

# Planicrete

## Synthetic-rubber latex for cement mixes



### WHERE TO USE

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

### Some application examples

- High strength cement screeds for interior and exterior use.
- Cement mortars for laying ceramic tiles using traditional techniques.
- High strength cement renders for interiors and exteriors.
- Adhesive cement slurries for bonding screeds (also with **Mapecem**, **Mapecem Pronto**, **Topcem**, **Topcem Pronto**).
- Adhesive shotcretes for bonding renders.
- Cement mortars for filling holes, reconstructing damaged areas and finishing surfaces on buildings and precast elements in concrete.
- Cement mortars for finishing surfaces subject to heavy abrasion (industrial flooring, ramps, canals).

### TECHNICAL CHARACTERISTICS

**Planicrete** is a water dispersion of a special synthetic elastomer, totally resistant to alkaline saponification. It is a very fluid, greenish-white latex which, when mixed with aggregates and Portland cement, improves their plasticity, water retention capacity and trowellability in general. After setting and final curing, cement mixes modified with **Planicrete** have a stronger bond to all surfaces, have better resistance to flexing and abrasion, are more impermeable and become resistant to

freeze-thaw cycles. They are also more flexible and have better chemical resistance to diluted acids and alkalis, salt solutions, and oils.

### RECOMMENDATIONS

- Do not use pure **Planicrete** as a primer or a slurry: always mix it with Portland cement or, if required, with **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.
- 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 being applied.
- If mixes with **Planicrete** are prepared in a concrete mixer, never mix for more than 3 minutes, so as to avoid any excessive air entrainment.

### APPLICATION PROCEDURE

#### Preparing 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, 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.

# Planicrete



Adhesive render admixed with Planicrete



Application of cementitious grout with Planicrete admix



Application of cementitious screed with Planicrete admix

## Preparing the mixes

### Levelling screeds up to 10 mm

**Planicrete** can be used as an admix for the preparation of highly adhesive and resistant interior and exterior levelling screeds with special adhesion and resistance.

#### Recommended mixing ratio:

**Planicrete** 1 part by weight  
**Water** 1 part by weight  
**Keracrete Powder** 7-8 parts by weight

**Keracrete Powder** grey and **Keracrete Powder** white, available in 25-kg bags, are ready-prepared mixes having a 1:1 ratio of grey or white cement and fine siliceous sand. **Planicrete** can also be mixed with a 1:1 ratio of fine (0-2 mm) sand and cement.

**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 onto fresh slurry.

### Adhesive screeds from 10 to 35 mm

**Planicrete** can be used as an admix for the preparation of adhesive interior and exterior screeds with special adhesion and resistance.

#### Recommended mixing ratio:

**Planicrete** 45-50 kg  
**Water** 135-150 kg  
**Portland cement** 350-400 kg  
**Aggregates** 1 m<sup>3</sup>

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** 30-35 kg  
**Water** 120-140 kg  
**Cement** 300-350 kg  
**Mixed aggregates (0-8 mm)** 1 m<sup>3</sup>

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.

## Renderers

**Planicrete** can be used as an admix for cement-based wall mortars for both interior

and exterior use. The result is very good adhesion to the substrate, better waterproofing, increased resistance to atmospheric agents and greater flexibility.

#### Recommended mixing ratio:

**Planicrete** 1 part by weight  
**Water** 4 parts by weight  
**Cement** 5 parts by weight  
**Aggregates** 15 parts by weight.

To improve adhesion, a scratch coat is usually applied, consisting of:

**Planicrete** 1 part by weight  
**Water** 1 part by weight  
**Cement** 3 parts by weight  
**Sand** 3 parts by weight

If a pre-mixed render is desired, **Nivoplan** can be used. **Nivoplan** is a white or grey levelling mortar for walls. It is made of cement, selected aggregates and special synthetic resins. A maximum 2 cm thickness should be applied at a time. **Nivoplan** should be mixed with **Planicrete** diluted 1:5 with water.

## Mortars for filling holes

For these applications, it is advisable to dilute 1 part of **Planicrete** with 2 parts of water and prepare the mortar with a mix of 1 part of cement with 2-3 parts of aggregates with the appropriate particle size.

## Adhesive 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**, **Mapecem Pronto**, **Topcem** and **Topcem Pronto** adhesive screeds.

#### Recommended mixing ratio:

**Planicrete** 1 part by weight  
**Water** 1 part by weight  
**Portland cement** 2 parts by weight

In the case of screeds in **Mapecem**, **Mapecem Pronto**, **Topcem** and **Topcem Pronto**, respect the doses in the following table:

	Topcem	Topcem Pronto	Mapecem	Mapecem Pronto
<b>Planicrete</b> (parts by weight)	1	1	1	1
<b>Water</b> (parts by weight)	1	1	1	1
<b>Binder</b> (parts by weight)	3	12	2	8

## 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.

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

<b>Consistency:</b>	fluid liquid
<b>Colour:</b>	greenish white
<b>Density (g/cm<sup>3</sup>):</b>	1.02
<b>pH:</b>	10
<b>Dry solids content (%):</b>	40
<b>Brookfield viscosity (mPa·s):</b>	40
<b>Storage:</b>	12 months in unopened original packing; protect from frost
<b>Hazard classification according to EC 1999/45:</b>	none. Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
<b>Customs class:</b>	4002 11 00

### APPLICATION DATA

<b>Mix ratio:</b>	see relevant table
<b>Application temperature:</b>	from +5°C to +40°C
<b>Final cure-time:</b>	depending on mix ratio

### FINAL PERFORMANCE

<b>Mechanical characteristics:</b>	Compressive strength and flexural strength tests were carried out on pyramid sample pieces in compliance with EN 196/1 and EN 12190 standards	
<b>Composition of the mortar:</b>	Cement: Type 32.5 R II/A-L	900 g
	Aggregates: standardised sand	2700 g
	Admix: <b>Planicrete</b>	112.5 g
	Water:	292.5 g
<b>Density of mix (kg/m<sup>3</sup>):</b>	2,200	
<b>Compressive strength (N/mm<sup>2</sup>):</b>		
- after 1 day:	8	
- after 7 days:	25	
- after 28 days:	37	
<b>Flexural strength (N/mm<sup>2</sup>):</b>		
- after 1 day:	3	
- after 7 days:	6	
- after 28 days:	8	
<b>Adhesion to substrate measured by pull-off test on concrete according to EN 1542 (N/mm<sup>2</sup>):</b>		
- after 28 days:	> 2.0	
- after 7 days + 21 days in water:	> 2.0	
- after 7 days + 14 days at +70°C:	> 2.0	
<b>Resistance to damp:</b>	excellent	
<b>Resistance to aging:</b>	excellent	
<b>Resistance to solvents and oils:</b>	mediocre	
<b>Resistance to acids and alkalis:</b>	fair	
<b>Resistance to temperatures:</b>	from -30°C to +90°C	



*Floor patching:  
application of slurry*



*Floor patching:  
application of mortar*



*Floor patching: final  
smoothing*

## DOSAGE AND COVERAGE TABLE

APPLICATION	Ratio of Planicrete to water	Ratio of cement to aggregate (by weight)	Maximum Ø of aggregate	Planicrete Coverage
Levelling screeds up to 10 mm	1:1	1:1	3 mm	150 g/m <sup>2</sup> /mm of thickness
Adhesive screeds from 10 to 35 mm	1:3	350-400 kg/m <sup>3</sup> of aggregates	6-8 mm	50 g/m <sup>2</sup> /mm of thickness
Floating screeds (> 35 mm)	1:4	300-350 kg/m <sup>3</sup> of aggregates	8 mm	30 g/m <sup>2</sup> /mm of thickness
Renders	1:4	1:3	8 mm	70 g/m <sup>2</sup> /mm of thickness
Renders with Nivoplan	1:5	–	–	70 g/m <sup>2</sup> /mm of thickness
Renders for plasters	1:1	1:1	3 mm	200-250 g/m <sup>2</sup> /mm
Mortars for filling	1:2	1:2-1:3	acc. to needs	100 kg/m <sup>3</sup>
Adhesive slurries	1:1	Portland cement*	–	200-300 g/m <sup>2</sup>

**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.

\* For dosing bonding slurry made using special binders or pre-blended MAPEI mortar, refer to the table on the previous pages.



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

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

### 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 drums of 25, 10, 5 and 1 kg.

### Storage

12 months in unopened original packing. Protect from frost.

### SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Planicrete** is not considered as dangerous

according to the European regulation regarding the classification of preparations. It is however recommended to use protective gloves, eyes protection and to take the usual precaution taken when handling chemical products.

The Safety Data Sheet is available upon request for professional users.

PRODUCT FOR PROFESSIONAL USE.

### 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 use of the product.*

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



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