# GRANIRAPID

**Two-component, high-performance, deformable, quick-setting and drying cementitious adhesive for ceramic tiles and stone material.**









CE EN 12004 C2F S1 0474 Fast Track Ready

## BENEFITS AND FEATURES

- Excellent adhesion
- Excellent workability
- Ready for foot traffic in just 4 hours
- Ready for use in 24h
- MED certified for use in the naval industry

## CLASSIFICATION IN COMPLIANCE WITH EN 12004

**Granirapid** is an improved (2) fast setting (F) cementitious (C) deformable (S1) adhesive classified as C2F S1.
*Conformity of **Granirapid** is declared in ITT certificates n° 85330201.101 (SFV) issued by the Säurefliesner-Vereinigung e.V. Grossburgwedel laboratory (Germany) and n° 25070279/Gi (TUM), n° 25080057/Gi (TUM) and n° 25080060/Gi (TUM) issued by the Technische Universität München laboratory (Germany) and in ITT certificates n° 2008-B-2749/17 and 2008-B-2749/21 issued by the MPA Dresden Institute (Germany).*

## WHERE TO USE

For bonding all kinds of interior and exterior ceramic tiles; conglomerate, artificial and natural stone and marble on walls or floors.
For bonding rubber flooring for cement installations (stalk back or dove-tailed back) on all traditional substrates in interiors, exteriors and in environments subject to heavy traffic.

### Some application examples

- Ceramic and vitreous mosaics, single-fired and double-fired ceramic tiles, terracotta floor-tiles, klinker tiles, porcelain tiles, etc.
- Reconstructed or artificial stones, natural stone (marble, granite, etc.) which require adhesives with fast drying times

on

- Bonded or unbonded cement screeds provided they are sufficiently cured.
- Underfloor undertile heating installations.
- Bonded or unbonded screeds in **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.
- Existing floors (ceramic tiles, natural stone, terrazzo tiles, etc.) after cleaning and degreasing.

MAPEI

- Because of its extraordinary bonding and fast-setting characteristics, **Granirapid** is particularly suitable for rapid re-tiling jobs or flooring that has to be ready for use within very short times (supermarkets, factories, malls, hospitals, airports, etc.).

## TECHNICAL CHARACTERISTICS

**Granirapid** is a two-component adhesive composed of a special hydraulic and silica sand (part A) and a synthetic rubber latex (part B).
**Granirapid** has particularly fast setting and hydration times so that floors are set to light foot traffic after 3 hours and completely cured after only 24 hours.
**Granirapid** has very low shrinkage and excellent bonding characteristics making it suitable for most difficult substrates. Its mechanical properties make it resistant to impact, vibration, temperature changes, ageing and dilute chemical agents.

## RECOMMENDATIONS

Do not use **Granirapid**:

- on walls or floors subject to intense movement (chipboard or wood agglomerates, asbestos cement board, etc.);
- on metal surfaces;
- on artificial, conglomerate or natural marble subject to exceptional moisture movement, on green marble, certain sandstones and slates. Use **Keralastic** only.

## APPLICATION PROCEDURE

### Preparing the substrate

All substrates onto which **Granirapid** will be applied must be flat, mechanically strong, free from loose parts, grease, oil, paint, wax, etc.
Cementitious substrates must not be subject to shrinkage after the installation of the tiles.
During warm weather, renders must be cured at least 1 weeks per centimetre of thickness and cementitious screeds must be cured for at least 28 days, unless they have been made with special MAPEI binders for screeds such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.
Dampen the surfaces with water to cool down, if they should be too warm from exposure to direct sunlight.
Gypsum substrates and anhydrite screeds must be perfectly dry (maximum residual moisture 0.5%), sufficiently hard and free from dust. It is absolutely essential that they are treated with **Primer G** or **Mapeprim SP**. In areas subject to extreme damp, prime the substrate with **Primer S**.

### Preparing the mix

The **Granirapid** mix is obtained by mixing 25 kg of part A grey or 22.5 kg part A white (cementitious powder) with 5.5 kg of part B (synthetic rubber latex).
If possible, use a mechanical stirrer until a smooth mix is obtained. Always pour the powder (part A) into the latex (part B).
Pot life at +20°C is about 45 minutes, but higher temperatures may reduce this time.

### Applying the mix

To achieve a good adhesion, first spread a thin coat of **Granirapid** onto the substrate using the straight edge of the trowel followed immediately with the correct thickness, using the most suitable notched trowel. The general principle to follow when selecting the right trowel is to choose one that gives a coverage to at least 65-70% of the back of the tiles for internal walls and light traffic areas and 100% coverage for heavy traffic areas and all external work.
For mosaics up to 5x5 cm MAPEI trowel No. 4 or 5 is recommended (consumption 2.5-3 kg/m$^2$).
For normal ceramic wall tiles MAPEI V. notched trowel No. 5 is recommended (consumption 3.5-4 kg/m$^2$).
For floors and any uneven surfaces or tiles with highly profiled ribs or lugs or large-format tiles MAPEI V notched trowel No. 6 is recommended (consumption 5-6 kg/m$^2$).
For floors and very uneven surfaces or tiles with highly profiled ribs or lugs or large-size tiles MAPEI square-notched trowel No. 10 is recommended (consumption 8 kg/m$^2$), or a **Kerafloor** trowel (up to 1 cm thick).
For particularly demanding applications such as exteriors subject to freezing, basins or swimming pools, floors subject to heavy loads or floors to be polished in situ, dove-tailed tiles, or tiles with large stalks or large format

tiles, **Granirapid** should be applied to the back of the tiles (back-buttering).
Large format tiles include those over 900 $cm^2$ (30x30 cm).

## Installing the tiles

Open time in normal temperature and humidity conditions is about 20 minutes. Unfavourable climatic conditions (strong sun, wind, high temperature, etc.) or a highly absorbent substrate can reduce the time to just a few minutes.
Careful checks have to be made to ensure that a skin does not form on the surface of the spread adhesive, which should stay "fresh''. Wetting the substrate before applying the adhesive helps to prolong open time.
Should a skin form, the adhesive will have to be freshened up by re-spreading with the notched trowel. It is not advisable to wet the adhesive with water when a skin has formed because, instead of dissolving the skin, the water will often form an anti-adhesive film.
Ceramic coverings laid with **Granirapid** must not be washed or exposed to rain for at least 3-4 hours and must be protected from strong sunlight for at least 12 hours after laying.

## Installing the rubber

The installation of rubber with cement installations must be carried out by back-buttering. Butter with **Granirapid**, until saturated, the back of the slab and spread **Granirapid** on the substrate with a No. 6 trowel. Apply the slab "wet" on "wet" and lightly twist.



*Installation of porcelain tiles in an industrial environment*



*Overlaying rubber flooring on cement with Granirapid*



*Installation of white Carrara marble with white Granirapid*



*Overlaying ceramic tiling with an agglomerate mix using with grey Granirapid*

# GROUTING AND SEALING

Joints can be grouted after 3 hours with special MAPEI cementitious or epoxy grouts, available in various colours. Expansion joints must be sealed with special MAPEI sealants.

# POLISHING

Surfaces can be polished after 24 hours.

## LIGHT FOOT TRAFFIC

Floors are able to take light foot traffic after 3-4 hours.

## READY FOR USE

Surfaces are ready for use after approximately 24 hours.
Basins and swimming pools can be filled after 3 days.

## CLEANING

All tools should be cleaned with plenty of water before the adhesive sets. After setting, cleaning becomes very difficult, but can usually be helped by solvents such as white spirit or similar.

## CONSUMPTION

Mosaics and small sizes in general (trowel No. 4): 2.5-3 kg/m²
normal sizes (trowel No. 5): 3.5-4 kg/m²
large sizes, exterior floors (trowel No. 6): 5-6 kg/m²
uneven tile backs and uneven surfaces, natural stones (trowel No. 10): 8 kg/m² or more.

## PACKAGING

**Granirapid** is available in white or grey.

**Granirapid** white: 28 kg packs.
Component A: 22.5 kg bag.
Component B: 5.5 kg drum.

**Granirapid** grey: 30.5 kg packs.
Component A: 25 kg bag;
Component B: 5.5 kg drum.

## STORAGE

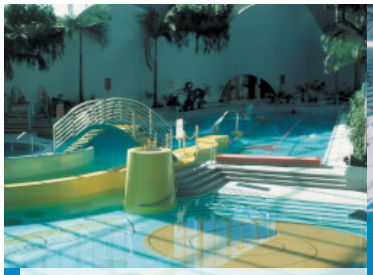
**Granirapid** component A can be stored 12 months in original unopened packing in a dry place.
**Granirapid** component B can be stored 24 months. Protect from frost.
Component A complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH) - All. XVII, item 47.

## SAFETY INSTRUCTIONS FOR THE PREPARATION AND INSTALLATION

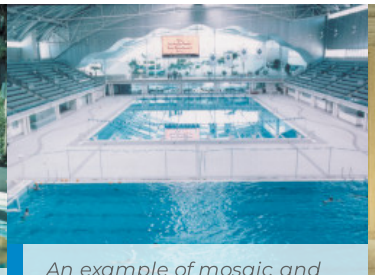
**Granirapid** component A is irritant, it contains cement that when in contact with sweat or other body fluids causes irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes. In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention. It is recommended to use protective gloves and goggles.
**Granirapid** component B is not considered as dangerous according to the current regulation regarding the classification of mixtures. We recommend the use of protective gloves and goggles and to take the usual precautions for handling chemical products.
For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.
PRODUCT FOR PROFESSIONAL USE.

| TECHNICAL DATA (typical values)<br>In compliance with:<br>– European EN 12004 as C2F S1 | |
|---|---|
| PRODUCT IDENTITY | |
| EMICODE: | EC1 R Plus - very low emission |
| COMPONENT A | |
| Consistency: | white or grey powder |
| Bulk density (g/cm³): | 1.3 |
| Dry solids content (%): | 100 |
| COMPONENT B | |
| Consistency: | thick liquid |
| Colour: | white |
| Density (g/cm³): | 1.01 |
| pH: | 12 |
| Dry solids content (%): | 20 |
| Brookfield viscosity (mPa·s): | 40 |
| APPLICATION DATA (at +23°C - 50% R.H.) | |
| Mix ratio: | white: component A: 22.5 kg + component B: 5.5 kg<br>grey: component A: 25 kg + component B: 5.5 kg |
| Consistency of mix: | very pasty |
| Density of mix (kg/m³): | 1600 |
| pH of mix: | approx. 11 |
| Application temperature range: | from +5°C to +30°C |
| Pot life of mix: | 45 mins. |
| Open time (according to EN 1346): | approx 20 mins. |
| Setting time: | approx. 2 hours |
| Grouting: | after 3 hours |
| Set to light traffic: | after 3-4 hours |
| Ready for use: | after 24 hours (3 days for basins and swimming pools) |
| FINAL PERFORMANCES | |
| Tensile adhesion strength according to EN1348 (N/mm²):<br>– initial (after 28 days):<br>– after heating:<br>– after water immersion:<br>– after freeze/thaw cycles: | <br>2.5<br>2.2<br>1.3<br>1.4 |
| Flexural strength (N/mm²):<br>– after 24 hours<br>– after 7 days<br>– after 28 days | <br>3.0<br>5.0<br>6.0 |
| Compressive strength (N/mm²):<br>– after 24 hours<br>– after 7 days<br>– after 28 days | <br>10.0<br>17.0<br>20.0 |
| Resistance to acids: | fair |
| Resistance to a alkalis: | excellent |

| | |
|---|---|
| **Resistance to oils:** | excellent |
| **Resistance to solvents:** | excellent |
| **Temperature when in use:** | from -30°C to +90°C |
| **Deformablility according to EN 12004:** | S1 - deformable |



*An example of mosaic and klinker installed in a swimming pool*



*An example of mosaic and klinker installed in a swimming pool - Olympic Centre, Sydney (Australia)*



*Sistine Corridors - Vaticano - Rome*



*An example of an installation of granite with Granirapid Subway in Mulheim Ruhr (Germany)*

## 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**

**Mapei S.p.A.**

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**113-2-2014 I gb**

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