramic or stone material floor.

For other types of substrate, please refer to MAPEI Technical Services Department.

After proper preparation of the substrate, immediately before the application of **Topcem Pronto** mix, prepare the adhesion slurry with **Planicrete**, according to the proportions reported in the table below, applying it in a continuous and uniform layer (approximately 2-3 mm) by brush, sweeping brush or trowel.

In order to ensure perfect adhesion, spread **Topcem Pronto** mortar over the slurry while still wet (wet on wet).

If the floor is subjected to high mechanical stresses, the construction joint must be made with **Eporip** instead of the cementitious slurry prepared with **Planicrete**.

Spread **Topcem Pronto** mix using the same method describerd above.

Dosing of cementitious slurry prepared with Planicrete

Planicrete:	1 part by weight
Water:	1 part by weight
Topcem	3 parts by weight

MEASURING MOISTURE CONTENT

Measurements with electrical resistance hygrometers give unreliable values on screeds made with **Topcem Pronto**. Therefore, a carbide hygrometer, which provides absolute moisture data by weight, is absolutely necessary to monitor residual moisture (UNI 10329).

CONSUMPTION

The consumption of **Topcem Pronto** is about 18-20 kg/m² per cm thickness depending on the compaction degree.

CLEANING

Tools can be cleaned with water.

PACKAGING

Topcem Prontois available in 25 kg bags.

STORAGE

Topcem Pronto stored in a dry place is stable for at least 12 months.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY	
Definition according to EN 13813:	CT-C30-F6

Consistency:	powder
Colour:	grey
Maximum size of aggregate:	2.8 mm
GEV certification:	EMICODE EC1 Plus – very low emission;

TECHNICAL INFORMATION FOR PRODUCT PREPARATION

Composition of the mix:	100 parts by weight of **Topcem Pronto** with 6.8% of water
Preparation of mix:	mixing according to EN 13892-1

CHARACTERISTICS OF FRESH MIX (at +20°C - 55% R.H.)

Colour of the mix:	grey
Density of the mix:	2,100 kg/m³ depending on the compaction degree

FINAL PERFORMANCE

According to the curing defined in the test methods

Performance characteristic	Test method	Requirements EN 13813	Product performance *
Compressive strength:			
- 1 day			> 8 N/mm²
- 4 days	EN 13892-1	-	> 15 N/mm²
- 7 days			> 22 N/mm²
- 28 days			> 30 N/mm²
Compressive strength class:	EN 13892-1	≥ C5	**C30**
Flexural strength			
- 1 day			> 3 N/mm²
- 4 days	EN 13892-1	-	> 4 N/mm²
- 7 days			> 5 N/mm²
- 28 days			> 6 N/mm²
Flexural strength class:	EN 13892-1	≥ F1	**F6**
Residual moisture:	EN 13892-1		
-1 g		-	< 3.5%
-4 days			< 2.0%
Thermal conductivity:	EN 12664	not required	**λ = 2.008 W/mK**
Resistance to moisture:	-	not required	**excellent**
Resistance to ageing:	-	not required	**excellent**

Resistance to solvents and oils:	-	not required	**excellent**
Resistance to acids and alkalis:	-	not required	**poor**
Resistance to temperature:	-	not required	**from -30°C to +90°C**
Flexibility:	-	not required	**no**
Reaction to fire:	EN 13501-1	Euroclass	**$A1_{FL}$**

Note: Specimens intended for mechanical strength tests are prepared in accordance with EN 13892-1 following a manual procedure to achieve maximum mortar compaction.

Drying times refer to screeds up to 5 cm thick; for thicker screeds, drying times may increase by about 7-10 days for each additional cm of thickness.

WARNING

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.

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

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