**PART 3 - EXECUTION**

**3.1 SUBSTRATE EXAMINATION**

A. Verify that surfaces to be covered with ceramic tile, mosaics, pavers, brick, stone, trim or waterproofing are:

* 1. Sound, rigid and conform to good design/engineering practices;
  2. With maximum deflection under all live, dead and impact loads, including concentrated loads, of L/360 for ceramic tile, mosaics, pavers or brick and L/480 for stone;
  3. Clean and free of dust, dirt, oil, grease, sealers, curing compounds, laitance, efflorescence, form oil or loose plaster, paint and scale;
  4. Level and true to within 1/4” in 10’ (6mm in 3m) from the required plane; nor more than 1/16” in 12” (2mm in 305mm) when measured from the high points in the surface;
  5. Not leveled with gypsum or asphalt based compounds;
  6. Dry as per American Society for Testing and Materials (ASTM) D4263 **“Standard Test for Determining Moisture in Concrete by the Plastic Sheet Method.”**

1. Concrete surfaces shall also be:
   1. Cured a minimum of 28 days at 70°F/20°C, including an initial (7) day period of wet curing;

***NOTE TO SPECIFIER: LATICRETE® Latex Portland Cement Mortars do not require a minimum cure time for concrete substrates or mortar beds;***

* 1. Wood float finished, or better, if the installation is to be done by the thin bed method;

1. Advise General Contractor and Architect of any surface or substrate conditions requiring correction before tile work commences. ***Beginning of work constitutes acceptance of substrate or surface conditions.***

**3.2 SURFACE PREPARATION**

1. CONCRETE SUBSTRATES

**(Insert any Special Means of Preparation - In addition to the surface preparation requirements listed above; …….)**

1. **(List other Substrates as required and means of preparation as required)**

**(Insert any Special Means of Preparation – In addition to the surface preparation requirements listed above; …….)**

***NOTE TO SPECIFIER: The above are example surface categories; edit for project specific surfaces and conditions.***

**3.3 INSTALLATION** **- ACCESSORIES**

1. ***Waterproofing:***

***NOTE TO SPECIFIER: Adhesives/mastics, mortars and grouts for ceramic tile, mosaics, pavers, brick and stone are not replacements for waterproof membranes and will not prevent water penetration into occupied or storage spaces below.***

Install waterproof membrane in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.13. Review the installation and plan the application sequence. Pre-cut LATICRETE 9235 Waterproofing Membrane Reinforcing Fabric, allowing 2” (50 mm) for overlap at ends and sides. Roll up the pieces for easy handling and placement. Shake or stir LATICRETE 9235 Waterproofing Membrane Liquid before using. Pre-treat all substrate cracks, cold joints, control joints, coves, corners and penetrations according to Manufacturer’s specific recommendations. Allow pre-treated areas to dry to the touch. Apply a liberal coat of LATICRETE® 9235 Waterproofing Membrane Liquid with brush or roller over substrate including pre-treated areas. Before the coat dries, unroll LATICRETE 9235 Waterproofing Membrane Reinforcing Fabric, smooth out any wrinkles and press with brush or roller until LATICRETE 9235 Waterproofing Membrane Liquid “bleeds” through to surface. Apply another liberal coat of LATICRETE 9235 Waterproofing Membrane Liquid and allow it to dry to the touch, ~1-3 hours @ 70°F (21°C) & 50% RH. Apply a third liberal coat of LATICRETE 9235 Waterproofing Membrane Liquid to seal membrane. When last coat has dried to the touch, inspect final surface for pinholes, voids or thin spots. Use additional LATICRETE 9235 Waterproofing Membrane Liquid to seal such defects. For installation of ceramic tile, mosaic, paver, brick or stone, follow ***Thin Bed Method*** (§ 3.4 D.), which may begin as soon as last coat of LATICRETE 9235 Waterproofing Membrane Liquid has dried to the touch. Allow LATICRETE 9235 Waterproofing

Membrane to cure for at least 7 days @ 70°F (21°C) & 50% RH before running water penetration tests.

*Use the following LATICRETE System Materials:*

***LATICRETE 9235 Waterproofing Membrane***

References:

LATICRETE Detail Drawings: [WP300](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-300.doc), [WP301](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-301.doc), [WP302](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-302.doc), [WP303](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-303.doc)

LATICRETE Data Sheets: [236.0](http://apps.laticrete.com/AG/reference/LDS2360.pdf); [WPAF.5](http://apps.laticrete.com/AG/reference/WPAF.5)

LATICRETE Technical Data Sheets: [188](http://apps.laticrete.com/AG/reference/TDS188.doc), [189](http://apps.laticrete.com/AG/reference/TDS189.doc)

**3.4 INSTALLATION – TILE, BRICK & STONE**

1. ***General:*** Install in accordance with current versions of American National Standards Institute, Inc. (ANSI) “**A108 American National Standard for Installation of Ceramic Tile**” and NATC **“Handbook for Ceramic Tile Installation**.” Cut and fit ceramic tile, brick or stone neatly around corners, fittings, and obstructions. Perimeter pieces to be minimum half tile, brick or stone. Chipped, cracked, split pieces and edges are not acceptable. Make joints even, straight, plumb and of uniform width to tolerance +/- 1/16" over 8’ (1.5mm in 2.4m). Install divider strips at junction of flooring and dissimilar materials.
2. ***Lath & Plaster:*** Install cleavage membrane complying with current revision of ANSI A108.1 (A-2.1.8 Membrane or cleavage membrane Materials and A-4.1a.1.2). Install metal lath complying with the current revision of ANSI A108.1 (A-2.1.6 Metal Lath, A-4.1a.1.1 and A-4.1a.1.2). Apply latex-Portland cement mortar as scratch/leveling coat over wire lath, concrete or masonry in compliance with current revision of ANSI A108.1 (A-1 through A-3; A-4.1a.1.4). Float surface of scratch/leveling coat plumb, true and allow mortar to set until firm. For installation of tile, brick or stone, follow ***Thin Bed Method*** (§ 3.4 B.).

*Use the following LATICRETE System Materials:*

***LATICRETE® 3701 Mortar Admix***

***LATICRETE 226 Thick Bed Mortar***

References:

LATICRETE Data Sheets: [231.0](http://apps.laticrete.com/AG/reference/LDS2310.pdf), [239.1](http://apps.laticrete.com/AG/reference/LDS2391.pdf)

LATICRETE Technical Data Sheets: [105](http://apps.laticrete.com/AG/reference/TDS105.doc), [106](http://apps.laticrete.com/AG/reference/TDS106.doc), [114](http://apps.laticrete.com/AG/reference/TDS114.doc), [118](http://apps.laticrete.com/AG/reference/TDS118.doc), [122](http://apps.laticrete.com/AG/reference/TDS122.doc), [129](http://apps.laticrete.com/AG/reference/TDS129.doc)

1. ***Waterproofing:***

***NOTE TO SPECIFIER: Adhesives, mortars and grouts for ceramic tile, mosaics, pavers, brick and stone are not replacements for waterproof membranes. In addition to installing waterproof membrane where required, provide proper architectural detailing, especially at critical areas such as window heads/sills, penetrations and parapet walls.***

Install waterproof membrane in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.13. Review the installation and plan the application sequence. Pre-cut LATICRETE® 9235 Waterproofing Membrane Reinforcing Fabric, allowing 2” (50 mm) for overlap at ends and sides. Roll up the pieces for easy handling and placement. Shake or stir LATICRETE 9235 Waterproofing Membrane Liquid before using. Pre-treat all substrate cracks, cold joints, control joints, coves, corners and penetrations according to Manufacturer’s specific recommendations. Allow pre-treated areas to dry to the touch. Apply a liberal coat of LATICRETE 9235 Waterproofing Membrane Liquid with brush or roller over substrate including pre-treated areas. Before the coat dries, unroll LATICRETE 9235 Waterproofing Membrane Reinforcing Fabric, smooth out any wrinkles and press with brush or roller until LATICRETE 9235 Waterproofing Membrane Liquid “bleeds” through to surface. Apply another liberal coat of LATICRETE 9235 Waterproofing Membrane Liquid and allow it to dry to the touch, ~1-3 hours @ 70°F (21°C) & 50% RH. Apply a third liberal coat of LATICRETE 9235 Waterproofing Membrane Liquid to seal membrane. When last coat has dried to the touch, inspect final surface for pinholes, voids or thin spots. Use additional LATICRETE 9235 Waterproofing Membrane Liquid to seal such defects. For installation of ceramic tile, mosaic, paver, brick or stone, follow ***Thin Bed Method*** (§ 3.4 D.), which may begin as soon as last coat of LATICRETE 9235 Waterproofing Membrane Liquid has dried to the touch. Allow LATICRETE 9235 Waterproofing Membrane to cure for at least 7 days @ 70°F (21°C) & 50% RH before running water penetration tests.

*Use the following LATICRETE System Materials:*

***LATICRETE 9235 Waterproofing Membrane***

References:

LATICRETE Detail Drawings: [WP300](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-300.doc), [WP301](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-301.doc), [WP302](http://apps.laticrete.com/AG/stand-alones/Detail%20WP-302.doc)

LATICRETE Data Sheets: [236.0](http://apps.laticrete.com/AG/reference/LDS2360.pdf); [WPAF.5](http://apps.laticrete.com/AG/reference/WPAF.5)

LATICRETE Technical Data Sheets: [188](http://apps.laticrete.com/AG/reference/TDS188.doc), [189](http://apps.laticrete.com/AG/reference/TDS189.doc)

D. ***Thin Bed Method:*** Install latex Portland cement mortar in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.5 (A-4.3). Use the appropriate trowel notch size to ensure proper bedding of the tile, brick or stone selected. Work the latex Portland cement mortar into good contact with the substrate and comb with notched side of trowel. Spread only as much latex Portland cement mortar as can be covered while the mortar surface is still wet and tacky. When installing large format (>8” x 8”/200mm x 200mm) tile/stone, rib/button/lug back tiles, pavers or sheet mounted ceramics/mosaics, spread latex Portland cement mortar onto the back of (i.e. ‘back-butter’) each piece/sheet in addition to troweling latex Portland cement mortar over the substrate. Beat each piece/sheet into the latex Portland cement mortar with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess latex Portland cement mortar from tile or stone face and joints between pieces.

*Use the following LATICRETE****®*** *System Materials:*

***LATICRETE 254 Platinum Multipurpose Thin-Set Mortar***

References:

LATICRETE® Data Sheet: [677.0](file:///Q:\DataSheets\PDF%20Format\LDS6770.pdf)

LATICRETE Technical Data Sheets: [105](http://apps.laticrete.com/AG/reference/TDS105.doc)

E**. *Grouting or Pointing:***

***NOTE TO SPECIFIER: select one of following and specify color for each type/color of ceramic tile, mosaic, paver, trim unit:***

***1. Chemical Resistant, Water Cleanable Tile-Grouting Epoxy (ANSI A118.3):*** Follow manufacturer‘s recommendations for minimum cure time prior to grouting. Store liquid components of LATICRETE SpectraLOCK™ Pro Grout for 24 hours @ 70-80°F (21-27°C) prior to use to facilitate mixing and application. 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 absorptive, abrasive, non-slip or rough textured ceramic tile, pavers, bricks, stone or trim units that are not hot paraffin coated to facilitate cleaning. Cut open pouch and pour LATICRETE SpectraLOCK Pro Grout Part A Liquid into a clean mixing pail. Then open pouch and pour LATICRETE SpectraLOCK Pro Grout Part B Liquid into the mixing pail. Mix by hand or with a slow speed (<300 rpm) mixer until the two liquids are well blended. Then, while mixing, add LATICRETE SpectraLOCK Pro Grout Part C Powder and blend until uniform. Install LATICRETE SpectraLOCK Pro Grout in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.6 (A-4.4.1, A-4.4.3 through A-4.4.4). Spread using a sharp edged, hard rubber float and work grout into joints. Using strokes diagonal (at 45° angle) to the grout lines, pack 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, stroking diagonally to avoid pulling grout out of filled joints. 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 (wait longer at colder temperatures). 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 (4.7 m2). 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 (4.7 m2). 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 and clean pad. Rinse with clean water and allow surface to dry. Inspect grout joint for pinholes/voids and repair them with freshly mixed LATICRETE SpectraLOCK Pro Grout. *Cautions*: *Do not use undiluted white vinegar on polished marble or limestone unless a test spot in an inconspicuous area indicates no change in finish appearance; Do not use acid cleaners on epoxy grout less than 7 days old.*

*Use the following LATICRETE® System Materials:*

***LATICRETE SpectraLOCK Pro Grout***

References:

LATICRETE Data Sheets: [685.0](../reference/LDS6850.pdf); [685.5](http://apps.laticrete.com/AG/reference/310%20How%20To.pdf)

LATICRETE Technical Data Sheets: [111](http://apps.laticrete.com/AG/reference/TDS111.doc); [198](http://apps.laticrete.com/AG/reference/TDS198.doc); [207](http://apps.laticrete.com/AG/reference/TDS207.doc); [400](http://apps.laticrete.com/AG/reference/TDS400.doc)

***2. Polymer Modified Cement Grout (ANSI A118.7):*** Allow ceramic tile, mosaics, pavers, brick or stone 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 veneer face and remove any water standing in joints. Apply grout release to face of absorptive, abrasive, non-slip or rough textured ceramic tile, pavers, bricks, or trim units that are not hot paraffin coated to facilitate cleaning. Surface temperature must be between 40-90°F (4-32°C). Thoroughly shake or stir Laticrete® 1776 Grout Admix Plus and pour into a clean mixing container. Add LATICRETE 1500 Series Tri-Poly Fortified Sanded Grout or LATICRETE 1600 Series Tri-Poly Fortified Unsanded Grout powder, in approximately the proportions indicated in the chart below, to the container while mixing. Mix by hand or with a slow speed mixer to a smooth, stiff consistency.

|  |  |  |
| --- | --- | --- |
| **LATICRETE 1776**  **Grout Admix Plus** | **LATICRETE 1500 Series**  **Tri-Poly Fortified**  **Sanded Grout** | **LATICRETE 1600 Series**  **Tri-Poly Fortified**  **Unsanded Grout** |
| 26 fl oz (0.8 l) Bottle | 10 lbs (4.5 kg) Bag |  |
| 48 fl oz (1.4 l) Bottle |  | 8 lbs (3.6 kg) Bag |
| 64 fl oz (1.9 l) Bottle | 25 lbs (11.3 kg) Bag |  |

Install polymer modified cement grout in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.10 (A-4.7.3.5.4, A-4.7.4 through A-4.7.8). Dampen dry surfaces with clean water. Spread using a sharp edged, hard rubber float and work grout into joints. Using diagonal (at 45° angle to direction of grout line) strokes, pack 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 depending on temperature. Drag a clean towel dampened with water, or wipe a clean, dampened sponge, diagonally over the veneer face to remove any grout haze left after “squeegeeing.” Rinse towel/sponge frequently and change rinse water at least every 200 ft2 (2 m2). 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, using a circular motion, to lightly scrub surfaces and dissolve haze/film. Do not use acid cleaners on latex Portland cement mortar grout less than 7 days old.

***NOTE TO SPECIFIER: select one of following and specify color for each type/color of ceramic tile, mosaic, paver, trim unit:***

* 1. ***latex-Portland cement sanded floor grout for joint widths ≥1/16”( 1.5mm ) and ≤3/8” (10mm);***
  2. ***latex-Portland cement unsanded grout for soft glazed tiles and soft/polished stone with joints widths ≤1/8” (3 mm).***

*Use the following LATICRETE****®*** *System Materials:*

***LATICRETE 1500 Series Tri-Poly Fortified Sanded Grout***

***LATICRETE 1600 Series Tri-Poly Fortified Unsanded Grout***

***LATICRETE 1776 Grout Admix Plus***

References:

LATICRETE Data Sheets: [256.0](http://apps.laticrete.com/AG/reference/LDS2560.pdf), [258.0](http://apps.laticrete.com/AG/reference/LDS2580.pdf), [265.0](http://apps.laticrete.com/AG/reference/LDS2650.pdf)

LATICRETE Technical Data Sheets: None

F. ***Isolation Joint:*** Provide an isolation joint at the transition between any change in plane, or between different materials (e.g. wall and tub), to isolate movement of each plane.

* 1. Follow the North American Tile Council's detail "EJ-171 Expansion Joints".
  2. Fill joints with packing material (e.g. closed cell backer rod) as specified in Section (07920).
  3. LATICRETE® Latasil Tile and Stone Sealant (with the appropriate Primer as required)

*Use the following LATICRETE System Materials:*

***LATICRETE Latasil Tile and Stone Sealant***

References:

LATICRETE Data Sheets: [6200.1](file:///Q:\DataSheets\PDF%20Format\LDS6200.1.pdf), [6524.1](file:///Q:\DataSheets\PDF%20Format\LDS6524.1.pdf), [6526.1](file:///Q:\DataSheets\PDF%20Format\LDS6526.1.pdf)

LATICRETE Technical Data Sheets: [211](http://apps.laticrete.com/AG/reference/TDS211.doc)

1. ***Adjusting:*** Correction of defective work for a period of one (1) year following substantial completion, return to job and correct all defective work. Defective work includes, without limitation, tiles broken in normal abuse due to deficiencies in setting bed, loose tiles or grout, and all other defects which may result of poor workmanship.

**3.5 CLEANING**

Clean excess mortar/epoxy from veneer surfaces with water before they harden and as work progresses. Do not contaminate open grout/caulk joints while cleaning. Sponge and wash veneers

diagonally across joints. Do not use acids for cleaning. Polish with clean dry cloth. Remove surplus materials and leave premises broom clean.

**3.6 PROTECTION**

1. Protect finished installation under provisions of §01500 and §01535. Close areas to other trades and traffic until tile being installed has set firmly. Keep traffic off horizontal Portland cement thick bed mortar installations for at least 72 hours at 70 ºF (21ºC)
2. Keep floors installed with epoxy adhesive closed to foot traffic for 24 hours @ 70ºF (21ºC), and to heavy traffic for 48 hours @ 70ºF (21ºC) unless instructed differently by manufacturer. Use kneeling boards, or equivalent, to walk/work on newly tiled floors. Extend period of protection of tile work at lower temperatures, below 60ºF (15ºC), 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.

**PART 4 – HEALTH AND SAFETY**

The use of personal protection such as rubber gloves, suitable dust masks, safety glasses and industrial clothing is highly recommended. Discarded packaging, product wash and waste water should be disposed of as per local, state or federal regulations.

"As a professional courtesy, LATICRETE offers technical services free of charge. The user maintains all responsibility for verifying the applicability and suitability of the technical service or information provided."

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ES-B411 R January 10 2005

**All references are the intellectual property of their respective owners:**

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