

# Granirapid System

Premium, Rapid-Setting, Flexible Tile Mortar



## DESCRIPTION

*Granirapid* is the industry's first and most flexible, high-performance, fast-curing mortar system geared for fast-track projects. It develops high, early mechanical strength and can be specified for the most demanding tile applications. Thanks to MAPEI's High-Hydrated Cement Technology (HCT™), *Granirapid* offers superior drying-out characteristics for quick curing and does not contribute to efflorescence. When installed in conjunction with *Ultracolor® Plus FA* grout, *Granirapid* will allow water submersion in only 72 hours.

## FEATURES AND BENEFITS

- High-performance bond
- Best for most difficult tiles, substrates and conditions
- Allows grouting in 3 to 4 hours
- Excellent for large tile and ungauged tile

## INDUSTRY STANDARDS AND APPROVALS

- ISO 13007: Classification C2FS2P2
- ANSI: Exceeds ANSI A118.4F, ANSI A118.11 and ANSI A118.15F bond-strength requirements
- Certified in the USA and E.U., by RINA, to be in compliance with IMO Res. MSC.307(88)-(2010 FTP Code), the International Maritime Organization code for low-flame spread primary deck coverings

## WHERE TO USE

- Most interior/exterior residential and commercial installations on floors, walls and ceilings
- Installation of ceramic and porcelain tile, glass tile, quarry tile, pavers, Saltillo tile, and most types of marble, granite and natural stone and dimensionally stable agglomerated stones

- For adhered manufactured stone veneer installations on interior/exterior residential and commercial walls

## LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Do not use for moisture-sensitive stone (green marble; some limestone and granite, or agglomerates made from these moisture-sensitive stones), cultured marble or resin-backed tiles. Instead, use suitable epoxy or urethane adhesives. (See the respective Technical Data Sheets for more information.)
- Some glass tile backings may not be suitable for use with *Granirapid*. Consult the recommendations of the TCNA and the glass tile manufacturer.
- For light-colored stones and translucent natural stone, a white mortar is recommended.
- Do not use over dimensionally unstable substrates such as hardwood flooring, oriented strand board (OSB), substrates containing asbestos, or metal. See the “Suitable Substrates” section below.
- To use directly over gypsum-based patching or leveling substrates, apply a suitable sealer/primer before use. See MAPEI’s Technical Bulletin “Tiling over gypsum” in the Tile & Stone Installation Systems section of MAPEI’s Website.
- Consult building code requirements for use on exterior commercial facades.
- Installations of tile over nonporous surfaces, such as waterproofing membranes and existing tile, may require extended setting/curing times.
- Large-and-heavy-tile mortars (formerly known as “medium-bed mortars”) are not designed to correct uneven floors. Substrates must be flat and level (according to substrate flatness requirements in ANSI A108.02) before the installation of large-format tile.

## SUITABLE SUBSTRATES

- Concrete (cured at least 28 days)
- Masonry cement block, brick, cement mortar beds, and render and leveling coats
- Cement backer units (CBUs) – see manufacturer’s installation guidelines
- Gypsum wallboard and plaster – interior walls in dry areas only (priming may be required). See the “Surface preparation requirements” reference guide in the Tile & Stone Installation Systems section of MAPEI’s Website.
- Plywood underlayments must be a Group 1 exterior-grade plywood CC-plugged or better, conforming to APA classification and U.S. Product Standard PS 1-95 or a “SELECT” or (SEL-TF) CANPLY classified exterior-grade plywood conforming to CSA-0121 standard for Douglas fir for direct-bond (interior, residential and light commercial floor and countertops in dry conditions only)
- Vinyl composition tile (VCT), plastic laminate countertops, non-cushioned sheet vinyl and cutback residue (interior only)
- Existing ceramic and porcelain tile, glass, porcelain mosaics, cement terrazzo, quarry tile and pavers (interior in dry conditions only)
- MAPEI waterproofing, crack-isolation, sound-reduction and uncoupling membranes (limited to thin-set installations only when using weak stone)

Consult MAPEI’s Technical Services Department for installation recommendations regarding substrates and conditions not listed.

## SURFACE PREPARATION

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.

See the “Surface preparation requirements” reference guide in the Tile & Stone Installation Systems section of MAPEI’s Website.

## MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

1. Only mix *Granirapid* powder with *Granirapid* liquid. Do not mix with water or with any other liquid or powder.
2. Into a clean mixing container, pour about 2 U.S. gals. (7.57 L) of *Granirapid* liquid.
3. Gradually add 50 lbs. (22.7 kg) of *Granirapid* gray powder (or 46 lbs. [20.9 kg] of *Granirapid* white powder) while slowly mixing.
4. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-blade mixer or spiral mixer. Mix thoroughly until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
5. Do not mix more material than can be installed in 30 minutes. The setting time depends on temperature and humidity.
6. Do not slake. Spread immediately.
7. If the mixture becomes heavy or stiff, remix without adding more liquid or powder.

## PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Over porous surfaces or in hot climates, dampen the surface and keep the product cool to achieve maximum working time.
2. Before installing slate or marble, granite or their agglomerates, use a damp cloth to wipe clean the back side of the tile.
3. Choose a notched trowel (see the “Approximate Coverage” chart below) with sufficient depth to achieve greater than 80% mortar contact to both the tile and substrate for all interior applications, and greater than 95% for exterior installations, and wet applications. It may be necessary to back-butter tiles in order to meet these requirements. (Refer to ANSI A108.5 specifications and TCNA Handbook guidelines.)
4. With pressure, apply a coat by using the trowel’s flat side to key mortar into the substrate.
5. Apply additional mortar, combing it in a single direction parallel to the tile’s shortest dimension, with the trowel’s notched side.
6. Spread only as much mortar as can be tiled before the product skins over. Open time can vary with jobsite conditions.
7. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage.
8. Remove excess mortar from the grout joints so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).

## INSTALLING ADHERED MANUFACTURED STONE VENEER (AMSV)

Install AMSV in accordance with the recommended practices of ASTM C1780 and the installation guidelines as outlined by Concrete Masonry & Hardscapes Association for AMSV. AMSV units that are installed must meet the minimum requirements of ASTM C1670/C1670M. Building codes may vary from area to area. Check with local authorities for building-code requirements for your local area.

## EXPANSION AND CONTROL JOINTS

- Provide for expansion and control joints as specified per TCNA Method EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ.
- Do not cover expansion joints with mortar.

## CLEANUP

- Clean tools and tile using only water while the mortar is fresh.

## PROTECTION

- Protect floors for 3 to 4 hours before grouting. Protect from heavy traffic for 24 hours.
- Protect from frost for 7 days.
- When installed in conjunction with *Ultracolor Plus FA* grout, *Granirapid* will allow water submersion in 72 hours.

### ISO 13007 Classification

Classification Code	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
F (fast-setting)	≥ 72.5 psi (0.5 MPa) at 6 hours
S2 (improved deformation of mortar)	≥ 0.2" (5 mm)
P2 (improved adhesion to plywood)	≥ 145 psi (1 MPa)

### ANSI Specifications\*

Test Method	Specification Standard	Test Results
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa) at 28 days	220 to 390 psi (1.52 to 2.69 MPa)
ANSI A118.15F – shear strength, impervious ceramic (porcelain) mosaics	≥ 50 psi (0.34 MPa) at 4 hours	Passes

ANSI A118.15 – shear strength, impervious ceramic (porcelain) mosaics	> 400 psi (2.76 MPa) at 28 days	460 to 670 psi (3.17 to 4.62 MPa)
ANSI A118.15 – shear strength, glazed wall tile	> 450 psi (3.10 MPa) at 7 days	480 to 750 psi (3.31 to 5.17 MPa)
ANSI A118.15 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	460 to 550 psi (3.17 to 3.79 MPa)

\* Anything that meets A118.15 by definition meets or exceeds A118.4.

### Shelf Life and Product Characteristics

Shelf life	1 year (powder) and 2 years (liquid) when stored in original, unopened packaging at 73°F (23°C)
Colors	Gray and white

### Application Properties

at 73°F (23°C) and 50% relative humidity

Open time**	10 to 20 minutes
Pot life**	30 minutes
Time before grouting	3 to 4 hours
VOC content (SCAQMD Rule 1168)	< 65 g per L
Typical VOC content per SCAQMD Rule 1168 testing methods	Powder: 0 g per L Liquid: 2 g per L

\*\* Actual open time, pot life and time before grouting will vary based on jobsite conditions.

### Approximate Coverage\*\*\*

per 46 lbs. (20.9 kg) of white powder or 50 lbs. (22.7 kg) of gray powder, combined with 2 U.S. gals. (7.57 L) of liquid

Typical Trowel	Coverage
<b>Thin-set application</b>	
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	75 to 90 sq. ft. (6.97 to 8.36 m <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	55 to 65 sq. ft. (5.11 to 6.04 m <sup>2</sup> )
<b>Large-and-heavy-tile application</b>	
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm), square-notch	38 to 45 sq. ft. (3.53 to 4.18 m <sup>2</sup> )
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm), U-notch	25 to 30 sq. ft. (2.32 to 2.79 m <sup>2</sup> )

\*\*\* Trowel dimensions are width/depth/space. Actual coverage will vary according to substrate profile and tile type.

## Packaging

Size and Color
Bag, powder: 50 lbs. (22.7 kg), gray
Bag, powder: 46 lbs. (20.9 kg), white
Jug, liquid: 2 U.S. gals. (7.57 L)
Pail, liquid: 5 U.S. gals. (18.9 L)
Drum, liquid: 55 U.S. gals. (208 L)

## RELATED DOCUMENTS

- Reference guide: "Surface preparation requirements" for tile and stone installation systems<sup>†</sup>
- Technical bulletin: "Tiling over gypsum"<sup>†</sup>

<sup>†</sup> At [www.mapei.com](http://www.mapei.com)

## ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact [sustainability\\_USA@mapei.com](mailto:sustainability_USA@mapei.com) (USA) or [sustainability-durabilite@mapei.com](mailto:sustainability-durabilite@mapei.com) (Canada).

## WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

#### LEGAL NOTICE

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For the most current product data and BEST-BACKED<sup>SM</sup> warranty information,  
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