

PLANICRETE

Synthetic-rubber latex to improve the adhesion of cement mixes



WHERE TO USE

- As an admixture to improve the mechanical and adhesive characteristics of cement-based screeds, renders and thin smoothing layers.
- As an admixture for highly adhesive cement bonding slurries.

Some application examples

- High strength cement screeds for interior and exterior use.
- Cementitious bonding slurry for installing natural stone using the **Mapestone** system.
- High strength cement renders for interiors and exteriors.
- Cementitious bonding slurry to improve adhesion of conventional bonded screeds and screeds made from **Mapecem Pronto** or **Topcem Pronto**.
- Bonding slurry made from **Mapecem** or **Topcem** to improve adhesion of bonded screeds made from the same types of binder.
- Adhesive shotcretes for bonding renders.
- Cement mortars for filling holes, reconstructing damaged areas and finishing surfaces on buildings and precast concrete elements.
- Cementitious mortar for finishing off surfaces subjected to high levels of abrasion (industrial floors, ramps, channels) and for integrating small areas of worn floors.

TECHNICAL CHARACTERISTICS

Planicrete is a highly stable water dispersion of a special synthetic elastomer resistant to alkaline saponification, characterised by its low glass transition temperature. This special SBR (styrene-butadiene rubber) based elastomer also has a special property which makes it stable after ageing. The polymer chains forming this elastomer are characterised by a tight weave of chemical binders which connect them together. This important characteristic enables the polymer chains to take up a parallel conformation when they are deformed, thus giving the elastomer a high level of elasticity.

Planicrete is supplied in the form of a highly fluid, white coloured latex which, when added to cement and aggregate mixes, improves their adhesion, plasticity, thixotropy, water retention and overall workability. After setting and hardening, cementitious mixes with added **Planicrete** have the following properties:

- better adhesion to substrates;
- higher compressive and flexural strengths;
- higher resistance to abrasion;
- higher impermeability;
- better resistance to freeze-thaw cycles;
- better resistance to diluted acids, saline solutions and oils.

RECOMMENDATIONS

- Do not use pure **Planicrete** as a primer or a slurry: always mix it with Portland cement or, if necessary, with **Mapecem** or **Topcem**.
- Do not use mixes containing **Planicrete** if the ambient temperature is lower than +5°C or higher than +40°C.
- After application in very warm or windy conditions, protect the surfaces from excessively fast drying.

- The use of **Planicrete** in mortar and concrete nevertheless requires strict observance of all the measures taken to ensure a job well done, especially the use of aggregates with particle sizes suitable for the thickness to be applied, the w/c ratio.
- If the mixes with **Planicrete** are prepared in a concrete mixer, never mix for more than 3 minutes, to avoid any excessive air entrainment.

APPLICATION PROCEDURE

Preparation of the substrate

The surfaces on which screeds, render and smoothing layers modified with **Planicrete** are to be laid must be solid, compact and clean.

Crumbling and loose parts, dust, concrete crusts, traces of oil or form-release agents and paint must be removed by careful sandblasting, brushing or pressure washing with water.

The substrate must then be thoroughly wetted but no excess water should be left on the surface as it may affect adhesion.

Bonding screeds from 10 to 35 mm

Planicrete can be used as an admixture for the preparation of bonding interior and exterior screeds with special adhesion and resistance.

Recommended mixing ratio:

Planicrete	45 kg	50 kg
Water	135 kg	150 kg
Portland cement	350 kg	400 kg
Aggregates	1550 kg	1500 kg

The aggregate blend must have a diameter appropriate to the screed thickness: a maximum diameter, therefore, of 1/3-1/4 of the thickness of the screed with a limit of 8 mm.

N.B. Before laying, apply a **Planicrete** and cement slurry to ensure perfect adhesion to the existing cement surface. Do not wait for the slurry to dry: cast fresh screed on to fresh slurry.

Floating screeds

(minimum thickness 35 mm)

In this case, it is advisable to dilute **Planicrete** 1:4 with water and to use a slightly smaller proportion of cement.

Recommended mixing ratio:

Planicrete	30 kg	35 kg
Water	120 kg	140 kg
Cement	300 kg	350 kg
Mixed aggregates (0-8 mm)	1600 kg	1550 kg

The curing time for these screeds is at least two weeks in normal temperature and humidity conditions.

N.B. This mix can also be used for conventional ceramic-tile laying, if necessary adapting the aggregate particle size to the required thickness.

Preparation of render

Planicrete may also be used as an admixture for internal and external cementitious-based render. Apart from improving the mortar's thixotropy and impermeability to water, adding **Planicrete** to the mix also improves its adhesion to substrates and resistance to atmospheric agents.

The recommended mix is as follows:

- **Planicrete** 1 kg
- Water 4 kg
- Cement 5.5 kg
- Aggregates (0-3 mm) 20 kg

We recommend applying a scratch-coat layer with the following mix before rendering to even out the absorbency of the substrate and improve adhesion of the mortar:

- **Planicrete** 1 kg

- Water 1 kg
- Cement 3.5 kg
- Aggregates (0-2 mm) 3.5 kg

If ready-mixed rendering mortar is preferred, use **Nivoplan** ready-mixed, white or grey levelling mortar made from cement, selected aggregates and special synthetic resin, applied in layers 2 cm thick. In this case, mix **Planicrete** with **Planicrete** diluted at a rate of 1:5 with water.

Preparation of mortar for filling cavities

Planicrete may be used to great advantage as an admixture when making filler mortar. This product gives the mortar excellent thixotropy which makes it easier to apply on walls and ceilings. Adding **Planicrete** also improves the mortar's adhesion and performance characteristics.

The recommended mix for this type of application is as follows:

- **Planicrete** 1 kg
- Water 2.5 kg
- Cement 8 kg
- Aggregates (0-3 mm) 16-24 kg

Bonding slurries

Planicrete is particularly suitable for making bonding slurries to be applied before screeds and plasters on to existing cement surfaces.

N.B. Planicrete-based slurry is also suitable as a slurry for laying Mapecem Pronto or Topcem Pronto bonding screeds.

Recommended mixing ratio:

- **Planicrete** 1 kg
- Water 1 kg
- Cement 4 kg

In the case of screeds in **Mapecem** or **Topcem** apply the doses in the following table:

	Topcem	Mapecem
Planicrete (kg)	1	1
Water (kg)	1	1
Binder (kg)	3	2

Mixing

Dilute **Planicrete** with water in a suitable container in the ratio recommended for the specific application, pour the solution into the concrete mixer and add the cement and aggregates, preferably already mixed or partially mixed so as to avoid lumps, which are difficult to disperse.

Mix for 2-3 minutes until the mix is smooth and even but do not over-mix.

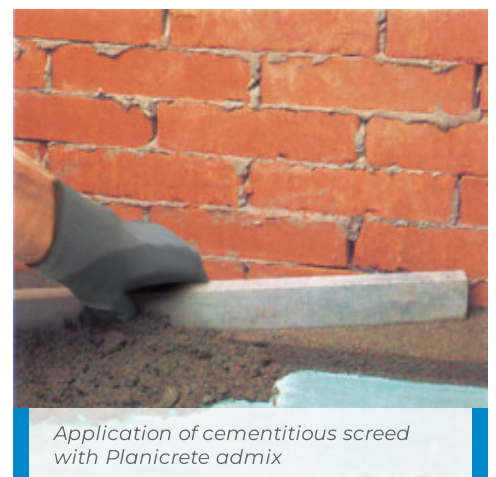
The setting time for mixes containing **Planicrete** as an admix does not differ significantly from normal mixes. Workability is usually slightly longer.



Adhesive render admixed with Planicrete



Application of cementitious grout with Planicrete admix



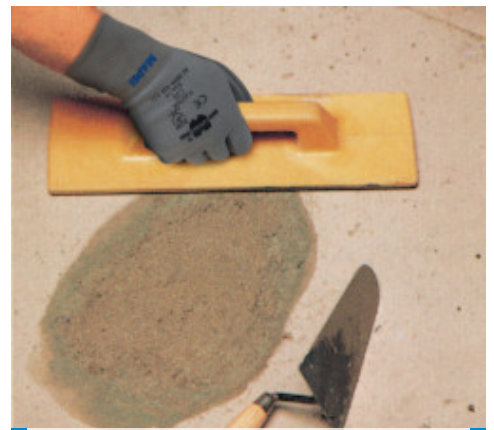
Application of cementitious screed with Planicrete admix



Floor patching: application of slurry



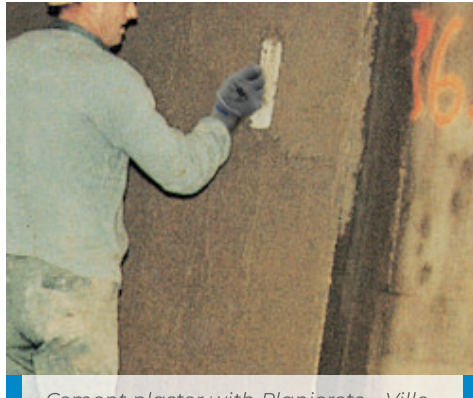
Floor patching: application of mortar



Floor patching: final smoothing



Base-keying mortar layer with Planicrete admix



Cement plaster with Planicrete - Ville Marie motorway tunnel, Montreal, Canada



External cementitious screed with Planicrete admix - Vieux Port, Quebec, Canada

PRECAUTIONS TO BE TAKEN AFTER THE APPLICATION OF PLANICRETE

After application, especially in very warm or windy weather conditions, mortars made with **Planicrete** as an admix must be cured carefully to avoid fast water evaporation, which could cause surface cracks due to plastic shrinkage. Spray water on to the surface during the first hours of curing or protect it with suitable sheeting.

CLEANING

Tools used for mixing and applying slurries or mortars made with **Planicrete** as an admix can be cleaned with water before setting begins.

After hardening, they can only be cleaned by mechanical means.

PACKAGING

Planicrete is available in 25, 10 and 5 kg tanks and 12x1 kg packages.

DOSAGE AND COVERAGE TABLE

WHERE TO USE	Planicrete water/ratio	Cement/aggregate ratio (in weight)	Mixed aggregates in granulometric curve	Consumption of Planicrete (g/m ² /mm of thickness)
Bonding screeds (thickness 10 to 35 mm)	1:3	1:4	0÷8 mm	40-50
Floating screeds (thickness > 35 mm)	1:4	1:5	0÷8 mm	30-40
Renders	1:4	1:3.6	0÷3 mm	60-70

Renders with Nivoplan	1:5	–	–	70-80
Scratch-coat layers for renders	1:1	1:1	0÷2 mm	220-230
Filler mortar	1:2.5	1:3	0÷3 mm	50-60
Bonding slurry	1:1	–	–	300-310

N.B.: The dilution ratios of Planicrete with water are for dry aggregates. Should the aggregates be damp or wet, the dilution proportions of Planicrete should be decreased.

STORAGE

24 months in unopened original packing. Protect from frost.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Planicrete is not considered dangerous according to the current regulation regarding the classification of mixtures. It is recommended to wear protective gloves and goggles and to take the usual precautions taken for the handling of chemicals.

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

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Consistency:	fluid liquid
Colour:	white
Density (g/cm³):	1.02
pH:	8
Dry solids content (%):	36
APPLICATION DATA	
Mix ratio:	see relevant table
Application temperature:	from +5°C to +40°C
Final cure-time:	depending on mix ratio
FINAL PERFORMANCE	
Composition of the mortar:	Cement: Type 32.5 R II/A-L 900 g Aggregates: standardised sand 2700 g Admix: Planicrete 112.5 g Water: 292.5 g
Density of mix (kg/m³):	2,000

Compressive strength according to the EN 12190 (MPa): – after 1 day: – after 7 days: – after 28 days:	7 25 33
Adhesion to substrate according to EN 1542 (+21°C - 50% U.R.) (MPa): – after 28 days:	> 2.0
Resistance to damp:	excellent
Resistance to ageing:	excellent
Resistance to solvents and oils:	mediocre
Resistance to acids and alkalis:	fair
Resistance to temperatures:	from -30°C to +90°C

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. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

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

701-6-2015-I-gb

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