



# ARTO Ceramic Wall Tiles Installation Recommendations



## SCOPE

Applies to installations of ARTO ceramic wall tiles on interior and exterior walls.

## NOTES TO SPECIFIER

Detail and specify HYDRO BAN® in all wet and exterior areas, and over existing, non-structural, hairline cracks ( $\leq 1/8"$  or 3mm) in the substrate. LATICRETE Systems installations are covered by a comprehensive 25 year warranty (Reference LATICRETE DS 025.0APD). A LATICRETE "System" approach to exterior façade installations, over steel and wood-framed walls, is covered by a comprehensive 15 year warranty (Reference LATICRETE DS 230.15APD) - Note the limitations in applicable product assortments below.

## STEEL OR WOOD FRAMED EXTERIOR FACADES NOTE

Due to increased variables in movement-related issues, steel and wood framed exterior facades require particular attention to detail when designing tile installation systems. As a result, LATICRETE limits warranty coverage to 15 years, and strictly limits product selection to those listed below, under the 15 Year Warranty "Materials" section. No substitutions will be accepted.

Substrate deflection under all live, dead and impact loads, including concentrated loads, is not to exceed L/600. Applications are not to exceed 30 feet (9.1 meters) in height or 25,000 square feet (2250 square meters) in area. Installations are to conform to all applicable building codes including the International Building Code (IBC) and International Residential Code (IRC) requirements. Tile units are not to exceed 24 inches (.9 meters) in the greatest dimension nor more than 288 square inches (.28 square meters) in total area, and are not to weigh more than 9 pounds per square foot, unless approved by the local governing officials and the engineer of record.

When used as an aid to develop all steel and wood framed exterior façade specifications, disregard references / verbiage related to products NOT LISTED in the 15 Year warranty "Materials" section above.

Please contact your local LATICRETE representative for assistance.

## INSTALLATION MATERIALS (25 YEAR WARRANTY SYSTEM)

**Ceramic Wall Tiles:** Produced by ARTO; [www.artobrick.com](http://www.artobrick.com).

**Latex-Portland Cement Thick Bed Mortar (for wall "scratch" and "brown coats"):** LATICRETE® 3701 Fortified Mortar Bed

**Latex-Portland Cement Thin Bed Mortar (ANSI A118.15 and ANSI A118.4):** LATICRETE 257 TITANIUM™ or LATICRETE 254 Platinum (regular and rapid-setting)

**Large Heavy Tile Mortar:** LATICRETE MULTIMAX™ LITE

**Waterproofing/Crack Isolation (ANSI A118.10 and ANSI A118.12):** HYDRO BAN®

**Epoxy Waterproofing (for use at waterproof membrane / flashing interfaces):** LATAPOXY® Waterproof Flashing Mortar

**Epoxy Thin Bed Mortar (for bonding to clean, rigid, metal flashings):** LATAPOXY 300 Epoxy Adhesive

**Latex-Portland Cement Grout:** LATICRETE PERMACOLOR™ Grout or LATICRETE® PERMACOLOR® Select Grout

**Sealer:** LATICRETE® STONETECH® Bulletproof® Sealer

**100% Silicone Caulk:** LATICRETE LATASIL™ (and LATICRETE LATASIL 9118 Primer)

## INSTALLATION MATERIALS (15 YEAR WARRANTY FOR STEEL AND WOOD-FRAMED EXTERIOR FACADES)

**Ceramic Wall Tiles:** Produced by ARTO; [www.artobrick.com](http://www.artobrick.com).

**Waterproofing/Crack Isolation (ANSI A118.10 and ANSI A118.12):** HYDRO BAN®

**Epoxy Waterproofing (for use at waterproof membrane / flashing interfaces):** LATAPOXY® Waterproof Flashing Mortar

**Latex-Portland Cement Thick Bed Mortar (for wall “scratch” and “brown coats”):** LATICRETE® 3701 Fortified Mortar Bed

**Latex-Portland Cement Thin Bed Mortar (ANSI A118.15 and ANSI A118.4):** LATICRETE 257 TITANIUM™ or LATICRETE 254 Platinum (regular and rapid-setting)

**Large Heavy Tile Mortar:** LATICRETE MULTIMAX™ LITE

**Latex-Portland Cement Grout:** LATICRETE PERMACOLOR® Grout or LATICRETE® PERMACOLOR® Select Grout

**Sealer:** LATICRETE® STONETECH® Bulletproof® Sealer

**100% Silicone Caulk:** LATICRETE LATASIL™ (and LATICRETE LATASIL 9118 Primer)

Tile installation materials to be supplied solely by LATICRETE International, Inc.; Bethany, CT; USA Telephone: 1 (203) 393-0010; Fax: 1 (203) 393-1684; E-mail: [technicalservices@laticrete.com](mailto:technicalservices@laticrete.com); Website: [www.laticrete.com](http://www.laticrete.com).

## PREPARATIONS

The installer is to examine substrates and advise the General Contractor and Architect of all existing conditions and surface contamination, which will require correction, before the work commences. Before starting, substrates are to be cleaned to remove concrete curing compounds, sealers, soil, mortar, dirt, dust, paint, etc. Curing compounds and sealers must be removed by bead-blasting, grit / sand blasting, high-pressure hydro blasting, diamond wheel grinder with dustless vacuum attachment, or equivalent methods of mechanical scarifying. After removal of the curing compounds and sealers, all rough, uneven or "out-of-plumb" surfaces must be made "plumb and true" to within 1/8" in 10' (3 mm in 3 m) using LATICRETE® 3701 Fortified Mortar Bed. Dry and dusty concrete and masonry surfaces must be water washed and excess water removed just prior to the application of LATICRETE installation materials.

## EXPANSION AND CONTROL JOINTS

Existing joints in substrate are to be carried through the tile work and conform to architectural details. Expansion joints must be installed where tile abuts restraining surfaces, such as perimeter walls, curbs, columns, corners, etc. Expansion joints must be installed at all "changes of plane" in the tile work. Refer to Tile Council of North America (TCNA) Detail EJ-171 (Current Year) for industry recommendations. Use LATICRETE LATASIL™, with LATASIL 9118 Primer, for all joints less than or equal to ½ inch (12 millimeters) wide. Install per LATICRETE published installation instructions (DS 6200.1 & DS 6528.1).

## MIXING

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

## WATERPROOFING /CRACK ISOLATION MEMBRANE INSTALLATION

Install HYDRO BAN® in compliance with current revisions of ANSI A108.1 (2.7 Waterproofing), ANSI A108.13, and ANSI A108.17. Review the installation and plan the application sequence. Shake or stir before using.

**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. Apply a liberal coat\* of HYDRO BAN approximately 8" (200mm) wide over substrate cracks, cold joints, and control joints using a paint brush or heavy napped paint roller.

**Pre-Treat Penetrations** - Allow for a minimum 1/8" (3mm) space between drains, pipes, lights, or other penetrations and surrounding tile work. 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 membrane. Bring HYDRO BAN up to level of tile. When the membrane 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 liquid with a paint brush or heavy napped roller over substrate including pre-treated areas and allow to dry to the touch. Install another liberal coat\* of HYDRO BAN liquid over the first coat. Let the top coat of membrane dry to the touch approximately 1 – 2 hours at 70°F (21°C) and 50% RH.

When the top coat has dried to the touch inspect the surface for pinholes, voids, thin spots or other defects. HYDRO BAN will dry to an olive green color. Use additional HYDRO BAN liquid to seal all defects.

**Movement Joints** – For full details, refer to HYDRO BAN installation instructions (DS 663.5) in each pail. Apply a liberal coat<sup>^^</sup> of HYDRO BAN liquid, approximately 8" (200 mm) wide over the areas. Then embed and loop the 6" (150 mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric and allow to bleed through. Then, apply a second coat<sup>^^</sup> of HYDRO BAN liquid.

**\* Dry coat thickness of HYDRO BAN liquid membrane is 20 – 30 mil (0.02 - 0.03" or 0.5 - 0.8mm); consumption per coat is approximately 0.01 gal/ft<sup>2</sup> (approx. 0.4 L/m<sup>2</sup>); coverage is approximately 100 ft<sup>2</sup> /gal (approx. 2.5 m<sup>2</sup> / L). LATICRETE Waterproofing/Anti-Fracture Fabric is not needed with HYDRO BAN Membrane to pre-treat cracks, joints, curves, corners, drains, and penetrations per the installations described above, but use of the Fabric with HYDRO BAN may be an option if desired – consult a Laticrete representative for more information.**

**Protection** - Provide protection for newly installed membrane, even if covered with a thin-bed tile installation against exposure to rain or other water for a minimum of 2 hours, after the final liquid coat has dried, at 70°F (21°C) and 50% RH. For temperatures between 45°F and 69°F (7°C to 21°C) allow a minimum 24 hour cure period.

## EPOXY WATERPROOF FLASHING INSTALLATION

**Main Application** – Apply LATAPOXY® Waterproof Flashing Mortar to substrate using 3/16" by 5/32" (5 x 4 mm) V notched trowel. Allow the trowel to gauge the appropriate amount of material onto the surface using the V notch side. Once material is applied, use the flat side of the trowel to "knock down" or flatten all ridges to create a smooth flat surface. If voids or "pinholes" appear in the material, cover same or next day with LATAPOXY Waterproof Flashing Mortar. Make sure all 90 degree angles at cove / corners are properly filled.

**Flashing and Facades** – Apply LATAPOXY Waterproof Flashing Mortar directly to flashing and waterproof membrane covering the façade, extending 3" (76 mm) on both sides beyond the flashing / façade interface. The mortar will bond directly to the flashing and waterproofing membrane. Ensure proper thickness is achieved (min 40 mil).

**Penetrations** – Assure surfaces are properly prepared. Pack all voids around penetrations with closed cell backer rod in appropriate manner. Apply LATAPOXY Waterproof Flashing Mortar directly to pipe penetration, extending 3" (76 mm) above point of installation. No fabric or sealant is required. The membrane will bond directly to the pipe. Ensure proper thickness is achieved (min 40 mil).

**Expansion Joints** – Trowel LATAPOXY Waterproof Flashing Mortar flush to the edge of the joint on each side. Fill the joint with appropriate sized closed cell backer rod and fill with LATICRETE LATASIL™.

**Coves and Corners** – Trowel LATAPOXY Waterproof Flashing Mortar 6" (152 mm) in both vertical and horizontal substrates from cove. Ensure proper thickness by using recommended trowel and install per instructions described in Main Application section above.

## WALL TILE INSTALLATION

**Wall Renders (Scratch & Brown Method):** No slurry bond coat is required prior to placing wall renders. Apply LATICRETE® 3701 Fortified Mortar Bed with a steel trowel pressing mortar into good contact with the substrate. Apply "scratch coat" first – not to exceed 1/2" (12 mm) thickness. Scratch mortar before it hardens. After "scratch coat" hardens, apply the "brown or float coat" working the mortar into good contact with the scratch coat. Do not exceed 5/8" (15 mm) thickness per lift. Scratch all lifts that will receive additional float coats. Float wall with steel trowel and straight edges to form a plumb and true mortar surface. Allow the completed render coats to cure for 24 hours at 70°F (21° C) prior to the installation of tile with the Thin Bed Method. Allow minimum 72 hours cure time, at 70°F (21° C) prior to the installation of HYDRO BAN membrane.

**Thin Bed Method:** Install LATICRETE 257 TITANIUM™ or LATICRETE 254 Platinum Thinset 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. Back-butter all tiles to assure 100% coverage to tile backs. When installing over metal or other unusual substrates, use LATAPOXY 300 Epoxy Adhesive. Allow installation to set 24 hours at 70°F (21° C). Clean excess latex Portland cement mortar from tile faces and joints between pieces.

**Large Heavy Tile Mortar Method:** Install LATICRETE MULTIMAX™ LITE in compliance with current revisions of ANSI A108.02 (3.11), A108.1B and ANSI A108.5. Use the appropriate trowel notch size to ensure proper bedding of the tiles. Work LATICRETE MULTIMAX™ LITE into good contact with the substrate and comb with notched side of trowel. Spread only as much LATICRETE MULTIMAX™ LITE as can be covered while the mortar surface is still wet and tacky. When installing large format (>8" x 8"/200mm x 200mm) tiles, rib/button/lug back tiles, pavers or sheet mounted ceramics/mosaics, apply Large Heavy Tile Mortar onto the back of (i.e. 'back-butter') each piece/sheet in addition to troweling Large Heavy Tile Mortar over the substrate. Beat each piece/sheet into the Mortar with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess LATICRETE MULTIMAX™ LITE from tile or stone face and joints between pieces.

### CEMENT GROUT INSTALLATION:

**Polymer Fortified Cement Grout (ANSI A118.7):** Allow tile installation to cure a minimum of 24 hours @ 70° F (21°C). Verify grout joints are free of dirt, debris and spacers. Sponge or wipe dust/dirt off veneer face and remove any water standing in joints. Apply a suitable tile pre-sealer or grout release as recommended by ARTO. Surface temperature must be between 40-90° F (4-32°C). Pour approximately 64 oz. (1.9 L) of clean, potable water into a clean mixing container. Add a 25 lb. (11.3 kg) bag of LATICRETE PERMACOLOR Grout to the container while mixing. Mix with a slow speed mixer to a smooth, stiff consistency. Install PERMACOLOR® Grout in compliance with current revisions of ANSI A108.1A, ANSI A108.02 and ANSI A108.10. Dampen dry surfaces with clean water. Spread using a sharp edged, hard rubber float and work grout into joints, packing joints full and free of voids/pits. Hold float face at a 90° angle to grouted surface and use float edge to "squeegee" off excess grout, stroking diagonally to reduce pulling grout out of filled joints. Initial cleaning can begin as soon as grout has become firm, typically 20-30 minutes after grouting @ 70° F (21°C). Begin initial cleaning by lightly dampening the entire grouted area with a damp sponge. Then wash clean the entire area with a damp (not wet) sponge. Drag a clean, dampened sponge, diagonally over the tiles faces to remove any grout haze left after "squeegeeing." Rinse sponges frequently and change rinse water at least every 200 ft<sup>2</sup> (19m<sup>2</sup>). Repeat this cleaning sequence again if grout haze is still present. Allow grout joints to become firm. Inspect joints for pinholes/voids and repair them with freshly mixed grout. Within 24 hours, check for remaining haze and remove it with warm soapy water and a nylon scrubbing pad. Do not use acid cleaners on latex portland cement grout less than 10 days old. PERMACOLOR® Select Mixing Use approximately 2 – 2.25 quarts (1.9 L – 2.1 L) of clean potable water for 2 PERMACOLOR Select Color Packs and 25 lbs (11.3 kg) of 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 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 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 lbs bag, drop only one color pack into 1 – 1.1 quarts (.8L – 1.0 L) of clean water.

### SEALERS (FOR CEMENT BASED GROUT)

**STONETECH® Bulletproof® Sealer:** Read entire label before using. Use only as directed. Always test in a small inconspicuous area with a 24-hour cure time to determine ease of application and desired results. Allow new cement based grout installations to cure for a minimum of 72 hours prior to application. Make sure surface is clean and free of waxes and coatings. STONETECH Bulletproof Sealer may be applied to damp surfaces one hour after standing water has been removed. Surface temperature should be between 50°F and 80°F (10°C and 27°C). Ensure that the area is well-ventilated during application and until the surface is dry. Keep children and pets out of the area until treated surface is dry.

1. Ensure cap is closed and sealed, and shake well before use.
2. Mask off surfaces not intended to be treated.
3. Liberally apply an even coat of STONETECH® BulletProof Sealer using a paint pad, roller, brush or low-pressure sprayer.
4. Allow sealer to penetrate the surface for 10-15 minutes. During this time, keep the surface wet with sealer, adding more sealer as needed. DO NOT ALLOW SEALER TO COMPLETELY DRY ON THE SURFACE.
5. Thoroughly wipe dry the entire surface with clean absorbent towels.
6. A second coat may be needed for porous, absorbent surfaces. If a second coat is required, it should be applied within 30-40 minutes from the initial application as directed in steps 3-5.

7. Should a sealer residue appear, rewet the impacted section of the surface with sealer. Agitate the surface with a white nylon scrubbing pad to loosen residue and wipe dry with a clean, absorbent towel.
8. A full cure is achieved in 24-72 hours. Use of the treated surface may resume in 6-8 hours. If use of the surface must resume sooner, cover the treated surface with red rosin paper to protect it until full cure has been achieved.  
Clean tools used during application with water.

## PROTECTION

- A. Protect finished installation under provisions of section 01 50 00. To avoid damage to finished tile work, schedule installations to only after all structural work, building enclosure, and overhead finishing work are completed. Keep all traffic and trades off finished tile begin until they have fully cured.
- B. Tent / shade and heat areas that will be subjected to the elements, or freezing temperatures, during installation and cure periods.
- C. Protect newly installed exterior adhered veneer installations from direct exposure to rain for 7 days at 70°F (21°C). Protection and corrective action primarily requires temporary enclosures or tarpaulins prior to, during, and immediately after installation to shield from rain. If prolonged exposure occurs, surfaces that appear dry may be saturated internally and require testing to determine suitability of certain overlay substrates, membranes, and adhesives. Protection applies to the substrate, the installation of adhesives and joint grouts, post-installation (rain and temperature protection) until suitable cure, and also the storage and handling of the cladding material.
- D. The minimum substrate temperature requirement for cement based thin set mortars and grouts is 40° F (4°C) and the maximum temperature is 90° F (32°C). Extend period of protection of tile work at lower temperatures, below 60°F (15°C), and at high relative humidity (>70% R.H.) due to retarded set times of mortar/adhesives. Replace or restore work of other trades damaged or soiled by work under this section.

## COLD WEATHER NOTE

The curing of installation 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), installation 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). Work in shaded environments, cover areas with light colored tarps, and work at cooler times of days when scheduling allows.

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 tile, brick, marble and stone. Call toll free USA +1 (203) 393-0010. Fax: USA +1 (203) 393-1684. E-mail: [technicalservices@laticrete.com](mailto:technicalservices@laticrete.com). Internet: [www.laticrete.com](http://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](mailto:technicalservices@laticrete.com) or call (800) 243-4788 x.235.

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