

701/3.99

® PLANICRETE

SYNTHETIC-RUBBER LATEX FOR CEMENT MIXES



- Adhesive slurries for new on old concrete.
- Adhesive cement slurries for bonding screeds (also with MAPECEM).
- Adhesive shotcretes for bonding renders.
- Cement mortars for filling holes, reconstructing damaged parts 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 runny, 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 are more adhesive to all surfaces, have better resistance to flexion 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.

WHERE TO USE

- As an admixture to improve mechanical and adhesive characteristics of cement mixes for screeds, renders, small-thickness plasters, etc.
- As an admixture for highly adhesive cement bonding slurries.

Typical Applications

- High strength cement screeds for interior and exterior use.
- Cement mortars for laying ceramic tiles with the conventional technique.
- High strength cement renders for interiors and exteriors.



Mixing cement mortar with PLANICRETE

RECOMMENDATIONS

- Do not use pure PLANICRETE as a primer or a slurry: always mix it with Portland cement or, if required, with MAPECEM.
- 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 implies 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 done in the concrete mixer, never mix for more than three minutes, so as to avoid any excessive incorporation of air.

APPLICATION PROCEDURE

Preparing the substrate

PLANICRETE can be used for screeds, renders and levelling plasters on any surfaces that are solid, strong, compact and clean.



Adhesive render admixed with PLANICRETE

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



Applying adhesive cement slurry modified with PLANICRETE



Applying adhesive cement screed modified with PLANICRETE

TECHNICAL DATA

PRODUCT IDENTITY	
Consistency:	runny liquid
Colour:	greenish white
Specific gravity:	1.02 g/cm ³
pH:	10
Dry solids content:	40%
Brookfield viscosity (mPa·s):	40
Shelf life:	12 months in unopened original packing; protect from frost
Health hazard according to EEC 88/379:	no
Inflammability:	no
Customs class:	4002 11 00
APPLICATION DATA	
Mix ratio:	see table
Application temperature:	from +5°C to +40°C
Final cure-time:	depending on mix ratio
FINAL PERFORMANCES	
Mechanical characteristics:	Compressive strength and flexural strength tests were carried out on prisms of plastic mortar made and cured according to the specifications laid down in the Italian Ministerial Decree of June 3, 1968.
Composition of the mortar:	Cement: Portland 325 450 g Aggregates: standardised sand 1350 g Admix: PLANICRETE 120 g Water 90 g
Specific gravity of mix:	2.21 g/cm ³
Incorporated air:	8%
Compressive strength:	
- after 24 hours:	7.8 N/mm ²
- after 3 days:	16.0 N/mm ²
- after 7 days:	24.5 N/mm ²
- after 28 days:	35.5 N/mm ²
Flexural strength:	
- after 24 hours:	2.8 N/mm ²
- after 3 days:	5.5 N/mm ²
- after 7 days:	6.0 N/mm ²
- after 28 days:	8.0 N/mm ²
Adhesion to substrate measured by pull-off test on damp concrete:	
- after 28 days:	2.6 N/mm ² (concrete breaking point)
- after 7 days + 21 days in water:	3.0 N/mm ² (concrete breaking point)
- after 7 days + 14 days at +60°C:	2.5 N/mm ² (concrete breaking point)
Modulus of elasticity secant on compression:	18,500 N/mm ²
Resistance to damp:	excellent
Resistance to aging:	excellent
Resistance to solvents and oils:	mediocre
Resistance to acids and alkalis:	fair
Resistance to temperatures:	from -30°C to +90°C

The substrate must then be thoroughly wetted but no excess water should be left on the surface as it might act as an anti-adhesive.

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



Floor patching: application of slurry



Floor patching: application of mortar

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 m³

The aggregates must have mixed diameters according 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 (0-8mm) 1 m³

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.



Floor patching: final smoothing



Adhesive shotcrete modified with PLANICRETE

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 cracks and 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 adhesive screeds.

Recommended mixing ratio:

PLANICRETE 1 part by weight

Water 1 part by weight

Portland cement 2 parts by weight

With screeds in MAPECEM, replace the Portland cement with MAPECEM without changing the proportions.

Mixing

Dilute PLANICRETE with water in a suitable recipient 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.

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 ² /mm of thickness
Adhesive screeds from 10 to 35 mm	1:3	350-400 kg/m ³ of aggregates	6-8 mm	50 g/m ² /mm of thickness
Floating screeds (> 35 mm)	1:4	300-350 kg/m ³ of aggregates	8 mm	30 g/m ² /mm of thickness
Renders	1:4	1:3	8 mm	70 g/m ² /mm of thickness
Renders with NIVOPLAN	1:5	-	-	70 g/m ² /mm of thickness
Renders for plasters	1:1	1:1	3 mm	200-250 g/m ² /mm
Mortars for filling	1:2	1:2-1:3	acc. to needs	100 kg/m ³
Adhesive slurries	1:1	Portland cement or MAPECEM	-	200-300 g/m ²

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.



Cement plaster with PLANICRETE. Ville Marie motorway tunnel, Montreal, Canada

The setting time for mixes admixed with 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 sheets.

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.



Exterior flooring with concrete admixed with PLANICRETE. Vieux Port, Quebec, Canada

WARNING

N.B. 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.

N.B. FOR PROFESSIONALS



BUILDING THE FUTURE

MAPEI SAFETY & QUALITY



This site operates under an environmental management system. Its environmental performance is disclosed to the public in compliance with EMAS, the European Community Eco Management and Audit Scheme, Registration N° I-S-000019.