

KER 121



UNIVERSAL POLYMER-MODIFIED THIN SET MORTAR FOR CERAMIC, PORCELAIN AND NATURAL STONE TILES

MEETS OR EXCEEDS ANSI A118.4 REQUIREMENTS



DESCRIPTION

An easy-to-use high performance, single component, polymer-modified thin-set mortar which is mixed only with water for ceramic tile, marble, granite and porcelain stoneware tiles installation.

USES

1. For floor and wall installation.
2. For interior and exterior installation. (See LIMITATIONS.)
3. For the installation of ceramic, porcelain, clay, glass and natural stone tiles over most traditional well prepared non-deflecting substrates. (Maximum deflection not to exceed L/360.) (See LIMITATIONS and RECOMMENDED SUBSTRATES.)
4. For interior installation over most non-traditional, sound, well prepared, existing surfaces including cementitious terrazzo floors, unglazed quarry tiles, pavers, cut-back adhesive residue, vinyl composition tiles, vinyl asbestos tiles, and non-cushioned vinyl sheet goods provided these surfaces are well bonded to an approved substrate. (See RECOMMENDED SUBSTRATES.)
5. For interior residential and light commercial duty floor and counter-top installations (in dry areas only) over **two** 15 mm (5/8") thick **layers** of EXTERIOR grade plywood. (See RECOMMENDED SUBSTRATES.)
6. For use in installing porcelain tile up to 300 mm x 300 mm (12" x 12") in exterior horizontal application.

LIMITATIONS

1. Do not use for vertical exterior porcelain tile installation. Use only KERALASTIC®/KERABOND® or KER 318 GRANI/RAPID®. (See respective data sheets for details.)
2. Do not use for vertical exterior installation in freeze/thaw climates. Use only KERALASTIC/KERABOND or KER 318 GRANI/RAPID. (See respective data sheets for details.)

3. Do not use for installations subject to prolonged water immersion (pools, fountains, jacuzzis, etc.). Use KERACRETE®, KER 318 GRANI/RAPID, or KERALASTIC/KERABOND. (See respective data sheets for details.)
4. When installing white, light colored or translucent marble, do not use GRAY KER 121 mortar: typically a white mortar is recommended. Use preferably WHITE KER 318 GRANI/RAPID or WHITE KERAQUICK M. (See respective data sheets for details.)
5. Do not use for the installation of "green" marble and agglomerates or for setting "Rosso Levanto", "Negro Marquina" and other moisture sensitive marble and stones. Use KERAPOXY® or PLANICRETE® W instead. (See respective data sheets for details.)
6. **Warning:** marble, granite and slate are products of nature made from a vast combination of minerals and chemicals which may cause the material to behave or react in a manner beyond our control. Neither do we have control over any of the materials and processes used in the manufacture of agglomerates. Therefore, determine the suitability of all materials before proceeding with the installation.
7. Do not use over presswood, particle board, chipboard, masonite, Lauan, gypsum floor patching and leveling compounds, metal or dimensionally unstable substrates.
8. "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 "SURFACE PREPARATION REQUIREMENTS" data sheet for details.)
9. Do not use when the ambient and/or substrate temperature is below 10°C (50°F) or above 38°C (100°F).

RECOMMENDED SUBSTRATES

A) Interior and Exterior (See LIMITATIONS)

- Fully cured concrete and mortar beds (Steel trowel & light broom finish)
- Cementitious backer units conforming to ANSI A118.9 Standard.
- Masonry blocks

B) Interior Only

1. (Walls only)

- Gypsum Green-board [See notes (1) & (3) below]
- Gypsum wall-board [See notes (1) & (3) below]

2. (Floors)

- Cementitious terrazzo floors
 - Unglazed quarry tiles and pavers
 - Cut-back adhesive residue (See SETTING INSTRUCTIONS par. 1.2.)
 - Vinyl composition and vinyl asbestos tiles [See notes (2) & (3) below]
 - Non-cushion vinyl sheets goods [See notes (2) & (3) below]
- #### 3. (Residential floors and counter tops in dry areas only)
- A.P.A. 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.)

NOTE

- (1) For improved performance, prime gypsum Green-board and gypsum Wall-board with a roller-applied coat of PLANICRETE 50® Latex.
- (2) Provided such surfaces are well prepared and well bonded to an approved non-deflecting substrate.
- (3) Consult Mapei's Technical Services department for complete details and recommendations when installing over non-traditional substrates and when special conditions exist.

SETTING INSTRUCTIONS

1. SURFACE PREPARATION

- 1.1 See "SURFACE PREPARATION REQUIREMENTS" data sheet for ceramic tile, quarry tile and stone veneers.
- 1.2 Scrape off or chip-out any loose cut-back adhesive and loose or badly damaged existing surfacing material that may reduce or prevent a good adhesion to the substrate.

2. MIXING

Mix to a smooth, stiff consistency, normally 1 1/2 US gal. (5,7 L) of cool water to 50 lbs. (22,7 kg) of dry powder, in accordance with the following procedure:

- 2.1 In a clean mixing container, pour approximately 1 1/2 US gal. (5,7 L) of cool, clean water and gradually add 50 lbs. (22,7 kg) KER 121 powder.

- 2.2 Use a low speed mixer (approx. 300 RPM).
- 2.3 Avoid air entrapment and prolonged mixing which will shorten the pot life.
- 2.4 Mix thoroughly to a homogeneous and smooth consistency.
- 2.5 Allow the mix to rest during 10 to 15 minutes.
- 2.6 Restir without adding any more water or dry mix.
- 2.7 Some stiffening may occur before all the material is used (approx. 1 1/2 to 2 hours). If so, simply restir by hand or machine, but do not add any water.
- 2.8 Wash tools and hands with water immediately after mixing.

3. APPLICATION

- 3.1 Use the appropriate notched trowel with sufficient depth to achieve an 80% minimum mortar contact to the back of the tiles. For exterior applications (see LIMITATIONS), commercial floor and shower applications, and when installing marble and granite tile floors, back-buttering each tile prior to laying, using the flat edge of the trowel, may be required to achieve a 100% mortar contact and a void-free installation.

Note: When required, the back-buttering should be performed simultaneously while the mortar is being applied 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 to the substrate. Then apply additional material immediately and trowel out the mortar evenly in ONE direction using the notched side of the trowel. Do not spread more material than can be covered with tiles within 15 to 20 minutes maximum [approx. 20 sq. ft. (2 m²)].
- 3.3 In hot or dry conditions, take precautions to ensure that the mortar does not flash set. Cooling a concrete substrate with water prior to the installation may be beneficial. Remove all excess water prior to applying the mortar. Should skinning occur, remove the skinned or dry mortar and replace it with fresh mortar prior to setting the tile.
- 3.4 Do not soak tiles before installation.
- 3.5 Set tiles firmly over the fresh mortar with a slight push /pull motion across the direction of the mortar ridges before skinning occurs to achieve a good tile to mortar contact. Should skinning occur, remove the dry or skinned mortar and replace it with fresh mortar.
- 3.6 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 thickness of the tiles to be imbedded securely in the setting mortar. Check pieces periodically to ensure that there is sufficient mortar contact with the reverse side of the tiles.
- 3.7 Make alignments and adjustments **immediately** following beat-in. (Do not exceed 45 minutes.)

Pot life at 22°C (72°F)	Approx. 2 hours
Open time at 22°C (72°F)	20 minutes
Delay before grouting at 22°C (72°F)	48 hours
Linear shrinkage	< 0.5 %
pH (paste)	Approx. 11,5

Shear strength - (ANSI A118.4 test at 28 days):	
Non-vitreous tile	383 psi (2,7 MPa)
Vitreous quarry tile	327 psi (2,3 MPa)
Imperveous porcelain tiles	426 psi (3,0 MPa)
To plywood substrate (plywood failed)	135 psi (0,95 MPa)

T.C.A. performance-level requirements rating (ASTM C-627 test method):

Tile: 8" x 8" x 3/8" (200 mm x 200 mm x 10 mm) impermeous porcelain

SUBSTRATE	UNDERLAYMENT	RESULTS (cycles)	RATING
Concrete	cutback residue	1 - 10	moderate
	vinyl composition tile	1 - 10	moderate
Plywood [2 layers - 5/8" (16 mm)]	urethane or vinyl	1 - 6	light-residential
	sheet goods wear layers		

PACKAGING

50 lbs. (22,7 kg) bag

COLOR

Gray and white (White made to order only)

SHELF LIFE

12 months when stored in a dry, well-ventilated storage area.

APPROXIMATE COVERAGES

Square notched trowels	50 lbs. (22,7 kg) bag
1/4" x 1/4" x 1/4"	70 - 90 sq. ft.
(6 mm x 6 mm x 6 mm)	(6,5 - 8,4 m ²)
1/4" x 3/8" x 1/4"	50 - 65 sq. ft.
(6 mm x 10 mm x 6 mm)	(4,6 - 6 m ²)

NOTE

Quantities shown are approximate and are given for estimating purposes only. Actual job site coverages may vary according to substrate conditions, type of trowel used and setting practices.

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

3.9 Wash tools and hands 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.

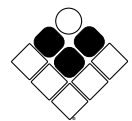
5.2 Grout joints with the appropriate MAPEI grout. (See grout data sheets for details.)

6. PROTECTION

6.1 General:

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

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



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6.2 Floors:

- 6.2.1 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.

6.3 Walls:

- 6.3.1 Protect walls from impact, vibration and hammering on adjacent and opposite walls for at least 14 days after installation.
- 6.4 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 15°C (60°F) and/or when the relative humidity is higher than 70%.

NOTICE

We shall not be liable for incidental and consequential damages, as defined under the uniform commercial code, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instruction or for other than the intended use. 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. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was, or reasonably should have been discovered.

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