



Installation Guides

At KiBA, we know you put a lot of effort in to the design of your project and it is critical to us for your vision to become reality. In order to achieve this, we have provided the below links to Tile Council of North America's (TCNA) guides as well as recommended mortars and grouts. Additionally, we recommend the experts at [Laticrete International](#) to provide rock solid recommendations on suitable setting and grouting products for our wide variety of material options, as well as helpful tile installation tips and resources.

Notes to Specifier

- LATICRETE® International, Inc. champions the use of Quality Labor for all tile and stone installations, specifically those represented by the NTCA Five Star Contractor Program (www.tile-assn.com/Member/FiveStar), the TCAA Trowel of Excellence Program (www.tcaainc.org/trowel-of-excellence.php), and the LATICRETE® Most Valued Partner (MVP) Program (www.laticrete.com/contractors/mvp_site.aspx).
- Please contact your local LATICRETE® representative for assistance @ (800) 243-4788 ext. 0

Follow Applicable Tile Council of North America's (TCNA) Handbook for Installation Methods

<https://www.tcnatile.com/>

An Excellent Resource for Frequently Asked Questions (FAQs) Regarding Tile Installation

<https://www.tcnatile.com/resources/faqs.html>

Utilize American National Standards Institute (ANSI) Guidelines Where Applicable

<https://www.ansi.org/>

Recommended Adhesive Mortars by Product Type

****IMPORTANT****

Mirror tiles are particularly susceptible to oxidation from cement-based adhesive mortars. This can adversely impact the appearance of your project. We recommend the use of LATAPOXY 300, an epoxy-based adhesive mortar. In any case, be sure to use an epoxy-based adhesive mortar (or similar alternative) and not a cement-based adhesive mortar when installing mirror tiles.

- **Porcelain Meshed Mosaics - [LATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)**
- **Stone Meshed Mosaics - [LATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)**
- **Mixed Material Meshed Mosaics (Stone/Glass/Metal/Resin) (Ex: Imagination Made to Order) - [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)**

- **Seashell Meshed Mosaics (Seashell/Glass/Stone) (Ex: North Shore) -** [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)
- **Glass Meshed Mosaics (Ex: Turning Point, Facet) -** [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)
- **100% Recycled Glass Meshed Mosaics (Ex: Island) -** [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)
- **Pressed/Melted Glass Meshed Mosaics (Ex: Excalibur, Picket) -** [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)
- **Metal Meshed Mosaics -** [LATAPOXY 300 Epoxy Adhesive](#)
- **Mirror Meshed Mosaics -** [LATAPOXY 300 Epoxy Adhesive](#)
- **Loose Mirror Tile -** [LATAPOXY 300 Epoxy Adhesive](#)
- **Loose Metal Tile -** [LATAPOXY 300 Epoxy Adhesive](#)
- **Loose Glass Tile (Ex: 3x6, 3x12, 4x12, and 4x16 Subway; 8" Hexagon; 4.5" Diamond) -** [LATICRETE Glass Tile Adhesive ORLATICRETE 254 Platinum multipurpose thin set mortar \(WHITE\)](#)

Grouting Systems for All Types

- **ANSI A118.7 High Performance Non-Sanded Cement Grout** – [LATICRETE PERMACOLOR SELECT GROUT](#) (if there is the potential to scratch the face / surface of the mosaics).
Can be used up ¼” in joint width sizes:

- **ANSI A118.3 Epoxy Based Grout – LATICRETE SPECTRALOCK PRO PREMIUM GROUT -**
 - TRANSLUSCENT version (excellent for glass mosaics)

DAZZLE OPTION

SPECTRALOCK 1 – High Performance Ready to Use Grout – FLEXIBLE SILCONE SEALANT for use in corners / changes of plane and movement joints - LATICRETE LATASIL

Additional Installation Materials

Self-Leveling Underlayment: LATICRETE® NXT® LEVEL PLUS used with LATICRETE NXT PRIMER

Floor Warming: LATICRETE STRATA_HEAT™ and STRATA_HEAT Wire and STRATA_HEAT Thermal Packs

Waterproofing and Crack Isolation Membrane: LATICRETE HYDRO BAN®

Latex-Portland Cement Thick Bed Mortar: LATICRETE® 3701 Fortified Mortar Bed

Slurry Bond Coat (for bonded mortar beds on floors): LATICRETE® 254 Platinum

Latex-Portland Cement Thinset Mortar: LATICRETE® 254 Platinum (regular or rapid-setting) -or- LATICRETE 257 Titanium -or- LATICRETE® TRI-LITE™ -or- LATAPOXY® 300 Epoxy Adhesive (for metal or unusual substrates)

Latex-Portland Cement Large Heavy Tile Mortar: LATICRETE® 255 MULTIMAX™ -or- LATICRETE® TRI-LITE

Latex-Portland Cement Grout:

LATICRETE® PERMACOLOR® Select Grout or LATICRETE PERMACOLOR Grout or LATICRETE PERMACOLOR Select NS

Stain-Resistant Epoxy Grout: LATICRETE SPECTRALOCK® PRO Premium Grout or LATICRETE SPECTRALOCK PRO Grout

100% Silicone Caulk: LATICRETE® LATASIL™ and LATICRETE® LATASIL 9118 Primer

Telephone: 1 (203) 393-0010; E-mail:technicalservices@laticrete.com;
Website:www.laticrete.com.

Surface Preparations

Substrate Preparation

Appropriate substrates: concrete, masonry, existing well bonded ceramic tile, proper tiling underlayment over wood or steel framed construction.

Substrate Deflection Requirements

See the Tile Council of North America (TCNA) handbook for complete details regarding specific methods of preparing substrates for tile installation.

Crack Isolation

All existing substrates cracks as well as any area susceptible to future surface cracking requires the installation of a crack isolation membrane meeting ANSI 118.12.

Wet Areas

Installation of a waterproofing membrane meeting ANSI 118.10 prior to installation is recommended for wet areas. Steam Rooms (continuous use) require a waterproofing and vapor retarding membrane with a perm rating of .05 perms or less.

Setting

Prior to installation, dry lay all material to inspect for quality and to determine the best blend. All materials must be acclimated prior to installation, and air and surface temperature should be between 50⁰F and 80⁰F during installation. Be sure to clean tiles to remove any dust, dirt or packing contaminants before installation.

Select a notch trowel size that will achieve the proper coverage rate and maintain a minimum bed thickness of 3/32". A minimum coverage of 95% is required. Per ANSI A108.5, apply mortar to the substrate using a notched trowel, and place tiles while material is wet and offers transfer. Once setting materials have adequately set (see product specifications for dry time) grouting can proceed. Before grouting, a grout release product may be advisable depending on material (ex: natural stone).

Prior to commencing installation, the Contractor is to examine substrates and advise of all existing conditions and surface contamination which will require correction. Before starting, substrates are to be cleaned to

remove concrete curing compounds, sealers, soil, mortar, dirt, dust, paint, etc.

Mixing

Mix according to printed product instructions included with each LATICRETE® product package.

Waterproofing and Crack Isolation Membrane Installation

[TCNA FAQ: Showers and Steam Rooms](#)

Install waterproofing and crack isolation membrane in compliance with ANSI A108.1, ANSI A108.13, and ANSI A108.17. Review the installation and plan the application sequence.

Pre-Treat Cracks and Joints

Fill all substrate cracks, cold joints and control joints to a smooth finish using a LATICRETE latex-fortified thin-set. Alternatively, a liberal coat of HYDRO BAN applied with a paint brush or trowel may be used to fill in non-structural joints and cracks.

Pre-Treat Coves and Floor/Wall Intersections

Fill all substrate coves and floor/wall transitions to a smooth finish and changes in plane using a LATICRETE latex-fortified thin-set. Alternatively, a liberal coat of HYDRO BAN applied with a paint brush or trowel may be used to fill in cove joints and floor/wall transitions <1/8” (3mm) in width.

Pre-Treat Drains

Drains must be of the clamping ring type, with weepers as per ASME A112.6.3. Apply a liberal coat of HYDRO BAN around and over the bottom half of drain clamping ring. Cover with a second liberal coat of HYDRO BAN. When the HYDRO BAN dries, apply a bead of LATICRETE LATASIL™ where the HYDRO BAN meets the drain throat. Install the top half of drain clamping ring.

Pre-Treat Penetrations

Allow for a minimum 1/8" (3mm) space between drains, pipes, lights, or other penetrations and surrounding tile, stone or brick. Pack any gaps around pipes, lights or other penetrations with a LATICRETE latex-fortified thin-set. Apply a liberal coat* of HYDRO BAN around penetration opening. Cover the first coat with a second liberal coat of LATICRETE® HYDRO BAN®. Bring HYDRO BAN up to level of tile or stone. When HYDRO BAN has dried to the touch seal with LATICRETE LATASIL™.

Main Application

Allow any pre-treated areas to dry to the touch. Apply a liberal coat of HYDRO BAN with a paint brush or heavy napped roller over substrate including pre-treated areas and allow to dry to the touch. Apply a second liberal coat of HYDRO BAN over the first coat. Allow the top coat of HYDRO BAN dry to the touch approximately. When the top coat has dried, inspect the surface for pinholes, voids, thin spots or other defects. HYDRO BAN will dry to an olive green color when fully cured. Use additional HYDRO BAN to seal any defects.

Movement Joints

Apply a liberal coat of HYDRO BAN, approximately 8” (200mm) wide over the necessary areas. Then embed and loop the 6” (150mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric and allow the HYDRO BAN liquid to bleed through. Immediately apply a second coat of HYDRO BAN.

Note: Dry coat thickness is 20 – 30 mil (0.02 - 0.03” or 0.5 - 0.8mm); consumption per coat is approximately 0.01 gal/ft² (approx. 0.4 L/ m²); coverage is approximately 100 ft² /gal (approx. 2.5 m²/ L). LATICRETE Waterproofing/Anti-Fracture Fabric can be used to pre-treat cracks, joints, curves, corners, drains, and penetrations with HYDRO BAN.

Protection

Provide protection for newly installed membrane, even if covered with a thin-bed tile, stone or brick installation against exposure to rain or other water for a minimum of 2 hours at 70°F (21°C). For temperatures between 45°F and 69°F (7°C to 21°C) allow a minimum 24 hour cure period.

Flood Testing

Allow membrane to cure fully before flood testing, typically a minimum 2 hours at 70°F (21°C) and 50% relative humidity. For temperatures between 50°F and 69°F (10°C to 21°C) allow a minimum 24 hour cure period prior to flood testing.

Floor Tile Installation

[TCNA FAQ: Thick Bed vs Thin Bed \(Thickset vs Thinset\)](#)

Bonded Thick Bed Method

Apply LATICRETE® 254 Platinum with flat trowel as a slurry bond coat approximately 1/16" (1.5mm) thick in compliance with current revision of ANSI A108. Place LATICRETE® 3701 Fortified Mortar Bed, or LATICRETE® 226 Thick Bed Mortar mixed with either LATICRETE® 3701 Mortar Admix or LATICRETE® 101 Rapid Admix, over slurry bond coat while still wet and tacky. Fully compact bed by tamping. Spread LATICRETE® 254 Platinum with flat trowel over surface of "green"/fresh mortar bed as a slurry bond coat approximately 1/16" (1.5mm) thick. Apply LATICRETE® 254 Platinum bond coat to back of tile and place each piece while bond coats are wet and tacky. Clean excess mortar/adhesive from finished surfaces. For installation of tile, brick or stone over cured (pre-floated) latex-Portland cement thick bed mortar, follow ***Thin Bed Method*** as follows.

Thin Bed Method

Install LATICRETE® 254 Platinum in compliance with current revisions of ANSI A108.02, A108.1B and ANSI A108.5. Use the appropriate trowel notch size to ensure proper bedding of the tile selected. Work the thinset into good contact with the substrate and comb with notched side of trowel. Spread only as much thinset as can be covered while the mortar surface is still wet and tacky. When installing over metal or other unusual substrates, use LATAPOXY® 300 Epoxy Adhesive. Allow installation to set until firm. Clean excess latex Portland cement mortar from tile face and joints between pieces.

Wall Tile Installation

Thin Bed Method

Install LATICRETE 254 Platinum (must use for Exterior Applications), with current revisions of ANSI A108.02 (3.11), A108.1B, ANSI A108.5 and ANSI A108.19. Select an appropriately-sized notched trowel that will provide full bedding and coverage. Use flat side of trowel to apply/key in the adhesive mortar into full contact with the substrate.

Immediately following, apply mortar with notched side of trowel.

Spread only as much mortar as can be covered while the mortar surface is still wet and tacky. Mortar is to be applied to the tile backs to key in the mortar with the flat side of the trowel then bed the tiles with a rubber mallet to achieve a minimum 95% continuous coverage for exterior applications, and coverage in accordance with ANSI A108.19.15.2 for interior vertical applications. Periodically remove a freshly set tile to validate coverage. Clean excess latex Portland-cement mortar from tile face and joints between pieces, immediately. Allow installation to cure for minimum 24 hours at 70° F (21° C), prior to grouting.

Cement Grout Installation

[Laticrete Grout Guide TDS 400](#)

NOTE: LATICRETE® PERMACOLOR® Select is an advanced, high performance cement grout that offers the industry's first dispensable dry pigment solution. LATICRETE PERMACOLOR Select is designed for virtually all types of residential and commercial installations and offers optimum performance on the most demanding exterior or interior applications. Easy to mix, grout and clean, LATICRETE

PERMACOLOR Select is fast setting and is suitable for joints 1/16" to 1/2" (1.5mm – 12mm) wide on floors or walls.

Surface Preparation

Before starting to grout, remove spacers and debris in grout joints and remove dust and dirt using a wet sponge. Do not leave water standing in joints. Substrate temperature must be between 40°F (4°C) and 90°F (32°C). Apply grout release or sealer if necessary. Refer to TDS 400 Grout Guide for more information on grouting.

Mixing

Use approximately 2 – 2.25 quarts (1.9 L – 2.1 L) of clean potable water for 2 LATICRETE PERMACOLOR Select Color Packs and 25 lbs (11.3 kg) of LATICRETE PERMACOLOR Select Grout Base. Do not use with 1776 Grout Enhancer or any other latex additive. Place water in a clean mixing container. Remove Color Packs from the cardboard container as well as the protective plastic sleeve. The internal bag is a water-dispersible pack – when using the 25 lbs. (11.3 kg) bag of LATICRETE PERMACOLOR Select, drop both color packs directly to water in clean mixing container. Mix with a drill mixer until pigment is dispersed evenly in container and the dispersible pack is no longer visible. Add LATICRETE PERMACOLOR Select Base. Mix with a slow speed drill mixer (300 rpm) for 1 minute. Wait for 5 minutes and remix with drill for 1 minute. If using the 12.5 lb. bag, drop only one color pack into 1 – 1.1 quarts (.8L – 1.0 L) of clean water.

Application

Clean tile surface with a damp sponge. Spread with a sharp, firm rubber grout float or wall float for narrow wall joints. To remove excess grout

hold the float at a 90° angle and pull it at a 45° angle diagonally across the joints to avoid pulling out the material.

Note: If the grout begins to stiffen during installation, remix with drill mixer for 10–15 seconds. DO NOT ADD MORE WATER.

Cleaning

For first cleaning wait approximately 35 – 40 minutes at 70°F (21°C). Wider joints or cooler temperatures may extend wait time. Begin initial cleaning by lightly wiping down entire area to be cleaned with a damp sponge. Wash with a damp sponge (not wet). Work diagonally to the joints. Allow to dry 3 hours at 70°F (21°C). For second cleaning use a damp sponge or dry cloth to remove remaining grout haze. *Note: If grout is to be sealed, LATICRETE generally recommends waiting a minimum of a 72 hours at 70°F (21°C) prior to sealing LATICRETE PERMACOLOR Select, with a LATICRETE STONETECH® PROFESSIONAL Sealer.*

Stain-Resistant Epoxy Grout Installation

Follow manufacturer's recommendations for minimum cure time prior to grouting. Substrate temperature must be 40-95°F (4-35°C). Verify joints are free of dirt, debris or grout spacers. Sponge or wipe dust/dirt off tile faces and remove water standing in joints. Apply grout release to face of tile if applicable. Cut open pouch and pour SPECTRALOCK PRO Premium Grout Part A Liquid into a clean mixing pail. Then open pouch and pour SPECTRALOCK PRO Premium Grout Part B Liquid into the mixing pail. Mix by hand or with a slow speed mixer until the two liquids are well blended. Then, while mixing, add SPECTRALOCK PRO Premium Grout Part C Powder and blend until uniform.

Install SPECTRALOCK PRO Premium Grout in compliance with current revisions of ANSI A108.02 and ANSI A108.6. Spread using a sharp edged, hard rubber float and work grout into joints, packing joints full and free of voids/pits. Then hold float face at a 90° angle to grouted surface and use float edge to "squeegee" off excess grout. Once excess grout is removed, a thin film/haze will be left. Initial cleaning of the remaining film/haze can begin approximately 20-30 minutes after grouting. Begin by mixing cleaning additive packet with 2 gallons (7.6 L) of clean water in a clean bucket to make cleaning solution. Dip a clean sponge into the bucket and then wring out cleaning solution until sponge is damp. Using a circular motion, lightly scrub grouted surfaces with the damp sponge to dissolve grout film/haze. Then drag sponge diagonally over the scrubbed surfaces to remove froth. Rinse sponge frequently and change cleaning solution at least every 50 ft² (4.7m²). Discard sponges as they become "gummy" with residue. Within one (1) hour of finishing first cleaning, clean the same area again following the same procedure but utilizing a clean white scrub pad and fresh cleaning solution. Rinse scrub pad frequently. Drag a clean sponge diagonally over the scrubbed surfaces to remove froth. Use each side of sponge only once before rinsing and change cleaning solution at least every 50 ft² (4.7m²).

Allow cleaned areas to dry and inspect tile/stone surface. For persistent grout film/haze (within 24 hours), repeat scrubbing procedure with undiluted white vinegar, if material allows, and clean pad. Rinse with clean water and allow surface to dry. Inspect grout joint for pinholes/voids and repair them with freshly mixed SPECTRALOCK® PRO Premium Grout.

Expansion and Control Joints

Provide control or expansion joints as located in contract drawings and in full conformity, especially in width and depth, with architectural details.

- Substrate joints must carry through, full width, to surface of tile, brick or stone.
- Install expansion joints in tile, brick or stone work over construction/cold joints or control joints in substrates.
- Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
- Joint width and spacing depends on application - follow TCNA **“Handbook for Ceramic, Glass, and Stone Tile Installation”** Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
- Joint width: $\geq \frac{1}{8}$ " (3mm) and ≤ 1 " (25mm).
- Joint width: depth ~2:1 but joint depth must be $\geq \frac{1}{8}$ " (3mm) and $\leq \frac{1}{2}$ " (12mm).
- Layout (field defined by joints): 1:1 length: width is optimum but must be $\leq 2:1$.

Remove all contaminants and foreign material from joint spaces/ surfaces, such as dirt, dust, oil, water, frost, setting/grouting materials, sealers and old sealant/backer. Use LATICRETE® LATASIL™ 9118 Primer for underwater and permanent wet area applications, or for porous stone (e.g. limestone, sandstone etc...) installations. Install appropriate backing material (e.g. closed cell backer rod) based on expansion joint. Apply masking tape to face of tile, brick or stone veneer. Use caulking gun, or other applicator, to completely fill joints with sealant. Within 5-10 minutes of filling joint, ‘tool’ sealant surface to

a smooth finish. Remove masking tape immediately after tooling joint. Wipe excess sealant off all surfaces immediately.

Cold Weather Note

The curing of latex and Portland cement-based materials is retarded by low temperatures and finished work should be protected for an extended period of time. Typically, for every 18° F below 70° F (10°C below 21°C), latex and Portland cement-based materials take twice as long to cure.

Hot Weather Note

The evaporation of moisture in Portland cement grouts is accelerated by hot, dry conditions. Apply grout to dampened surfaces & protect freshly spread grout & finished work when installing in temperatures over 95 degrees F (35 degrees C).

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LATICRETE Technical Services provides review of job specifications and plans, project detail planning and review, and provides answers to questions concerning the installation of ceramic and decorative tile,

brick, marble and stone. Call toll free USA +1 (203) 393-0010. Fax: USA +1 (203) 393-1684. E-mail:technicalservices@laticrete.com, Internet:www.laticrete.com. To obtain a copy of detailed product information, most recent revisions of LATICRETE data sheets, and answers to installation questions, E-mail:technicalservices@laticrete.com or call (800) 243-4788 x.1235.

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