Globally Proven
Construction Solutions

Azzo® Floor Tile Installation Guidelines

SCOPE

Applies to installations of AZZO® Tile on interior and exterior floors.

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).
- Detail and specify HYDRO BAN® waterproofing and crack isolation membrane in all wet areas, and over existing, non-structural, hairline cracks (≤ 1/8" or 3mm) in the substrate.
- A LATICRETE® "System" approach to installation is covered by a comprehensive 25 year warranty (Reference LATICRETE DS 025.0) for all interior and exterior floor installations.
- For additional consultation, contact LATICRETE Technical Services at (800) 243-4788, or via email, at technicalservices@laticrete.com

INSTALLATION MATERIALS

Tiles: AZZO® pre-cast terrazzo floor tiles produced by Azzo Tile (www.azzotile.com)

Vapor Reduction Coating: NXT™ Vapor Reduction Coating

Uncoupling Membrane: STRATA_MAT™

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

Sound and Crack Isolation Mat: 170 Sound & Crack Isolation Mat

Latex-Portland Cement Thick Bed Mortar: 3701 Fortified Mortar

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

Waterproofing and Crack Isolation Membrane: HYDRO BAN®

Latex-Portland Cement Thinset Mortar: 254 Platinum (regular or rapid-setting)

Epoxy Thinset Mortar: LATAPOXY® 300 Adhesive

Latex-Portland Cement Grout: PERMA COLOR™ Grout

Stain-Resistant Epoxy Grout: SPECTRALOCK® PRO Premium Grout

Industrial Epoxy Grout: SPECTRALOCK® 2000 IG.

100% Silicone Caulk: LATASIL™ used with LATASIL 9118 Primer

Pre-formed Shower Systems and Drains: HYDRO BAN Pre-Formed Shower System and Drains

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

PREPARATIONS

Prior to commencing installation, the Contractor 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, hydro blasting, diamond wheel grinder with dustless vacuum attachment, or equivalent methods of mechanical scarifying. For tiles with edges shorter than 15" (375mm), maximum allowable substrate variation is ¼" in 10' (6mm in 3m) from the required plane, with no more than 1/16" variation in 12" (1.5mm variation in 300mm), when measured from the high points in the surface. For tiles with at least one edge 15" (375mm) in length, maximum allowable substrate variation is 1/8" in 10' (3mm in 3m) from the required plane, with no more than 1/16" variation in 24" (1.5mm variation in 600mm), when measured from the high points in the surface. Use either 3701 Fortified Mortar Bed, or NXT Level Plus (interior only), and related NXT Primer, as a self leveling underlayment. Dry and dusty concrete and masonry surfaces are to be water washed, with excess water removed, just prior to the application of LATICRETE Systems Materials.

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 the tile surface.
- Install expansion joints in tile work over construction/cold joints or control joints in substrates.
- Install expansion joints where tiles abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane, and corners.
- Joint width and spacing depends on application. Follow guidelines in TCNA "Handbook for Ceramic, Glass, and Stone Tile Installation" Detail "EJ-171 Expansion Joints"
- Joint width: ≥ ⅛" (3mm) and ≤ 1" (25mm)
- Joint width: depth ~2:1 but joint depth must be ≥ ⅛" (3mm) and ≤ ½" (12mm).

Layout (field defined by joints): 1:1 length: width is optimum but must be ≤ 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 LATASIL™ 9118 Primer for permanent wet area applications. Install appropriate backing material (e.g. closed cell backer rod) based on expansion joint design and as specified in section 07 92 00. Apply masking tape to face of tiles for protection during application. 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.

VAPOR REDUCTION COATING INSTALLATION

Surface Preparation – Concrete slabs must be clean, structurally sound, absorptive, and have an ICRI concrete surface profile (CSP) of 3 - 5. All dirt, oil, paint, laitance, efflorescence, sealers, curing compounds and any other bond breaking contaminants must be removed down to the full depth of contamination by shot blasting or other mechanical means then swept and vacuumed clean. Use of

chemicals to remove contaminants is prohibited. Use of sweeping compound is not recommended as they may contain oil which will act as a bond breaker. Do not use over gypsum or asphalt based products. Per ASTM F3010, concrete slab to receive NXT Vapor Reduction Coating must have a tensile pull-off strength of 200 psi (1.4 MPa) or greater when tested in accordance with ASTM C1583. Surface temperature must be 50–90°F (10–32°C) during application and for 24 hours after installation. In all cases, the surface temperature of the prepared concrete slab must be warm enough to avoid condensation on the surface of the concrete.

Joints, Cracks, Surface Depressions and Other Irregularities - All joints and cracks should be evaluated and repaired if necessary prior to installation of NXT Vapor Reduction Coating. A good crack repair technique depends on knowing the causes and selecting appropriate repair procedures that take these causes into account. Repairing a crack without addressing the cause may only be a temporary fix. Successful long-term repair procedures must address the causes of the cracks as well as the cracks themselves. Refer to ACI 224.1R-07 for guidance on evaluation and repair of cracks in concrete. LATICRETE product application over moving cracks and joints is not recommended.

1. Moving joints (e.g. expansion joints, isolation joints, etc.) and dynamic (moving) cracks must be honored up through the NXT Vapor Reduction Coating. LATICRETE is not responsible for vapor emission through untreated joints or for areas where cracks may develop later.
2. All non-moving joints and dormant cracks (e.g. saw cuts, surface cracks, grooves, control joints, etc.) must be cleaned out and free of all loose debris. Non-structural cracks up to 1/8" (3 mm) in width can be filled with NXT Vapor Reduction Coating epoxy during main application. Inspect these areas to ensure cracks are completely filled with no voids.

Non-moving joints, dormant cracks greater than 1/8" (3 mm) wide, can be patched with mixture of 1 part NXT Vapor Reduction Coating and 3 parts clean, washed play sand. In a suitable container, such as an empty NXT Vapor Reduction Coating pail, pour 1 part NXT Vapor Reduction Coating pre-blended to 3 parts clean, washed play sand, using a 300 rpm drill with jiffy paddle, mix together for 2-3 minutes until the NXT Vapor Reduction Coating and qualified sand mixture is consistent. Slowly pour the mixture into the crack, using the flat side of a trowel force the epoxy/sand mixture into the crack. Surface crazing and hairline cracks do not need filling. Construction Joints, Expansion Joints and Large moving cracks that have lost aggregate lock (one side of crack is higher than the other) have structural implications and cannot be repaired using this method.

Moisture Evaluation - Moisture testing must be conducted in accordance with finish floor goods and adhesive manufacturers' requirements prior to NXT Vapor Reduction Coating application. When evaluating moisture conditions the HVAC system or a temporary enclosure must be operational and in place for the minimum specified time period recommended in the moisture test standard. The concrete floor slabs and the ambient air space above the floor must be at service temperature and relative humidity for at least 48 hours before taking moisture measurements in the concrete slab. These conditions must remain throughout the test period to ensure accurate results. Refer to the charts below for recommended mil thickness per moisture conditions:

Moisture Vapor Emission Rate (MVER) per ASTM F1869

MVER	Thickness	ft^2 /gal (m^2/L)
(680µg)	10	(3.9)
s. (680-1134µg)	14	(2.8)
(1134µg))	16	(2.4)

Relative Humidity (RH) per ASTM F2170

RH	Thickness	ft^2 /gal (m^2/L)
<80%	10	(3.9)
80-90%	14	(2.8)
>90%	16	(2.4)

Mixing - Before using, store resins at room temperature 65-85°F (18-30°C) for 24 hours to ensure ease of mixing. Mix Components A and B at a ratio of 1:2.3 by volume (components are packaged into the pails to the specified ratio). Pour the A component into the larger B component steel pail. Verify that all of the Part A liquid is drained from pail. Mix with a slow speed drill (<300 RPM) with a jiffy blade for 3 minutes, assuring mixture is fully uniform and that all ribbons of contrasting shade are completely eliminated. Pour the fully mixed material onto the substrate immediately after mixing.

Application - Pour ribbons of NXT™ Vapor Reduction Coating onto the prepared concrete and spread using appropriate round or square notch squeegee that is designed to apply the desired mil thickness in a single coat. Apply an even coat making sure to cover all areas thoroughly. Immediately following, while epoxy is still wet, use a high quality 3/8" (9 mm) nap non-shedding paint roller to back-roll at 90^0 from the squeegee direction to help ensure full coverage and uniform thickness. Replace worn squeegee blades and paint rollers when necessary to help ensure proper application. Use a paint brush to apply epoxy around penetrations, columns, and any other obstructions. Periodically check mil thickness using a NXT Wet Film Thickness Gauge. Allow to cure for 12 hours at 50-90°F (10-32°C) prior to installation of underlayment or finish flooring. Always consult flooring and adhesive manufacturer's installation instructions, restrictions and confirm compatibility with NXT Vapor Reduction Coating. Always test performance and compatibility of floor systems prior to application.

Coverage - Each full unit will yield approximately 650 - 1040 ft2 (60.4 – 96.3 m2). Each mini unit will yield approximately 240 - 360 ft2 (22.2 – 33.3 m2).

Flooring and Self Leveling Underlayments Installation - In all cases the NXT Vapor Reduction Coating surface must be protected from traffic, dust, debris, rain, and any other contaminants. NXT self-leveling underlayments shall be installed over NXT Vapor Reduction Coating as soon as the epoxy is slightly tacky to the touch with no transfer; typically 12 hours after application depending on ambient and substrate conditions. The maximum time to install NXT self-leveling underlayments over NXT Vapor Reduction Coating is 24 hours. If NXT Vapor Reduction Coating is left open longer than 24 hours or the surface becomes contaminated, contact LATICRETE Technical Sales Representative. NXT self-leveling underlayments require the use of NXT Primer. Refer to TDS 230N for detailed primer installation instructions. If finish floor goods are to be installed directly on top of NXT Vapor Reduction Coating, then the epoxy surface must be allowed to cure until non-tacky to the touch, typically after a minimum of 24 hours. Always refer to finished floor manufacturer's recommendations regarding installation instructions, restrictions, moisture conditions and compatibility. Always test performance suitability and compatibility of finished floor systems prior to their application. Sample surfaces should be installed as a field test so as to be representative of entire surface and tested for intended use.

SELF-LEVELING UNDERLAYMENT INSTALLATION

If replacing an existing floor, all original finish and installation materials must be removed down to fresh substrate before surface preparation stage can begin. Use NXT™ Level Plus, and related NXT Primer, as a self leveling underlayment to attain proper floor flatness, on interior applications only.

Surface Preparation - Concrete slabs must have a minimum ICRI concrete surface profile (CSP) of 3. For more detailed ICRI CSP information refer to ICRI Guideline No. 03732. Use of chemicals to remove contaminants or to create a surface profile is not recommended. Use of a sweeping compound is not recommended as they may contain oil which will act as a bond breaker. Additionally, concrete slabs must readily absorb water, be clean, free of oil, wax, grease, sealers, curing compounds, asphalt, paint, deicing agents, dust, dirt, loose surface material and any other contaminant that will act as a bond breaker. In addition, tensile strength testing of the concrete substrate, per ASTM C1583 or ICRI Guideline No. 03739, must show a minimum of 72 psi (0.5 MPa) tensile strength prior to installation of LATICRETE self-leveling underlayment. Any areas that do not meet 72 psi (0.5 MPa) tensile strength must be removed and repaired.

Priming - Use NXT PRIMER with every application. NXT PRIMER is a concentrate and must be diluted with clean potable water. Dilution ratio varies depending on the substrate. Refer to LATICRETE Technical Data Sheet 230 for detailed information on priming. Allow the primer to completely dry for a minimum of 3 – 5 hours at 70^0 F (21°C) and 50% Relative Humidity. Primer is considered dry when it is dry to the touch, turns from milky white to clear, there is no release of primer from the substrate and a minimum of 3 hours has elapsed. Surface may feel slightly tacky. Drying time will vary depending on surface and ambient air conditions. Substrate temperature must be a minimum 40°F (4°C) during primer application and throughout drying time. Additionally, air temperature must be maintained between 50–90°F (10–32°C) during primer application and throughout drying time. Primer must also be protected from weather and direct sunlight. Temperatures below 70^{0}F (21°C) and/or relative humidity above 50% will increase drying time. Insufficient drying or poor film formation will result in pinholes and poor bond strength and may cause LATICRETE underlayments to de-bond. If Primer dries within 30 minutes or if a 24 hour period is exceeded after primer application, the surface must be primed again. Primed floor must not be opened to trade traffic prior to installation of LATICRETE self-leveling underlayments. If primed floor becomes contaminated by trade traffic, construction dust, debris, flooded or any other bond inhibiting substance prior to LATICRETE product installation, the contaminated primer must be completely removed by shot blasting, scarification or other mechanical means, properly re-primed and allowed to dry prior to NXT LEVEL PLUS installation.

Mixing –NXT LEVEL PLUS should be mixed with 5.0 – 5.5 quarts (4.7–5.2 ℓ) of water per 55 lb (25 kg) bag. Do not over water. For manual application, add product to water and mix for 2–3 min with a heavy duty drill (650 rpm) to obtain a lump free mix. NXT LEVEL PLUS can also be used in most pump equipment. Please consult with a LATICRETE representative to verify equipment compatibility. A flow test should always be performed to ensure that the mix is homogeneous and free from separation. The ideal flow range for NXT LEVEL PLUS is 11–12" (280 – 300 mm) using a LATICRETE Flow Test Kit. See TDS 235N –Flow Test Method - for more detailed instructions on performing flow tests.

Perimeter Isolation Strip - It is essential that all walls and building elements are isolated from the self-leveling underlayment pours to ensure proper expansion allowance against all restraining surfaces. Note: It is recommended to install a perimeter isolation strip before the installation of NXT LEVEL PLUS. Attach the perimeter isolation strip to the perimeter wall of the entire subfloor, as well as around the perimeter of any protrusions, in order to isolate the floor and wall/restraining surfaces. Temporarily fasten perimeter isolation strip in place with staples masking, duct, or carpet tape. The perimeter isolation strip can then be removed after the tiles have set firm. The joints can then be filled with LATASIL™.

Main Application - Substrate temperature should be between 40-90°F (4-32°C) during application and air temperature maintained between 50–90°F (10–32°C). Protect areas from direct sunlight. Do not use damp curing methods or curing and sealing compounds. If required to meet level tolerances, survey surface using a digital or electronic leveling device and apply level pegs as required. Adequate ventilation should be provided to ensure uniform drying. Pump or pour blended material onto substrate at an average thickness ranging between 1/8" to 1 1/4" (6–32 mm) for all surfaces. Immediately following placement lightly smooth the surface and pour lines, when not using elevation pins the use of a gauge rake will assist in controlling material depth. Do not expose LATICRETE self-leveling underlayments to rolling dynamic loads, such as forklifts or scissor lifts, for at least 72 hours after installation. Proper application is the responsibility of the user. Floor will be ready for foot traffic in 1-4 hours. Finished floor goods may be installed as soon as 16 hours after application of NXT LEVEL PLUS, subject to thickness, drying conditions and type of flooring materials. Coverage will be dependent upon relative rough-ness of substrate.

SOUND AND CRACK ISOLATION MAT INSTALLATION

It is essential that all walls and building elements are isolated from the floor. The use of acoustical ceiling panels in the space below would provide additional sound control.

Perimeter Isolation – Install a perimeter isolation strip before placing and trimming 170 Sound & Crack Isolation Mat. Attach the perimeter isolation strip to the perimeter wall around the entire subfloor, as well as around the perimeter of any protrusions, in order to isolate or break the vibration transmission path between the floor and the wall. Temporarily fasten perimeter isolation strip in place with masking, duct or carpet tape.

Main Application – Use 254 Platinum to adhere the 170 Sound & Crack Isolation Mat to the substrate. Use a ¼" x ¼" (6 mm x 6 mm) notched trowel and comb mortar over substrate, apply only enough mortar as can be covered within 25 minutes. Unroll the 170 Sound

& Crack Isolation Mat into place, in the thin-set adhesive mortar. Once installed, use a 25 – 45 lb. (11.3 – 20 kg) roller to embed the 170 Sound & Crack Isolation Mat firmly into the adhesive mortar. Allow to cure for 24 hours at 70°F (21°C). Install 170 Sound & Crack Isolation Mat over the entire area to be treated. Do not overlap edges but be sure the edges of each piece butt firmly together. Trim length of mat to desired length and width. Once fully cured, install terrazzo tiles as directed in "Thin Bed Method."

UNCOUPLING MEMBRANE INSTALLATION

Use STRATA_MAT™ as an alternative, or replacement, for traditional cement backer board or plywood underlayments. Offering the advantages of light weight, low dust, low waste and superior point load support, STRATA_MAT can be used to simplify the installation of tile and stone. It additionally adds both anti-fracture and uncoupling characteristics.

Properly prepare substrate to accept the installation of STRATA_MAT – refer to Data Sheet LDS 026.0 for specific details.

Installation of STRATA_MAT™ to the substrate:

Install STRATA_MAT to the substrate using the appropriate ANSI A118.4 or ANSI A118.11 mortar as outlined by the Tile Council of North America for the applicable installation. Mix the mortar on the loose side but still able to hold a notch to enable complete wetting of the STRATA_MAT fleece layer. Using a LATICRETE polymer modified thin-set mortar apply to the substrate using a 1/4" (3mm) x 3/16" V-notched trowel, being sure to key the mortar into the substrate. Ensure mortar is "wet-out" sufficiently to allow for optimal bedding of STRATA_MAT. Spread only enough mortar that can be covered with STRATA_MAT during the specified open time of the mortar. Embed STRATA_MAT into the mortar, fabric side down. Using a trowel or screed, apply pressure to ensure proper bedding. Be sure to verify proper coverage beneath the mat. Areas of STRATA_MAT embedded properly in the mortar will appear darker than areas not embedded. Lift occasionally if necessary to verify coverage. Cut mat to appropriate lengths when approaching walls or other objects, leave approximately 1/4" (3mm) between mat and edge of wall or object for movement. Install adjacent sections of STRATA_MAT™ in the same manner, being sure to line edges of each section without leaving any gaps.

Installation of AZZO® Tile onto STRATA_MAT:

The unique patent pending design feature of STRATA_MAT will provide for enhanced drying of the mortar between the porcelain tile and mat. LATICRETE recommends the use of 254 Platinum (regular or rapid-setting) for all installations.

Installation of the tile finish can begin immediately after embedding STRATA_MAT into the bonding mortar. Begin by skimming or filling the surface of STRATA_ MAT using the flat side of the trowel, ensuring all circles and vents are completely filled. Follow by combing mortar over the mat using a notched trowel that is suitable for the size of tile being installed. Install tiles in accordance with industry guidelines. Depending upon adhesive mortar used, tile size, tile type and job site conditions, grouting may be done once mortar has cured enough to allow for light foot traffic –STRATA_MAT usually will allow for grouting at 16 – 24 hours.

WATERPROOFING AND CRACK ISOLATION MEMBRANE INSTALLATION

Install waterproofing and crack isolation membrane 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. Pre-cut LATICRETE Waterproofing/Anti-Fracture Fabric (if required), allowing 2" (50mm) for overlap at ends and sides to fit the areas as required. Roll up the pieces for easy handling and placement. Shake or stir HYDRO BAN® 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 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. 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 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 ceramic 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. 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. Install another liberal coat* of HYDRO BAN over the first coat. Let the top coat of HYDRO BAN 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 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 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.

* Dry coat thickness is 20 – 30 mil (0.02 - 0.03" or 0.5 - 0.8mm); consumption per coat is approximately 0.01 gal/ft^2 (approx. 0.4 L/m^2); coverage is approximately 100 ft^2 /gal (approx. 2.5 m^2/ 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 terrazzo tile installation against exposure to rain or other water for a minimum of 2 hours 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.

Flood Testing - Allow membrane to cure fully before flood testing, typically a minimum 2 hours at 70°F (21°C) and 50% RH. Cold conditions will require a longer curing time. 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

Bonded Thick Bed Method: Apply 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 3701 Fortified Mortar Bed over slurry bond coat while still wet and tacky. Fully compact bed by tamping. Spread 254 Platinum with flat trowel over surface of "green"/fresh mortar bed as a slurry bond coat approximately 1/16" (1.5mm) thick. Apply 254 Platinum bond coat to back of tile and place each piece while bond coats are wet and tacky. Beat with a hardwood block or rubber mallet to level/imbed pieces before mortar bed takes initial set. Clean excess mortar/adhesive from finished surfaces. For installation of tile over cured (pre-floated) latex-portland cement thick bed mortar, follow *Thin Bed Method* as follows.

Thin Bed Method: Install 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 large format (>8" x 8") tile, "back-butter" tiles to assure 100% coverage. Beat each piece into the latex Portland cement mortar with a beating block or rubber mallet to insure full bedding and flatness. When installing over metal 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.

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 or tile spacers. Sponge or wipe dust/dirt off tile surface and remove any water standing in joints. Apply grout release as recommended to aid in ease of cleaning. 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 latex fortified cement 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 15-20 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 towel, dampened with water, or wipe a clean, dampened sponge, diagonally over the tile surface to remove any grout haze left after “squeegeeing.” Rinse towel/sponge frequently and change rinse water at least every 200 ft^2 ($19m^2$). Repeat this cleaning sequence again if grout haze is still present. Allow grout joints to become firm. Buff surface of grout with clean coarse cloth. Inspect joint 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.

Stain-Resistant Epoxy Grout (ANSI A118.3): 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 recommended by tile manufacturer. 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 ft^2 ($4.7m^2$). 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 ft^2 ($4.7m^2$). Allow cleaned areas to dry and inspect tile surface. For persistent grout film/haze (within 24 hours), repeat scrubbing procedure with undiluted white vinegar 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.

Industrial Epoxy Grout (ANSI A118.5): Store epoxy components for 24 hours at 70°F – 80°F (21°C – 27°C) to make mixing and application easy. Ensure that joints are clean, free of grease and oil contaminants, and dry before installing SPECTRALOCK® 2000 IG. Wipe tile surface with a damp sponge and to dry prior to regrouting. Surface temperature at time of regrout must be between 45 and 90 degrees F. Use a hard rubber epoxy grout float to pack and compact the joints fully. Pass the float diagonally held at a 90° angle across the tile to ensure the joints are packed fully and to avoid material being pulled out of the joint. Remove excess grout from tile surface. Do not leave a heavy film. INITIAL WASH: Add Initial Wash cleaning additive to two gallons (7.6 l) of clean water and mix until dissolved. Cleaning can begin 15 minutes to 30 minutes after grouting depending on temperature. Apply abundant cleaning water solution to tile. Lightly scrub in a circular motion with white nylon scrub pad. Remove froth by dragging damp sponge, towel (or Grout Eater Towels) diagonally across tile with hands held low. Rinse sponge or towel frequently and change water every 200 ft^2 (19 m^2) or

less. FINAL WASH: Add Final Wash cleaning additive to two gallons (7.6 l) of clean water and mix until dissolved. After initial cleaning (30 minutes to 90 minutes for SPECTRALOCK® 2000 IG; go over tile with cleaning water solution and white nylon scrub pad. Repeat same procedure as initial cleaning, but try to avoid contact with grout – clean tile surface only. At this time, repair any pinholes, clean up job site and clean base off. After final cleaning flush a gentle stream of 120°F – 130°F (49°C - 54°C) water to help the top of the grout to firm up the existing "tacky" gout surface. Run this warm water for at least 10 min. Inspect after 6 to 12 hours for SPECTRALOCK® 2000 IG. If any haze remains on tile, scrub with warm soapy water.

PROTECTION

To avoid damage to finished tile work, schedule floor installations to begin only after all structural work, building enclosure, and overhead finishing work are completed. Keep all traffic off finished tile floors until they have fully cured. Builder shall provide up to ¾" (19mm) thick plywood or OSB protection over non-staining Kraft® paper to protect floors after installation material shave cured. Covering the floor with polyethylene or plywood in direct contact with the floor may adversely affect the curing process of grout and latex/polymer fortified Portland cement mortar. Use kneeling boards, or equivalent, to walk/work on newly tiled floors. Replace or restore work of other trades damaged or soiled by work under this section. Protect exterior tile installations from exposure to rain for a minimum of 7 days at 70° F (21° C).

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 18º F below 70º F (10ºC below 21ºC), 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).

R July 11, 2014