MAPEI®

Ker™ 121

Professional-grade, one-step mortar

Meets or exceeds ANSI A118.4 and CGSB 71-GP-30M Type 2 requirements

DESCRIPTION

Ker 121 is a professional-grade, single-component, high-performance mortar for ceramic, marble, granite and porcelain stoneware installation over most traditional and specialty substrates. *Ker 121* can be used for most interior and exterior residential floor and wall tile applications. In commercial applications, use on interior floor and wall installations and exterior floors. For exterior commercial wall applications, we recommend using either the *Kerabond/Keralastic*™ or *Granirapid*® system. *Ker 121* meets or exceeds ANSI A118.4 and ANSI A118.11 requirements when mixed with water.

USES

- For floor and wall installation
- For interior and exterior installation
- For the installation of ceramic, porcelain, clay, glass and natural-stone tiles over most traditional well-prepared nondeflecting substrates (maximum deflection not to exceed L/360)
- For interior installation over most nontraditional, sound, well-prepared, existing surfaces including cementitious terrazzo floors, unglazed quarry tiles, pavers, cutback adhesive residue, vinyl composition tile (VCT), vinyl asbestos tile (VAT) and noncushioned vinyl sheet goods, provided that these surfaces are well-bonded to an approved substrate
- For interior residential and light commercial-duty floor and countertop installations (in dry areas only) over two 5/8" (16 mm) thick layers of exterior-grade plywood
- For use in installing porcelain tile up to 12" x 12" (30 x 30 cm) in exterior horizontal applications

TECHNICAL NOTES

- Do not use for vertical exterior porcelain tile installation, or for vertical exterior installation in freeze/thaw climates. Instead, use the *Kerabond/Keralastic* or *Granirapid* system (see respective Technical Data Sheets for details).
- Do not use for installations subject to prolonged water immersion (such as pools, fountains and jacuzzis). Instead, use *Keracrete*™ or the *Kerabond/Keralastic* or *Granirapid* system (see respective Technical Data Sheets for details).
- When installing white, light-colored or translucent marble, do not use gray *Ker 121* mortar; typically a white mortar is recommended. Use white *Granirapid* or white *Ultraflex*® *RS* (see respective Technical Data Sheets for details).
- Do not use to install green marble and its agglomerates, or to set Rosso Levanto, Negro Marquina or other moisture-sensitive marble and stones. Instead, use *Kerapoxy*® or *Planicrete*® *W* (see respective Technical Data Sheets for details).

  Note: Marble, granite and slate are products of nature made from a vast combination of minerals and chemicals that may cause the material to behave or react in a manner beyond our control. Likewise, we do not have control over any of the materials and processes used in the manufacturing of agglomerates. Therefore, determine the suitability of all materials before

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proceeding with the installation.

- Do not use over presswood, particleboard, chipboard, Masonite, Lauan, gypsum floor-patching and leveling compounds, metal or similar dimensionally unstable substrates.
- Exterior-grade plywood, as described under "Recommended Substrates," is only acceptable as a substrate when used in a dry area for residential and light commercial-duty floor or countertop installations. Do not apply *Ker 121* over single-layer wood floors or for wall installation over plywood. (See MAPEI's "Surface Preparation Requirements" document for details.)
- Do not use when the ambient and/or substrate temperature is below 50°F (10°C) or above 100°F (38°C).

RECOMMENDED SUBSTRATES

Interior and Exterior

- Fully cured concrete and mortar beds (steel trowel and light broom finish)
- Cement backer units conforming to ANSI A118.9 requirements
- Masonry block

Interior Only

(Walls)

- Gypsum greenboard and gypsum wallboard. For improved performance, prime with a roller-applied coat of *Planicrete® AC* latex.

(Floors)

- Cementitious terrazzo floors
- Unglazed quarry tiles and pavers
- Cutback adhesive residue (see Section 1.2.)
- VCT, VAT and noncushioned vinyl sheet goods. These should be well-prepared and well-bonded to an approved nondeflecting substrate.

(Residential floors and countertops in dry areas only)

- APA-rated Group 1 exterior-grade plywood, CC-plugged or better, conforming to U.S. Product Standard PS 1-95
- COFI-classified SELECT or (SEL-TF) exterior-grade plywood conforming to CSA-0121 Standard for Douglas fir (see ANSI A.N. 3.4 "Requirements for Carpentry" guidelines and TCA Handbook for construction details)

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

INSTRUCTIONS

1. Surface Preparation

1.1 See MAPEI's "Surface Preparation Requirements" document regarding ceramic tile, quarry tile and stone veneers.

1.2 Scrape off or chip out any loose cutback adhesive and loose or badly damaged existing surfacing material that may reduce or prevent good adhesion to the substrate.

2. Mixing

2.1 Into a clean mixing container, pour about 1-1/2 U.S. gals. (5,68 L) of cool, clean water. Gradually add 50 lbs. (22,7 kg) of *Ker 121* powder.

2.2 Use a low-speed mixer (about 300 rpm). Mix thoroughly to a homogenous and smooth consistency.

2.3 Avoid air entrapment and prolonged mixing, which will shorten the pot life.

2.4 Allow the mix to sit ("slake") for 10 to 15 minutes.

2.5 Restir without adding any more water or dry mix.

2.6 Some stiffening may occur before all the material is used (about 1-1/2 to 2 hours). If so, simply restir by hand or machine, but do not add any water.

2.7 Wash hands and tools with water immediately after mixing.

3. Application

3.1 Use a typical notched trowel with sufficient depth to achieve at least 80% mortar contact to the back of the tiles. For exterior applications (see "Technical Notes"), for commercial floor and shower applications, and when installing marble and granite tile floors, it may be necessary to back-butter each tile before laying it, using the flat edge of the trowel, to achieve 100% mortar contact and a void-free installation.

Note: When required, back-buttering should be performed simultaneously with the mortar's application to the substrate. (Refer to ANSI A108.5 specifications and TCA guidelines.)

3.2 Using the flat edge of the trowel, spread a thin, pressure-applied mortar coat on the substrate. Apply more material immediately, then trowel the mortar evenly in a single direction using the trowel's notched side. Do not spread more material than can be covered with tiles within 15 to 20 minutes (about 20 sq. ft. [1,86 m^2]).

3.3 In hot or dry conditions, take precautions to ensure that the mortar does not flash-set. Using water to cool a concrete substrate before the installation may be beneficial. Remove all excess water before applying the mortar. Should skinning occur, replace the skinned-over or dry mortar with fresh mortar before setting the tile.

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TECHNICAL DATA

References: Meets or exceeds ANSI A118.4 and CGSB 71-GP-30M Type 2 requirements

Pot life at 73°C (23°F) ..... About 2 hours
Open time at 73°C (23°F) ..... 20 minutes
Delay before grouting at 73°C (23°F) ..... 48 hours
Linear shrinkage ..... < 0.5 %
pH (paste) ..... About 11.5

Shear strength (ANSI A118.4 test at 28 days)
- Nonvitreous tile ..... 383 psi (2,64 MPa)
- Vitreous quarry tile ..... 327 psi (2,26 MPa)
- Impervious porcelain tile ..... 426 psi (2,94 MPa)
- To plywood substrate (plywood failed) ..... 135 psi (0,93 MPa)

TCA performance-level requirements rating (ASTM C627 test method):

Tile: 8" x 8" x 3/8" (20 cm x 20 cm x 10 mm) impervious porcelain			
Substrate	**Underlayment**	**Results (cycles)**	**Rating**
Concrete	Cutback residue	1 to 10	Moderate
	VCT	1 to 10	Moderate
Plywood, 2 layers – 5/8" (16 mm)	Urethane or vinyl sheet goods wear layers	1 to 6	Light residential

Colors ..... Gray; white (white made to order only)
Shelf life ..... 12 months when stored in a dry, well-ventilated storage area
Health and safety ..... Consult the Material Safety Data Sheet (MSDS) for safe-handling instructions.

PACKAGING
Bag: 50 lbs. (22,7 kg)

TYPICAL TROWELS AND APPROXIMATE COVERAGES* per 50 lbs. (22,7 kg)

1/4" x 1/4" x 1/4" ..... 70 to 90 sq. ft.
(6 x 6 x 6 mm) ..... (6,50 to 8,36 m^2)

1/4" x 3/8" x 1/4" ..... 50 to 65 sq. ft.
(6 x 10 x 6 mm) ..... (4,65 to 6,04 m^2)

** Trowel dimensions are width/depth/space. Quantities shown are given for estimating purposes only. Actual job-site coverages may vary according to substrate conditions, type of trowel used and setting practices.*

3.4 Set tiles firmly over the fresh mortar, with a slight push/pull motion across the direction of the mortar ridges to achieve good tile-to-mortar contact. Do not soak tiles before installation.

3.5 Follow immediately with a proper and thorough beat-in procedure to flatten the ridges or notches into a continuous setting bed, allowing at least 1/3 the tiles' thickness to be embedded securely in the setting mortar. Check pieces periodically to ensure that there is sufficient mortar contact with the reverse side of the tiles.

3.6 Make alignments and adjustments immediately following beat-in. (Do not exceed 45 minutes.)

3.7 Clean joints and wipe smudges from the tile face with a damp towel before material hardens. Leave at least 2/3 of the joint depth open for grouting.

3.8 Wash hands and tools with water while material is still fresh.

4. Expansion and Control Joints

4.1 Provide for expansion and control joints where specified. Refer to the most current TCA Handbook for Ceramic Tile Installation, Detail EJ-171.

4.2 Do not cover any substrate expansion joint with mortar.

4.3 When necessary, cut tiles along both edges of the expansion joint. Do not allow tile and mortar to overlap joint.

4.4 Install the specified compressible bead and sealant into all expansion and control joints.

5. Grouting

5.1 Do not disturb, grout or walk over tiles for at least 48 hours after installation. When this material is installed in cooler temperatures, a longer curing time may be required before grouting.

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5.2 Grout joints with the appropriate MAPEI grout. (See the grouts' respective Technical Data Sheets for details.)

6. Protection

6.1 Provide for dry, heated storage on site and deliver materials at least 24 hours before tilework begins.

6.2 Protect tilework from adverse weather, freezing, and continuous water conditions or immersion during installation and for at least 21 days after completion of the tilework.

6.3 **Floors**: Block off floors to foot traffic for at least 48 hours and to general traffic for at least 72 hours after installation. Stepping boards may be used after 24 hours when occasional stepping on the floor is unavoidable.

6.4 **Walls**: Protect walls from impact, vibration and hammering on adjacent and opposite walls for at least 14 days after installation.

6.5 Since temperature and humidity (during and after the installation of tile) affect the final curing time of all cement-based and epoxy materials, allow for extended periods of cure and protection when temperatures drop below 60°F (16°C) and/or when the relative humidity is higher than 70%.

NOTICE

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. Any claim shall be deemed waived unless made in writing to us within fifteen (15) days from date it was, or reasonably should have been, discovered.

MAPEI

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Additional Information

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