

**QUARTZITEC Quartzstone**  
**Series 2000 & Series 3000**

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**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Scope of work - Provide engineered stone installation systems and accessories as indicated on drawings, as specified herein, and as needed for complete and proper installation.
- B. Related Documents - provisions within General and Supplementary General Conditions of the Contract, Division 1 -General Requirements, and the Drawings apply to this Section.

**1.2 SECTION INCLUDES**

- A. Engineered Stone
- B. **Installation Products; adhesive, mortars, thin fiber reinforced mortar and grouts (Consult with Manufacturer of the Engineered Stone to determine if the materials that the specific type of stone and size of stone can be installed with one of the following types of installation mortars – Standard Setting Liquid Latex Fortified Portland Cement Mortar, Polymer Fortified Portland Cement Mortar, Rapid Setting Liquid Latex Fortified Portland Cement Mortar, or 100% Solids Epoxy Adhesive. Contact Manufacturer of Engineered Stone to determine which materials require the 100% solids epoxy installation system or the Rapid Setting Liquid Latex Fortified Portland Cement Mortar installation system .**
- C. Waterproof membranes for Engineered Stonework
- D. Anti-fracture membranes for Engineered Stonework
- E. Sound control underlayments
- F. Thresholds, trim, cementitious backer units, sealants, and other accessories specified herein.

**NOTE TO SPECIFIER: Edit for applicable procedures & materials**

**1.3 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION**

**NOTE TO SPECIFIER: Edit for applicable products**

**1.4 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION**

**NOTE TO SPECIFIER: Edit for applicable products**

**1.5 RELATED SECTIONS**

- A. Section 03300 Cast-in-Place Concrete (monolithic slab finishing for Engineered Stone/ Metal Tile)
- B. Section 03305 Concrete Curing
- C. Section 03410 Structural Precast Concrete
- D. Section 03532 Concrete Floor Topping
- E. Section 04200 Unit Masonry (CMU wall substrates)
- F. Section 04300 Stone
- G. Section 06100 Rough Carpentry (plywood subfloors)
- H. Section 07110 Membrane Waterproofing
- I. Section 07920 Elastomeric Joint Sealants
- J. Section 09250 Gypsum Board Assemblies
- K. Section 09385 Stone Tile
- L. Section 10800 Washroom Accessories
- M. Section 15440 Plumbing Fixtures

**NOTE TO SPECIFIER: Above are examples of typical broadscope and narrowscope sections related to ceramic tile installation. Edit for applicable related sections**

**1.6 ALLOWANCES**

**NOTE TO SPECIFIER: Edit for detail of applicable ALLOWANCES ; coordinate with Section 01020 Allowances. Allowances in the form of unit pricing are sometimes used when the scope of the stone work, at time of bid, is undetermined.**

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**1.7 ALTERNATES**

**NOTE TO SPECIFIER:** *edit for applicable ALTERNATES. Alternates may be used to evaluate varying levels of performance of setting systems or to assist in the selection of the tile by economy.*

**1.8 REFERENCE STANDARDS**

- A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI-current edition)
- B. TILE COUNCIL OF AMERICA (TCA-current edition)
- C. AMERICAN SOCIETY for TESTING & MATERIALS (ASTM - current edition)
- D. EUROPEAN STANDARD (EN current – edition)

**NOTE TO SPECIFIER:** *edit for additional applicable ANSI and ASTM references*

**1.9 SYSTEM DESCRIPTION**

- A. Engineered Stone, installed using Liquid Latex Fortified Portland Cement Thin-Set Mortars, Polymer Fortified Portland Cement Thin-Set Mortars, Rapid Setting Liquid Latex Fortified Portland Cement Mortars, or 100% Solids Epoxy Adhesives, with latex Portland cement grout joints or epoxy grout joints.

**NOTE TO SPECIFIER:** *The above systems are example descriptions; edit for additional applicable systems*

**1.10 SUBMITTALS**

- A. Submit shop drawings and manufacturers' product data under provisions of Section (01300.) (01340.)
- B. Submit samples of each type/style/finish/size/color of Engineered Stone, paver, trim unit or threshold under provisions of Section (01300.) (01340.)
- C. Submit manufacturers' installation instructions under provisions of Section (01300.) (01340.)
- D. Submit manufacturer's certification under provisions of Section (01405 ) that the materials supplied conform to ANSI 137.1.
- E. Submit proof of warranty.
- F. Submit sample of installation system demonstrating compatibility/functional relationships between adhesives, mortars, grouts and other components under provision of Section (01300.) (01340.)
- G. Submit list from manufacturer of installation system/adhesive/mortar/grout identifying a minimum of three (3) similar projects, each with a minimum of ten (10) years service.
- H. For alternate materials, submit independent laboratory test results confirming compliance with specifications listed in Part 2 - Products at least thirty (30) days before bid date.

**1.11 QUALITY ASSURANCE**

- A. Engineered Stone Manufacturer (Single source responsibility): Company specializing in Engineered Stone, pavers, trim units, and thresholds with (three) (3) years minimum experience. Obtain Engineered Stone from a single source with resources to provide products of consistent quality in appearance and physical properties.
- B. Installation System Manufacturer (single source responsibility): Company specializing in installation systems/adhesives/mortars/grouts with ten (10) years minimum experience (and ISO 9001 certification) Obtain products from single source manufacturer to insure consistent quality and compatibility.
- C. Submit laboratory confirmation of installation systems/adhesives/mortars/grouts:
  - 1. Identify proper usage of specified materials using positive analytical method.
  - 2. Identify proper color matching of specified materials using a positive analytical method.
- D. Installer qualifications: company specializing in installation of Engineered Stone, mosaics, pavers, trim units and thresholds with (5) years documented experience with installations of similar scope, materials and design.

**1.12 MOCK-UPS**

- A. Provide mock-up of each type/style/finish/size/color of Engineered Stone, pavers, trim unit and threshold, along with respective installation system/adhesive/mortar/grout, under provisions of Section (01400) (01405).

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**1.13 PRE-INSTALLATION CONFERENCE**

Pre-installation conference: At least three weeks prior to commencing the work attend a meeting at the jobsite to discuss conformance with requirements of specification and job site conditions. Representatives of owner, architect, general contractor, tile subcontractor, Installation System Manufacturer, and other parties who are involved in the scope of this installation must attend the meeting

**1.14 DELIVERY, STORAGE AND HANDLING**

- A. Acceptance at Site: deliver and store packaged materials in original containers with seals unbroken and labels, including grade seal, intact until time of use, in accordance with manufacturer's instructions.
- B. Store Engineered Stone and installation system materials in a dry location; handle in a manner to prevent chipping, breakage, and contamination.
- C. Protect latex additives and epoxy adhesives from freezing or overheating in accordance with manufacturer's instructions; store at room temperature when possible.
- D. Store Portland cement mortars and grouts in a dry location.

**1.15 PROJECT/SITE CONDITIONS**

- A. Provide ventilation and protection of environment as recommended by manufacturer.
- B. Prevent carbon dioxide damage to installation mortars, adhesives, grouts, and Engineered Stone by venting temporary heaters to the exterior.
- C. Maintain ambient temperatures not less than 50 F (10 C) or more than 100 F (38 C) during installation and for a minimum of seven (7) days after completion. Setting of Portland cement is retarded by low temperatures. Protect work for extended period of time and from damage by other trades. Installation with Latex Portland cement mortars requires substrate, ambient and material temperatures at least 37° F/3° C. There should be no ice in slab. Freezing after installation will not damage Latex Portland cement mortars. Protect Portland cement based mortars and grouts from direct sunlight, radiant heat, forced ventilation (heat & cold), and drafts until cured to prevent premature evaporation of moisture. Epoxy mortars and grouts require surface temperatures between 60°F/16°C and 90°F/32°C at time of installation. **It is the General Contractor's responsibility to maintain temperature control.**

**1.16 SEQUENCING AND SCHEDULING**

- A. Coordinate installation of engineered stonework with related work.
- B. Proceed with engineered stonework only after curbs, vents, drains, piping, and other projections through substrate have been installed and when substrate construction and framing of openings have been completed.

**NOTES FOR SPECIFIER:** *Edit for project specific sequence and scheduling*

**1.17 WARRANTY**

The Contractor warrants the work of this Section to be in accordance with the Contract Documents and free from faults and defects in materials and workmanship for a period of 10 years. The manufacturer of installation systems, adhesives, grouts and mortars shall provide a written ten-(10) year warranty, which covers materials and labor. Reference LATICRETE Warranty Data Sheet 230.12 for complete details.

**1.18 MAINTENANCE**

Submit maintenance data under provisions of Section 01730. Include cleaning methods, cleaning solutions recommended, stain removal methods, and polishes and waxes recommended.

**1.19 EXTRA MATERIALS STOCK**

Upon completion of the work of this Section, deliver to the Owner 2% minimum additional stone and trim shape of each type, color, pattern and size used in the work, as well as extra stock of installation mortar, grouts, adhesives and accessories for the Owner's use in replacement and maintenance. Extra stock must be from same production run or batch as original engineered stone and installation materials.

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**PART 2 - PRODUCTS**

**2.1 ENGINEERED STONE MANUFACTURERS**

Subject to compliance with paragraphs 1.12 and performance requirements, provide products by one of the following manufacturers: **QUARTZITEC; 15 Turner Court; Sussex, New Brunswick; Canada E4E 2S1; Toll Free: (877) 255-9600; Fax: (506) 433-9610**

*NOTE TO SPECIFIER: Provide list of acceptable tile manufacturers.*

**2.2 WALL TILE MATERIALS [NOTE TO SPECIFIER: edit for each tile type]**

- A. Stone or Tile
- B. Grade:
- C. Size:
- D. Edge
- E. Finish:
- F. Color
- G. Special shapes
- H. Location:

**2.3 FLOOR TILE MATERIALS [NOTE TO SPECIFIER: edit for each tile type]**

- A. Stone or Tile
- B. Grade:
- C. Size:
- D. Edge
- E. Finish:
- F. Color
- G. Special shapes
- H. Location:

**2.4 MORTAR, GROUT AND ADHESIVE MANUFACTURER**

- A. Mortar, grout, adhesive supplied by **LATICRETE International, Inc., 1 LATICRETE Park North; Bethany, CT 06524-3423; Toll Free (800) 243-4788; Phone: (203) 393-0010; Fax: (203) 393-1948; [support@laticrete.com](mailto:support@laticrete.com) ; [www.laticrete.com](http://www.laticrete.com) .**

*NOTE TO SPECIFIER: Use either the following performance specification or the proprietary specification.*

**2.5 MATERIAL PERFORMANCE SPECIFICATIONS**

- A. Latex Portland Cement Mortar for Thick Bed Mortars, Screeds and Leveling Beds to be weather, frost, shock resistant meeting the following physical requirements:
  - 1. Compressive strength: Thick bed, Screeds & Leveling mortars 5000 psi (34.5 MPa) Min. (ANSI A118.4)
  - 2. Water absorption: 5% Max. (ANSI A118.6)
  - 3. Smoke & Flame contribution factors: 0 (ASTM E84 – Modified)
- B. Latex Portland Cement Thin Bed Adhesive Mortar or Multipurpose Thin Set Mortar to be weather, frost, shock resistant meeting the following physical requirements:
  - 1. Compressive strength: 5000 psi (34.5 MPa) Min. (ANSI A118.4)
  - 2. Bond strength: 500 psi (3.5MPa) Min. (ANSI A118.4)
  - 3. Water absorption: 4% Max. (ANSI A118.6)
  - 4. Smoke & Flame contribution factors: 0 (ASTM E84 – Modified)
- C. Latex Portland Cement Grouting Mortar to be weather, frost, shock resistant meeting the following physical requirements:
  - 1. Compressive strength: 3500 psi (24 MPa) Min. (ANSI A118.6)
  - 2. Water absorption: 5% Max. (ANSI A118.6 – Modified)
  - 3. Smoke & Flame contribution factors: 0 (ASTM E84 – Modified)

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- D. Epoxy Adhesive to be stainproof, chemical resistant 100% solids epoxy with high temperature resistance and meeting the following minimum physical requirements:
1. Compressive strength: 4500 psi (31 MPa) Min. (ANSI A118.3)
  2. Shear Bond Strength: 1000psi (6.9MPa) Min. (ANSI A118.3)
  3. Water Absorption: 1/2% Max. (ANSI A118.3)
  4. Service Temperature: up to 230°F (110C°)
  5. Cured Epoxy Adhesive to be chemically and stain resistant to ketchup, mustard, tea, coffee, milk, soda, beer, wine, bleach (5% solution), ammonia, juices, vegetable oil, detergents, brine, sugar, cosmetics, and blood and chemically resistant to dilute acids and alkalis, gasoline, turpentine, and mineral spirits.
- E. Epoxy Grout (residential) shall be non-toxic, non-flammable, non-hazardous during storage, mixing, application and when cured and shall meet the following minimum physical requirements:
1. Compressive Strength 6600 psi (464 kg/cm<sup>2</sup>) min. (ANSI A118.3)
  2. Shear Bond Strength 100 psi (70kg/cm<sup>2</sup>) min. (ANSI A118.3)
  3. Water Absorption 1/2% max. (ANSI A118.3)
  4. Service Temperature up to 230°F (110°C)
  5. The finished Epoxy Adhesive or grout to be chemically and stain resistant to ketchup, mustard, tea, coffee, milk, soda, beer, wine, bleach (5% solution), ammonia, juices, vegetable oil, brine, sugar, cosmetics, and blood and chemically resistant to dilute acids and alkalis, gasoline, turpentine, and mineral spirits.
- F. Sound Control/Acoustical Underlayment to be load bearing, shock and vibration resistant and meeting following physical requirements:
1. Compressive Strength 600lbs./in.<sup>2</sup> (42.2kg/cm<sup>2</sup>) (ASTM C109 Modified)
  2. Point Loading Strength 5000lbs./in.<sup>2</sup> (351.6kg/cm<sup>2</sup>) (LIL – 1007-81)
  3. Installed Weight (dry)(at 1/2" thickness) <3lbs./ft<sup>2</sup> (14.7kg/m<sup>2</sup>) (ASTM C905 Modified)
  4. Fire Rating Non-Combustible (ASTM E84 Modified)
  5. Complete Floor/Ceiling Assembly to meet the following requirements with no suspended ceiling:
    - a. Sound Transmission Class (STC) ≥52 (ASTM E413-73)
    - b. Impact Insulation Class (IIC) ≥51 (ASTM E492-73)
    - c. Impact Noise Rating (INR) ≥0 (FHA 750/HUD TS28)
  6. Submit manufacturer's documentation from an independent testing laboratory verifying compliance with this specification when installed on a 4" (100mm) concrete slab. Manufacturer to be regularly engaged in production of these materials for minimum 10 years and demonstrate three (3) similar installations of minimum of five (5) years successful service.

## 2.6 INSTALLATION SYSTEM ACCESSORIES PERFORMANCE SPECIFICATIONS

- A. Waterproofing membrane to be thin, cold applied, single component liquid, load bearing and non-toxic. It shall be certified by IAPMO as a shower pan liner. Reinforcing fabric to be non-woven rot-proof specifically intended for waterproof membrane. Materials to be non-toxic, non-flammable, and non-hazardous during storage, mixing, application and when cured. Equal to LATICRETE 9235 Waterproof Membrane manufactured by LATICRETE International, Inc. and meeting following physical requirements:
1. Water Permeability(at 30ft.hydro/0.9 atmos/91.2kPa) Nil (Fed. Spec. TT-C-00555 Modified)
  2. Elongation at break 20-30% (ASTM D751)
  3. Service Temperatures -20°to+280°F(-28°to +137°C) (LIL 1016-92)
  4. Tensile breaking strength 2950psi (20.4MPa;207kg/cm<sup>2</sup>) (ASTM D751)
  5. Thickness 20 mils (0.5mm) (LIL 1013-92)
  6. Bond strength 250 PSI (1.72 MPa) (ANSI A118.4)
  7. Service Rating ( TCA) Extra Heavy
- B. Reinforcing Mesh: 2 inch x 2 inch (50 x 50 mm) x 16 ASW gage or .0625 inch (1.5mm) diameter galvanized steel welded wire mesh complying with ASTM A185 and ASTM A82 except for minimum wire size.
- C. Cleavage membrane: 15 pound asphalt saturated, non-perforated roofing felt ASTM D226, or 4.0 mils /0.1 mm thick polyethylene plastic film ASTM D4397
- D. Joint Sealant: as specified in Section 07920.
- E. Cementitious backerboard units: size and thickness as specified, comply with ANSI A118.9

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- F. Thresholds: Provide marble saddles complying with ASTM C503 requirements for exterior use and abrasion resistance in compliance with ASTM C241 in color, size, shape and thickness as indicated on drawings.

**NOTE TO SPECIFIER:** *Edit / add applicable accessory products.*

**2.8 MORTAR, GROUT, ADHESIVE & ACCESSORY FOR OPTIONAL PROPRIETARY PRODUCT SPECIFICATION**

- A. Installation system components as manufactured by LATICRETE International, Inc. Bethany, CT 06524 USA. Phone 800-243-4788
- B. Latex-Portland cement leveling bed/scratch and render coat mortar: LATICRETE 226 Thick Bed Mortar gauged with LATICRETE 3701 Mortar Admix as manufactured by LATICRETE International, Inc.
- C. Latex-Portland Cement Thick Bed Mortar: LATICRETE 226 Thick Bed Mortar gauged with LATICRETE 3701 Mortar Admix as manufactured by LATICRETE International, Inc.
- D. Sound Control/Acoustical Underlayment: LATICRETE 18 Sound Control Underlayment (Standard or Plus Configuration); as manufactured by LATICRETE International, Inc.
- E. Waterproof Membrane- Liquid Applied: LATICRETE 9235 Waterproof Membrane or LATAPOXY 24hr Hydroproofing Membrane; as manufactured by LATICRETE International, Inc.
- F. Crack Suppression and Anti-Fracture Membrane: LATICRETE Blue 92 Anti-Fracture Membrane; as manufactured by LATICRETE International, Inc.
- G. Chemical resistant, water cleanable, tile setting epoxy adhesive: LATAPOXY 300 Epoxy Adhesive as manufactured by LATICRETE International, Inc.
- H. Latex-Portland Cement Mortar: LATICRETE 254 Pt Platinum Multipurpose Thin Set as manufactured by LATICRETE International, Inc.
- I. Latex-Portland Cement Mortar: LATICRETE 211 Crete Filler Powder gauged with LATICRETE 4237 Latex Thin Set Mortar Additive as manufactured by LATICRETE International, Inc.
- J. Latex-Portland Cement Mortar: LATICRETE 317 Floor 'N Wall Thin Set Mortar gauged with LATICRETE 333 Super Flexible Additive as manufactured by LATICRETE International, Inc.
- K. Rapid Setting Liquid Latex Fortified Portland Cement Mortar: LATICRETE 317 Floor N' Wall Thin-Set Mortar mixed with LATICRETE 101 Rapid Set Latex Admix as manufactured by LATICRETE International, Inc.
- L. Chemical resistant, water cleanable grouting epoxy: LATICRETE SpectraLock Grout or LATAPOXY SP-100 Stainless Epoxy Grout for Floors n' Walls as manufactured by LATICRETE International, Inc.
- M. Polymer Modified Tile Grouts for Tile Installation: LATICRETE Tri-Poly Fortified Sanded Grout (1500 Series) or LATICRETE Tri-Poly Fortified Unsanded Grout (1600 Series) gauged with LATICRETE 1776 Admix Plus, as manufactured by LATICRETE International, Inc.
- N. LATICRETE Silicone Sealant: Latasil Tile and Stone Sealant as manufactured by LATICRETE International, Inc.

**PART 3 - EXECUTION**

**3.1 SUBSTRATE EXAMINATION**

- A. Verify that floor or wall surfaces to be covered with waterproofing, engineered stone, mosaics, pavers, trim units or thresholds are:
1. Sound and conform to good design/engineering practices; rigid, with maximum deflection of L/480 distributed uniformly over the span
  2. Concrete cured a minimum of 28 days at 70 degrees F/20 degrees C with a saturated surface dry (SSD) condition, including an initial (7) day period of wet curing. NOTE: Latex Portland Cement Mortars do not require a minimum cure time for concrete slabs or mortar beds
  3. Concrete wood float finished, or better, if the installation is to be done by the thin bed method over concrete, light steel trowel finished
  4. Clean and free of dirt, oil, grease, sealers, curing compounds, form oil or loose plaster, paint, and scale.
  5. Level and true to within:
    - a. Walls: 1/8in./3mm in 8ft./2.5m;
    - b. Floors: 1/8in./3mm in 10ft./3.0m (mortars, epoxies) for thin bed applications directly over substrate or thin, load bearing waterproof membrane; not leveled with gypsum or asphalt based compounds; pitched to drains where required.

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6. Advise General Contractor and Architect of any surface or substrate conditions requiring correction before engineered stonework commences. Beginning of work constitutes acceptance of substrate or surface conditions.

**3.2 SURFACE PREPARATION**

- A. Prepare EXISTING FLOORING SURFACES including terrazzo, ceramic tiles, pavers, quarry tiles, vinyl, vinyl composition floor coverings (other than cushion vinyl) to be sound, solid, well bonded, stripped clean and free from dust, wax, grease, sealer and all other contamination which may reduce or prevent adhesion.
- B. CONCRETE SUBSTRATES
- C. PLYWOOD SUBSTRATES
- D. GYPSUM SUBSTRATE

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

**3.3 INSTALLATION - ACCESSORIES**

- A. CRACK SUPPRESSION – See Manufacturer’s Written Installation Instructions
- B. WATERPROOFING - See Manufacturer’s Written Installation Instructions
- C. ACCOUSTICAL UNDERLAYMENT - See Manufacturer’s Written Installation Instructions

**3.4 INSTALLATION – ENGINEERED STONE**

- A. General: Install in accordance with ANSI A108 Standard for Ceramic Tile installation and TCA Handbook. Cut and fit tiles neatly around corners, fittings, and obstructions. Perimeter tile to be minimum half tile. Chipped, cracked, and split tile and edges, not acceptable. Make joints even, straight, plumb and of uniform width to tolerance +/- 1/16" (1.5mm) over 8ft. (2400mm). Install divider strips at junction of flooring and dissimilar materials.
- B. Thin Bed Method: Apply mortar/adhesive with notched trowel to work installation materials into good contact with engineered stone substrate. Select trowel notch size per tile selected. Spread only as much mortar/adhesive as can be covered in 20-30 minutes or while mortar/adhesive surface is still wet and tacky; When installing large stone, rib/button/lug back stone, or sheet mounted engineered stone, mosaics, spread (back-butter) mortar/adhesive onto back of each engineered stone/sheet in addition to troweling materials over engineered stone substrate. Beat each piece/sheet into mortar/adhesive with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess mortar/adhesive from tile surface. Thin-bed adhesive shall be one of the following systems:  
**LATICRETE® 211 Crete Filler Powder** mixed with **LATICRETE 4237 Latex Thin-Set Mortar Additive** or,  
**LATICRETE 317 Floor N’ Wall Thin-Set Mortar** mixed with **LATICRETE 333 Super Flexible Additive** or,  
**LATICRETE 317 Floor N’ Wall Thin-Set Mortar** mixed with **LATICRETE 101 Rapid Set Latex Admix** or,  
**LATICRETE 254 Platinum Multipurpose Thin-Set Mortar** or,  
**LATAPOXY® 300 Epoxy Adhesive**
- C. Thick Bed Method (Vertical Surfaces, Prefloat Method): Trowel weather resistant, latex-Portland cement scratch/plumb coat mortar over wire lath, concrete or masonry; Float surface of scratch coat plumb/true and set until firm.
- D. Thick Bed Method (Horizontal Surfaces; Over Cleavage Membrane):
1. Verify that allowance for minimum bed thickness of 2 in/50 mm has been made;
  2. Install cleavage membrane complying with ANSI A108.1 (A-2Materials, A-4.1.5.3);
  3. Place mortar bed to a depth approximately one-half (1/2) finished bed thickness; Lay 2 x 2 in/50 x 50 mm, 16 x 16 ga.(1.5mm), galvanized, welded reinforcing wire fabric complying with ANSI A108.1(A-2 Materials, A4.1.5.3) and ASTM A 185 over mortar; Place additional latex-Portland cement thick bed mortar over wire fabric and compact mortar by tamping with flat trowel; Screed mortar bed level and provide correct slopes to drains; Spread latex-Portland cement mortar with flat trowel over surface of "green"/fresh mortar bed as a slurry bond coat approximately 1/16in./1.5 mm thick; Apply slurry bond coat to back of engineered stone, metal tile, mosaic, paver, trim unit or threshold and place each piece/sheet while slurry bond coats are wet and tacky; Beat with a hardwood block or rubber mallet to level/imbed tilework before mortar bed takes initial set; Clean excess mortar/adhesive from tile surfaces.

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- E. Thick Bed Mortar (Horizontal Surfaces; Directly Bonded):
1. Verify 1 in./25 mm nominal bed thickness has been allowed;
  2. Apply latex-Portland cement mortar with flat trowel as a slurry bond coat approximately 1/16in./1.5mm thick over clean concrete slab or load bearing LATICRETE waterproof membrane; Place latex-Portland cement thick bed mortar over slurry bond coat while bond is wet and tacky; Omit reinforcing wire fabric and fully compact bed by tamping.
- F. Grout/Pointing Joints: Verify grout joints are free of dirt, debris or tile spacers; follow manufacturer recommendations for minimum cure time prior to grouting. 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, or trim units that are not hot paraffin coated to facilitate cleaning;. Pack joints full and free of voids/pits with rubber grouting float; "Squeegee" excess grout from tile faces using edge of rubber float and diagonal strokes (at 45° angle to direction of joints); Cleaning Portland cement grouts - Pull/drag towel or sponge diagonally across tile faces/joints to remove remaining grout film and allow tile work to dry. Hardened grout film or haze should be removed within 24 hours. Cleaning epoxy grouts - follow manufacturers specific guidelines for cleaning epoxy grout installations. Epoxy film or haze must be removed within 24 hours with a detergent wash; do not use acid cleaners on epoxy grout less than 7 days old.

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

1. chemical resistant, water cleanable grouting epoxy as per Paragraph 2.5 E or 2.8 L (for interior installation of virtually any type of tile, with grout joints 1/16in./1.5mm wide and larger);
2. latex-Portland cement sanded floor grout as per paragraph 2.8 M for joint widths 1/8 in./3 mm to 1/2in./12mm);
3. latex-Portland cement un-sanded grout as per Paragraph 2.8 M (for interior installations with joints widths 1/8 in./3 mm or less;

**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, brick or stone.
2. Install expansion joints in tile, brick or stone work over construction/cold joints or control joints in substrates.
3. Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
4. Joint width and spacing depends on application - follow TCA "**Handbook for Ceramic Tile Installation**" Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
5. Joint width:  $\geq \frac{1}{8}$ " (3mm) and  $\leq 1$ " (25mm).
6. Joint width:depth ~2:1 but joint depth must be  $\geq \frac{1}{8}$ " (3mm) and  $\leq \frac{1}{2}$ " (13mm).
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 Latacil 9102 Stone Primer for sandstone and limestone installations. Use LATICRETE Latacil 9118 Swimming Pool Primer for underwater or permanent wet area applications. Install appropriate Backing Material (e.g. closed cell backer rod) based on expansion joint design and as specified in § 07920. Apply masking tape to face of tile, brick or stone veneer. Use a 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-glazed tile, brick, stone or other absorptive surfaces immediately.

Use the following LATICRETE System Materials:

**LATICRETE Latacil Tile & Stone Sealant**

**LATICRETE Latacil 9102 Stone Primer**

**LATICRETE Latacil 9118 Swimming Pool Primer**

References:

Applicable Standard: current revision of ASTM C920

LATICRETE Detail Drawings: 3010, 3011 (Sealant treatments only)

LATICRETE Data Sheets: 6200.1, 6524.1, 6526.1

LATICRETE Technical Data Sheets: none

**QUARTZITEC Quartzstone  
Series 2000 & Series 3000**

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**NOTE TO SPECIFIER:** *Optimum ratio of joint layout, length to width, is 1:1, and not greater than 2:1. Consult sealant or premanufactured joint system manufacturer for recommendation of expansion joint based on project tile.*

- G. ADJUSTING: Correction of defective work for a period of (1) year(s) following substantial completion, return to job and correct all defective work. Defective work includes, without limitation, stones broken in normal abuse due to deficiencies in setting bed, loose stones or grout, and all other defects which may develop as a result of poor workmanship or defective materials.

**3.5 CLEANING**

- A. Clean excess mortar from surface with water as work progresses. Perform cleaning while mortar is fresh and before it hardens on surfaces. Take care to not contaminate joints while cleaning prior to grouting. Sponge and wash stone diagonally across joints. Polish with clean dry cloth. Remove grout haze following recommendation of mortar additive and epoxy manufacturer. Do not use acids for cleaning. Upon completion, remove all surplus materials and leave premises broom clean.

**3.6 PROTECTION**

- A. Protect finished installation under provisions of Section (01500.) (01535.) Close areas to other trades and traffic until stone being installed has set firmly. Keep traffic off horizontal Portland cement thick bed mortar installations for at least 72 hours at 70°F/21°C.
- B. Keep floors installed with epoxy adhesive closed to traffic for 24 hrs. at 70°F/21°C, and to heavy traffic for 48 hours at 70°F/21°C, unless instructed differently by manufacturer. Use kneeling boards, or equivalent, to walk/work on newly tiled floors. Cure stonework in swimming pools, fountains and other continuous immersion applications for 7-10 days at 70°F/21°C before flood testing or filling installation with water. Extend period of protection of stonework 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.

**END OF SECTION 09310**

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