

TARRANT COUNTY

SECTION 09300 TILE

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SECTION INCLUDES

- A. Ceramic wall tile and trim units (glazed)
- B. Ceramic floor tile/mosaics and trim units (glazed or unglazed)
- C. Porcelain Tile
- D. Installation Products; adhesives, mortars, grouts and sealants
- E. Thresholds, trim, cementitious backer units and other accessories specified herein

Note to Specifier: Edit for applicable procedures and materials.

1.03 RELATED SECTIONS

- A. Section 01800 – Attic Stock
- B. Section 03505 – Self-Leveling Underlayment
- C. Section 09260 – Gypsum Board Systems
- D. Section 07110 – Membrane Waterproofing

Note to Specifier: Edit for applicable related sections.

1.04 SUBMITTALS

- A. Product Data: Provide material specifications, characteristics and instructions for using adhesives and grouts.
- B. Samples: Submit samples of full color range for tile and grout for material approval and color selection.
- C. Maintenance Instructions: Include recommended cleaning methods, cleaning materials and stain removal methods.
- D. LEED Certification Documentation: Submit documentation from the manufacturer highlighting LEED requirements for materials and products of this Section. Comply with requirements of Section 01352 – LEED Certification Procedures.
 - 1. Credit MRc4 – Recycled Content
 - 2. Credit MRc5 – Regional Materials
 - 3. Credit EQc4.1 – Low Emitting Sealants and Adhesives
- E. Submit Movement Joint Layout for Owner Architect review.

Note to Specifier: Edit for applicable requirements.

1.05 QUALITY ASSURANCE

- A. Tile Manufacturer: "Quality Certified" by Tile Council of America, Inc., to equal or exceed Standard Grade requirements of ANSI Standard A137.1. Deliver tile in sealed cartons bearing TCA certification mark.
- B. Installation System Manufacturer: Company specializing in adhesives, mortars, grouts and other installation materials with ten (10) years minimum experience with ISO 9001 certification. Obtain installation materials from single source manufacturer to insure consistent quality and full compatibility.
- C. Submit laboratory confirmation of adhesives, mortars, grouts and other installation materials:
 - 1. Identify proper usage of specified materials using positive analytical method.
 - 2. Identify compatibility of specified materials using positive analytical method.
 - 3. Identify proper color matching of specified materials using a positive analytical method.
- D. Installer Qualifications: Company specializing in tile work having minimum of five (5) years successful documented experience with work of similar scope, materials and design.
- E. Construction Monitoring: Ceramic tile installation materials manufacturer shall provide a representative for construction monitoring to ensure quality. The Manufacturer's Representative shall monitor the tile installation checking for proper mixing and application of the ceramic tile installation materials. The Manufacturer's Representative shall provide a letter to the Owner stating conformance to recommended procedures. The Contractor shall correct all deficiencies noted by the Manufacturer's Representative before continuing with work.
 - 1. Monitoring Schedule and Duration
 - a. Start of Installation – Minimum of 4 hours
 - b. 50% Complete – Minimum of 2 hours
 - c. 100% Complete – Minimum of 1 hour

1.06 ENVIRONMENTAL CONDITIONS

- A. Materials shall be kept covered and protected from weather and damaging conditions at all times while in transit and after receipt at the site.

1.07 PRODUCT HANDLING

- A. Materials delivered and stored at the site shall be kept in manufacturer's sealed labeled containers. Store materials at the site for at least 48 hours prior to installation in a clean dry location having an ambient temperature no less than 50°F.

1.08 MOCK-UPS

- A. Provide mock-up of each type/style/finish/size/color of tile, trim unit and threshold, along with respective installation adhesives, mortars, grouts and other installation materials.
 - 1. The location shall be selected by the Architect.
 - 2. The tile work shall not commence until the mock-up is approved.
 - 3. Mock-up shall remain until the tile work is complete.
 - 4. The approved mock-up can remain as part of the finished work, if approved. The mock-up area shall be re-constructed if not acceptable.

1.09 WARRANTY

- A. Tile floor system shall carry manufacturer's 25-year floor system warranty from date of Substantial Completion for materials and labor.

PART 2 – PRODUCTS

2.01 TILE MANUFACTURERS

- A. Subject to compliance with 1.05 and performance requirements, provide products by one of the following manufacturers:

Note to Specifier: Provide list of acceptable tile manufacturers.

2.02 WALL TILE MATERIALS

Note to Specifier: Edit for each tile type.

2.03 FLOOR TILE MATERIALS

Notes to Specifier: Edit for each tile type.

2.04 CERAMIC TILE INSTALLATION MATERIALS MANUFACTURER

- A. LATICRETE International, Inc.

2.05 PROPRIETARY SPECIFICATION – TILE INSTALLATION ACCESSORIES

- A. Waterproofing and Crack Isolation Membrane: LATICRETE® Hydro Ban.

2.06 PROPRIETARY SPECIFICATION – TILE INSTALLATION MATERIALS

- A. Latex Portland Cement Thin Bed Mortar: LATICRETE 254 Platinum.
- B. Epoxy Grout: LATICRETE SpectraLOCK® PRO Grout.
- C. Expansion and Control Joint Sealant: LATICRETE Latasil™, color to match grout.

2.07 CLEANING AGENTS

- A. Shall be harmless to all tile and grout.

PART 3 – EXECUTION

3.01 EXAMINATION AND PREPERATION

- A. Carefully examine surfaces scheduled to receive tile and report any discrepancies to the Architect. Start of installation constitutes acceptance of surfaces.

3.02 INSTALLATION – ACCESSORIES

- A. Waterproofing: Install the waterproofing membrane in compliance with current revisions of ANSI A108.1 (2.7 Waterproofing) and ANSI A108.13. Review the installation and plan the application sequence. Shake or stir LATICRETE Hydro Ban™ before using.
 - 1. 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 LATICRETE 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 LATICRETE Hydro Ban approximately 8" wide over substrate cracks, cold joints and control joints using a paint brush or heavy napped paint roller.

2. 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 LATICRETE Hydro Ban applied with a paint brush or trowel may be used to fill in cove joints and floor/wall transitions $\leq 1/8$ " in width. Apply a liberal coat of LATICRETE Hydro Ban approximately 8" wide over substrate cracks, cold joints, and control joints using a paint brush or heavy napped paint roller.
3. Pre-Treat Drains: Drains must be of the clamping ring type, with weepers as per ASME A112.6.3. Apply a liberal coat of LATICRETE Hydro Ban around and over the bottom half of drain clamping ring. Cover with a second liberal coat of LATICRETE Hydro Ban. When the LATICRETE Hydro Ban dries, apply a bead of LATICRETE Latasil™ where the LATICRETE Hydro Ban meets the drain throat. Install the top half of drain clamping ring.
4. Pre-Treat Penetrations: Allow for a minimum 1/8" space between drains, pipes, lights or other penetrations and surrounding tile. Pack any gaps around pipes, lights or other penetrations with a LATICRETE latex-fortified thin-set. Apply a liberal coat of LATICRETE Hydro Ban around penetration opening. Cover the first coat with a second liberal coat of LATICRETE Hydro Ban. Bring LATICRETE Hydro Ban up to level of tile. When LATICRETE Hydro Ban has dried to the touch, seal with LATICRETE Latasil.
5. Main Application: Allow any pre-treated areas to dry to the touch. Apply a liberal coat of LATICRETE 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 LATICRETE Hydro Ban over the first coat. Let the top coat of LATICRETE Hydro Ban dry to the touch approximately 1-2 hours at 70°F and 50% RH. When the top coat has dried to the touch inspect the surface for pinholes, voids, thin spots or other defects. LATICRETE Hydro Ban will dry to an olive green color when fully cured. Use additional LATICRETE Hydro Ban to seal any defects.
6. 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 at 70°F and 50% RH. For temperatures between 45°F and 69°F allow a minimum 24 hour cure period.
7. Floor Testing: Allow membrane to cure fully before flood testing, typically a minimum 2 hours at 70°F and 50% RH. Cold conditions will require a longer curing time. For temperatures between 50°F and 69°F allow a minimum 24 hours cure period prior to flood testing.

3.03 INSTALLATION - TILE

- A. General: Install in accordance with current versions of American National Standards Institute, Inc. (ANSI) "A108 American National Standard Specifications for Installation of Ceramic Tile" and TCNA "Handbook for Ceramic Tile Installation." Cut and fit tile neatly around corners, fittings and obstructions. Lay out tile so that fields or patterns center on architectural features and so that wherever possible, no tile is less than 1/2 full width. Lay tile from center lines of walls and floors in both directions. Plan layout of color patterns before starting installation, refer to drawings for patterns. Chipped, cracked, split pieces and edges are not acceptable. Make joints even, straight, plumb and of uniform width to tolerance +/- 1/16" over 8'. Install divider strips at junction of flooring and dissimilar materials.
- B. Lay tile to provide 1/8" maximum wide joints.
- C. Thin Bed Method: Install latex portland cement mortar 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 tile 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 tile or sheet mounted ceramics/mosaics, spread latex portland cement mortar onto the back of 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 face and joints between pieces.

D. Grouting or Pointing:

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 prior to use to facilitate mixing and application. Substrate temperature must be 40-95°F. 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 tile 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 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 A108.02 (3.13) and ANSI A108.6 (3.0 – 4.0). 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 temperature). Begin by mixing cleaning additive packet with 2 gallons of clean water in a clean bucket to make cleaning solution. Dip a clean sponge into 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 50ft². 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 50ft². 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 surfaces 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 indicated no change in finish appearance; do not use acid cleaners on epoxy grout less than 7 days old.*

E. 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.

1. Substrate joints must carry through, full width, to surface of tile.

2. Install expansion joints in tile work over construction/cold joints or control joints in substrates.
 3. Install expansion joints where tile abut restraining surfaces such as perimeter walls, curbs, columns, changes in plane and corners.
 4. Joint width and spacing depends on application – follow TCNA Detail “EJ-171 Expansion Joints or consult sealant manufacturer for recommendation based on project parameters.
 5. Joint width: $\geq 1/8$ ” and ≤ 1 ”.
 6. Joint width: depth ~2:1 but joint depth must be $\geq 1/8$ ” and $\leq 1/2$ ”.
 7. 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. Install appropriate backing material based on expansion joint design and as specified in Section 07920. Apply masking tape to face of tile. 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 smears or excess sealant off the face of non-glaze tile or other adsorptive surfaces immediately.
- F. Align wall tile and base joints with floor joints.
- G. 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 develop as a result of poor workmanship.

3.04 CLEANING

- A. 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.

3.05 PROTECTION

- A. Protect finished installation under provisions of Sections 01500 and 01535. Close areas to other trades and traffic until tile being installed has set firmly.
- B. Keep floors installed with epoxy adhesive closed to traffic for 24 hours at 70°F and to heavy traffic for 48 hours @ 70°F unless instructed differently by manufacturer. Use kneeling boards or equivalent to walk/work on newly tiled floors. Extend periods of protection of tile work at lower temperatures, below 60°F and at high relative humidity ($\geq 70\%$ RH) due to retarded set times of mortar/adhesives. Replace or restore work of other trades damaged or soiled by work under this section.

----END OF SECTION----