**PART 1 – GENERAL**

NOTE TO SPECIFIER: This specification applies to installations of traditional thickness ceramic and porcelain tiles on interior, and exterior, floor and walls. For all installations of large, thin porcelain tiles, refer to ‘LATICRETE Guide Specification – Large, Thin Porcelain Tiles.’

**1.1 SUMMARY**

1. Scope of work - Provide ceramic tile, tile installation materials and accessories as indicated on drawings, as specified herein, and as needed for complete and proper installation.
2. 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**

NOTE TO SPECIFIER: Edit for applicable procedures & materials

1. Ceramic wall tile and trim units (glazed)
2. Ceramic floor tile/mosaics and trim units (glazed or unglazed)
3. Ceramic tile pavers and trim units (glazed or unglazed)
4. Quarry tile pavers and trim units (glazed or unglazed)
5. Porcelain tile
6. Glass tile (including mosaics)
7. Special purpose tile
8. Decorative thin wall tile
9. Installation Products; adhesives, mortars, grouts and sealants
10. Waterproofing membranes for Ceramic tile work
11. Anti-fracture membranes for Ceramic tile work
12. Uncoupling Membranes for Ceramic tile work
13. Sound control underlayments
14. Thresholds, trim, cementitious backer units and other accessories specified herein.

**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 ENVIRONMENTAL PERFORMANCE REQUIREMENTS**

A. Environmental Performance Criteria: The following criteria are required for products included in this section.

 Refer to Division 1 for additional requirements:

 1. Products manufactured regionally within a 100 mile radius of the Project site;

 2. Adhesive products must meet or exceed the VOC limits of South Coast Air Quality

 Management District Rule (SCAQMD) #1168 and Bay Area Air Quality Management District (BAAQMD)

 Reg. 8, Rule 51.

**1.6 RELATED SECTIONS**

NOTE TO SPECIFIER: Below are examples of typical broad scope and narrow scope sections related to Ceramic tile installation. Edit for applicable related sections

1. Section 03 30 00 Cast-in-Place Concrete
2. Section 03 39 00 Concrete Curing
3. Section 03 41 00 Precast Structural Concrete
4. Section 03 53 00 Concrete Topping
5. Section 04 20 00 Unit Masonry (CMU wall substrates)
6. Section 04 43 00 Stone Masonry
7. Section 06 10 00 Rough Carpentry (plywood sub-floors)
8. Section 07 13 00 Sheet Waterproofing
9. Section 07 14 00 Fluid Applied Waterproofing
10. Section 07 50 00 Membrane Roofing
11. Section 07 92 00 Joint Sealants
12. Section 09 28 00 Backing Boards and Underlayments
13. Section 09 29 00 Gypsum Board
14. Section 10 28 00 Toilet, Bath, and Laundry Accessories

**1.7 ALLOWANCES**

NOTE TO SPECIFIER: Edit for detail of applicable ALLOWANCES; coordinate with Section 01 21 00 Allowances. Allowances in the form of unit pricing are sometimes used when the scope of the tile work at time of bid is undetermined.

**1.8 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.

**1.9 REFERENCE STANDARDS**

NOTE TO SPECIFIER: edit for applicable reference standards

1. American Iron and Steel Institute (AISI) Specification for the Design of Cold-Formed Steel Structural Members
2. American National Standards Institute (ANSI) A137.1 American National Standard Specifications For Ceramic Tile
3. American National Standards Institute (ANSI) A137.2 American National Standard Specifications For Glass Tile
4. American National Standards Institute (ANSI) A108.01 - A108.17 American National Standard Specifications For The Installation Of Ceramic Tile
5. American National Standards Institute (ANSI) A118.1 - A118.15 American National Standard Specifications For The Installation Of Ceramic Tile
6. American National Standards Institute (ANSI) A136.1 American National Standard Specifications For The Installation Of Ceramic Tile
7. American Plywood Association (APA) Y510T Plywood Design Specifications
8. American Society For Testing And Materials (ASTM) A82 Standard Specification for Steel Wire, Plain, for Concrete Reinforcement
9. American Society For Testing And Materials (ASTM) A185 Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
10. American Society For Testing And Materials (ASTM) C33 Standard Specification for Concrete Aggregate
11. American Society For Testing And Materials (ASTM) C36 Standard Specification for Gypsum Wallboard
12. American Society For Testing And Materials (ASTM) C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens)
13. American Society For Testing And Materials (ASTM) C144 Standard Specification for Aggregate for Masonry Mortar
14. American Society For Testing And Materials (ASTM) C150 Standard Specification for Portland Cement
15. American Society For Testing And Materials (ASTM) C171 Standard Specification for Sheet Materials for Curing Concrete
16. American Society For Testing And Materials (ASTM) C241 Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic
17. American Society For Testing And Materials (ASTM) C267 Standard Test Method for Chemical Resistance of Mortars, Grouts, and Monolithic Surfacings
18. American Society For Testing And Materials (ASTM) C482 Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement
19. American Society For Testing And Materials (ASTM) C503 Standard Specification for Marble Dimension Stone (Exterior)
20. American Society For Testing And Materials (ASTM) C531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings and Polymer Concretes
21. American Society For Testing And Materials (ASTM) C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
22. American Society For Testing And Materials (ASTM) C794 Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
23. American Society For Testing And Materials (ASTM) C847 Standard Specification for Metal Lath
24. American Society For Testing And Materials (ASTM) C905 Standard Test Method for Apparent Density of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacings
25. American Society For Testing And Materials (ASTM) C920 Standard Specification for Elastomeric Joint Sealants
26. American Society For Testing And Materials (ASTM) C955 Standard Specification for Load Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Board and Metal Plaster Bases
27. American Society For Testing And Materials (ASTM) D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing And Waterproofing
28. American Society For Testing And Materials (ASTM) D227 Standard Specification for Coal-Tar Saturated Organic Felt Used in Roofing and Waterproofing
29. American Society For Testing And Materials (ASTM) D751 Standard Test Method for Coated Fabrics
30. American Society For Testing And Materials (ASTM) D751 Standard Test Method for Rubber Property - Durometer Hardness
31. American Society For Testing And Materials (ASTM) D1248 Standard Test Method for Staining of Porous Substances by Joint Sealants
32. American Society For Testing And Materials (ASTM) D2240 Standard Test Method for Coated Fabrics
33. American Society For Testing And Materials (ASTM) D4263Standard Test Method for Indicating Moisture in Concrete by The Plastic Sheet Method
34. American Society For Testing And Materials (ASTM) D4397Standard Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications
35. American Society For Testing And Materials (ASTM) D4716Standard Test Method for Determining the (In Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geo-synthetic Using a Constant Head
36. American Society For Testing And Materials (ASTM) E84 Standard Test Method for Surface Burning Characteristics of Building Materials
37. American Society For Testing And Materials (ASTM) E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions
38. American Society For Testing And Materials (ASTM) E96 Standard Test Methods for Water Vapor Transmission of Materials
39. American Society For Testing And Materials (ASTM) E413 Standard Classification for Rating Sound Insulation
40. American Society For Testing And Materials (ASTM) E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
41. American Society For Testing And Materials (ASTM) E989 Standard Classification for Determination of Impact Insulation Class (IIC)
42. American Society For Testing And Materials (ASTM) E1155 Standard Test Method for Determining FFFloor Flatness and FL Floor Levelness
43. American Society For Testing and Materials (ASTM) F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
44. American Society For Testing and Materials (ASTM) 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using in situ Probes
45. American Society For Testing and Materials (ASTM) 2420 Standard Test Method for Determining Relative Humidity on the Surface of Concrete Floors Slabs using Relative Humidity Probe Measurement and Insulated Hood
46. American Society of Mechanical Engineers (ASME) - ASME A112.6.3 Floor and Trench Drains
47. Canadian Sheet Steel Building Institute (CSSBI) Lightweight Steel Framing Binder {Publication 52M}
48. Federal Housing Administration (FHA) Bulletin No. 750 Impact Noise Control in Multifamily Dwellings
49. Housing and Urban Development (HUD) TS 28 A Guide to Airborne, Impact and Structure-borne Noise-Control in Multifamily Dwellings
50. International Organization for Standardization (ISO) 13007 Standards for Grouts and Adhesives
51. Materials And Methods Standards Association (MMSA) Bulletins 1-16
52. Metal Lath/Steel Framing Association (ML/SFA) 540 Lightweight Steel Framing Systems Manual
53. Steel Stud Manufacturers Association (SSMA) Product Technical Information and ICBO Evaluation Service, Inc. Report ER-4943P
54. Terrazzo, Tile And Marble Association Of Canada (TTMAC) Specification Guide 09300 Tile Installation Manual
55. Tile Council Of North America (TCNA) Handbook For Ceramic, Glass, and Stone Tile Installation

**1.10 SYSTEM DESCRIPTION**

NOTE TO SPECIFIER: Below are example descriptions; edit for additional applicable systems

1. Ceramic floor tile installed over concrete floor slabs using latex portland cement mortar and latex portland cement grout.
2. Quarry tile and base installed using latex portland cement mortar and industrial epoxy grout.

**1.11 SUBMITTALS**

NOTE TO SPECIFIER: Edit for applicable requirements

1. Submittal Requirements: Submit the following “Required LEED Criteria” certification items as listed below. Refer to Division 1 for additional requirements:
	1. A completed LEED Environmental Building Materials Certification Form. Information to be

 supplied generally includes:

* + 1. Manufacturing plant locations for tile installation products.
		2. LEED Credits as listed in Part 1.4B “LEED Credit Submittals”
		3. Recycled content; pre-consumer or post-consumer; or;

Project specific information gathered using the LATICRETE LEED Project Certification Assistant available at [www.laticrete.com/green](http://www.laticrete.com/green).

* 1. UL GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes

And Furnishings, UL 2818 or UL GREENGUARD Gold certificates provided by the tile installation materials manufacturer on UL GREENGUARD letterhead stating “This product has been UL GREENGUARD Gold Product Certified For Low Chemical Emissions by the UL Environment under the UL GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings” for each tile installation product used to verify Low VOC product information.

* 1. Contractor’s certification of LEED Compliance: Submit Contractor’s certification verifying the

 installation of specified LEED Compliant products.

* 1. Product Cut Sheets for all materials that meet the LEED performance criteria. Submit Product Cut

 Sheets with Contractor or Sub-contractor’s stamp, as confirmation that submitted products were

 installed on Project.

* 1. GHS format Safety Data Sheets for all applicable products.
1. LEED Credit Submittals for the following;
	1. LEED Reference Guide for Green Building Design and Construction, LEED v4 MR Credit Building

 Product Disclosure and Optimization – Material Ingredients: Manufacturer’s product data for tile

 installation materials, including Health Product Declaration (HPD) on HPD Collaborative letterhead.

* 1. LEED Reference Guide for Green Building Design and Construction, LEED v4 MR Credit Building

 Product Disclosure and Optimization – Sourcing of Raw Materials Option 2 (Recycled Content):

 Manufacturer’s product data for tile installation materials.

* 1. LEED Reference Guide for Green Building Design and Construction, LEED v4 MR Credit:

 Building Product Disclosure and Optimization – Sourcing of Raw Materials Option 2 (Regional

 Materials): Product data indicating location of material manufacturer for regionally manufactured

 Materials (within 100 miles of project site).

* 1. LEED Reference Guide for Green Building Design and Construction, LEED v4 Edition MR Credit Construction and Demolition Waste Management: Path 1 (Divert 50% and Three Material Streams) Manufacturer’s packaging showing recycle symbol for appropriate disposition in construction waste management.
	2. LEED Reference Guide for Green Building Design and Construction, LEED v4 Edition MR Credit Construction and Demolition Waste Management: Path 1 (Divert 75% and Four Material Streams) Manufacturer’s packaging showing recycle symbol for appropriate disposition in construction waste management.
	3. LEED Reference Guide for Green Building Design and Construction, LEED v4 EQ Credit

 Low-Emitting Materials: Manufacturer’s product data for tile installation materials, including UL

 GREENGUARD Gold Certificate on UL GREENGUARD letterhead stating product VOC emissions.

7. LEED Schools Reference Guide (Educational Projects Only), 2007 Edition Credit EQ 9 (Enhanced

 Acoustical Performance): Impact noise reduction test reports and product data on sound control

 product(s).

8. LEED Schools Reference Guide (Educational Projects Only), 2007 Edition Credit EQ 10 (Mold

 Prevention): Manufacturer’s packaging and/or data showing anti-microbial protection in product(s).

1. Submit shop drawings and manufacturers' product data under provisions of Section (01 30 00)

(01 34 00)

1. Submit samples of each type/style/finish/size/color of ceramic tile, mosaic, paver, trim unit or threshold under provisions of Section (01 30 00) (01 34 00)
2. Submit manufacturers' installation instructions under provisions of Section (01 30 00) (01 34 00)
3. Submit manufacturer's certification under provisions of Section (01 45 00) that the materials supplied conform to ANSI A137.1 for ceramic tile or ANSI A137.2 for glass tile.
4. Submit proof of warranty.
5. Submit Health Product Declarations (HPD) for each tile installation material.
6. Submit sample of installation system demonstrating compatibility/functional relationships between adhesives, mortars, grouts and other components under provision of Section (01 30 00) (01 34 00). Submit proof from ceramic tile manufacturer or supplier verifying suitability of ceramic tile for specific application and use; including dimensional stability, water absorption, freeze/thaw resistance (if applicable), resistance to thermal cycling, and other characteristics that the may project may require. These characteristics must be reviewed and approved by the project design professional(s).
7. 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.
8. For alternate materials, at least thirty (30) days before bid date submit independent laboratory testresults confirming compliance with specifications listed in Part 2 - Products.

**1.12 QUALITY ASSURANCE**

NOTES TO SPECIFIER:

1. It is strongly recommended to use installers who have demonstrated their commitment to their craft and taken the time to stay current with the latest materials and methods. Requiring references and a portfolio along with a bid or estimate is a good way to ensure the installer has successfully completed work of similar size, scope, and complexity.
2. Pools, exterior facades, mortar beds, shower pans, steam showers, etc. require different skills. Matching installer ability to the project at hand requires close evaluation of their experience, training, state licensing (where applicable), and certifications/credentials (where applicable). The Ceramic Tile Education Foundation (CTEF) provides a Contractor Questionnaire that can be used to aid in evaluating and comparing contractors ([www.tilecareer.com](http://www.tilecareer.com)).
3. Various programs administered by associations, non-profit educational organizations, unions, and private companies serve the tile industry by providing education, hands-on training, and evaluation of the skills and competency of installers and contractors. It is important to distinguish between the many programs available:
* Hands-on training
* Evaluation/certification of installation skills
* On-line training
* On-line knowledge evaluation (without a hands-on component)

As with all programs, the rigor and credibility of the program must also be considered.

The following non-profit programs are well established and recognized by the Tile Council of North America’s (TCNA) Handbook Committee (listed alphabetically):

**Ceramic Tile Education Foundation (CTEF) Certified Tile Installer Program:** CTEF tests hands-on installation skills and knowledge. Installers must achieve the minimum required score on both tests to earn the “CTEF Certified Installer” designation. Contractors that employ CTEF Certified Installers are listed in the CTEF Contractor Directory, found in this *Handbook* and on the CTEF website. See [www.tilecareer.org](http://www.tilecareer.org) for more information.

**International Masonry Institute (IMI) Contractor College Program:** IMI conducts professional and technical courses for union masonry and tile contractors, which lead to certification in installation and project supervision. See [www.imiweb.org](http://www.imiweb.org/) for more information.

**Journeyman Tile Layer Apprenticeship Programs:** Installers recognized by the U.S. Department of Labor (DOL) as Journeyman Tile Layers are required to fulfill and document several years of training and on-the-job experience as apprentices to become Journeymen. The majority of these setters earn their Journeyman status through union-affiliated training programs, although some non-union tile contractors administer their own DOL-recognized apprenticeship programs and employ journeyman tile layers. Contractors that employ union Journeyman Tile Setters can be found through the union locals that list their signatory contractors, primarily the Bricklayer and Allied Craftworkers (BAC) and the United Brotherhood of Carpenters (UBC). See [www.bacweb.org](http://www.bacweb.org/) and [www.carpenters.org](http://www.carpenters.org/) for more information.

**National Tile Contractors Association (NTCA) Five Star Contractor Program:** NTCA is a tile contractors association, with membership open to all tile contractors. Their Five Star program is a peer review program to recognize NTCA members who have demonstrated a track record of providing successful installations. Earning the Five Star designation requires recommendations from customers, suppliers, and peers as well as participation in continuing education, training, and safety programs. See [www.tile-assn.com](http://www.tile-assn.com/) for more information.

**Tile Contractors’ Association of America (TCAA) Trowel of Excellence Program:** TCAA is a contractors association for BAC signatory contractors. Its Trowel of Excellence program is a peer review program to recognize TCAA members who have demonstrated a track record of providing successful installations. Earning the Trowel of Excellence designation requires letters of reference, submittal of a detailed project description and photos, employee participation in educational programming, and proof of financial responsibility. See [www.tcaainc.org](http://www.tcaainc.org/) for more information.

1. Tile Manufacturer (single source responsibility): Company specializing in ceramic tile, thin brick, masonry veneer, mosaics, pavers, trim units and/or thresholds with three (3) years minimum experience. Obtain tile from a single source with resources to provide products of consistent quality in appearance and physical properties.
2. Installation System Manufacturer (single source responsibility): Company specializing in adhesives, mortars, grouts and other installation materials with ten (10) years minimum experience and ISO 9001 certification. Obtain installation materials from single source manufacturer to insure consistent quality and full compatibility.
3. 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.
4. Installer qualifications: company specializing in installation of ceramic tile, thin brick, masonry veneer, mosaics, pavers, trim units and/or thresholds with five (5) years documented experience with installations of similar scope, materials and design.

**1.13 MOCK-UPS**

Provide mock-up of each type/style/finish/size/color of ceramic tile, thin brick, masonry veneer, mosaics, pavers, trim units and/or thresholds along with respective installation adhesives, mortars, grouts and other installation materials, under provisions of Section(s) (01 43 00) (01 43 39).

**1.14 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, Tile Manufacturer, Installation System Manufacturer and any other parties who are involved in the scope of this installation must attend the meeting.

**1.15 DELIVERY, STORAGE AND HANDLING**

1. 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.
2. Store ceramic tile, stone, and installation system materials in a dry location; handle in a manner to prevent chipping, breakage, and contamination.
3. Protect latex additives, organic adhesives, epoxy adhesives and sealants from freezing or overheating in accordance with manufacturer's instructions; store at room temperature when possible.
4. Store portland cement mortars and grouts in a dry location.

**1.16 PROJECT/SITE CONDITIONS**

1. Provide ventilation and protection of environment as recommended by manufacturer.
2. Prevent carbon dioxide damage to ceramic tile, thin brick, masonry veneer, mosaics, pavers, trim units and/or thresholds as well as adhesives, mortars, grouts and other installation materials, by venting temporary heaters to the exterior.

C. Maintain ambient temperatures not less than 50ºF (10ºC) or more than 100ºF (38ºC) 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 37ºF (3ºC). 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 60ºF (16ºC) and 90ºF (32ºC) at time of installation. It is the General Contractor’s responsibility to maintain temperature control.

**1.17 SEQUENCING AND SCHEDULING**

NOTES TO SPECIFIER: Edit for project specific sequence and scheduling

1. Coordinate installation of tile work with related work.
2. Proceed with tile work 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.

**1.18 WARRANTY**

NOTE TO SPECIFIER: Select one of the following LATICRETE system warranties.

1. 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 as determined by local or project requirements. The manufacturer of adhesives, mortars, grouts and other installation materials shall provide a written twenty-five (25) year warranty, which covers materials and labor - reference LATICRETE Warranty Data Sheet 025.0 for complete details and requirements.
2. For exterior facades over steel or wood framing, the manufacturer of adhesives, mortars, grouts and other installation materials shall provide a written fifteen (15) year warranty, which covers materials and labor - reference LATICRETE Warranty Data Sheet 230.15 for complete details and requirements.

**1.19 MAINTENANCE**

Submit maintenance data under provisions of Section(s) (01 74 13) (01 74 16) (01 74 23). Include cleaning methods, cleaning solutions recommended, stain removal methods, as well as polishes and waxes recommended.

**1.20 EXTRA MATERIALS STOCK**

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

**PART 2 - PRODUCTS**

**2.1 TILE MANUFACTURERS**

NOTE TO SPECIFIER: Provide list of acceptable tile manufacturers.

Subject to compliance with paragraphs 1.12 and performance requirements, provide products by one of the following manufacturers:

**2.2 WALL TILE MATERIALS**

NOTE TO SPECIFIER: edit for each tile type

1. Ceramic Tile:
2. Grade:
3. Size:
4. Edge:
5. Finish:
6. Color:
7. Special shapes:
8. Location:

**2.3 FLOOR TILE MATERIALS**

NOTE TO SPECIFIER: edit for each tile type

1. Ceramic Tile:
2. Grade:
3. Size:
4. Edge:
5. Finish:
6. Color:
7. Special shapes:
8. Location:

**2.4 INSTALLATION MATERIALS MANUFACTURER**

1. LATICRETE International, Inc., 1 Laticrete Park North, Bethany, CT 06524-3423 USA Phone 800-243-4788, (203) 393-0010 technicalservices@laticrete.com, [www.laticrete.com](http://www.laticrete.com); [www.laticrete.com/green](http://www.laticrete.com/green)

NOTE TO SPECIFIER: The following ‘Accessories’ are separated into two (2) categories; ‘Ceramic Tile’ accessories and ‘Exterior Adhered Veneer’ accessories. Edit as applicable – delete all that do not apply.

**2.5 INSTALLATION ACCESSORIES - CERAMIC TILE**

NOTE TO SPECIFIER: Edit applicable tile installation accessories. Refer to the LATICRETE membrane product data sheet and the physical test data contained therein for information to be used by the Project Design Professional to determine suitability, placement, building code conformance and over-all construct appropriateness of a given installation assembly.

1. Waterproofing and Crack Isolation Membrane to be thin, cold applied, single component liquid and load bearing and UL GREENGUARD Gold certified. Reinforcing fabric (if required) to be non-woven rot-proof specifically intended for waterproofing membrane. Waterproofing Membrane to be non-toxic, non-flammable, and non-hazardous during storage, mixing, application and when cured. It shall be certified by IAPMO and ICC approved as a shower pan liner and shall also meet the following physical requirements:
	1. Hydrostatic Test (ASTM D4068): Pass
	2. Elongation @ break (ASTM D751): 20-30%
	3. System Crack Resistance (ANSI A118.12): Pass (High)
	4. 7 day Tensile Strength (ANSI A118.10): 265 psi (1.8 MPa)
	5. 7 day Shear Bond Strength (ANSI A118.10) 200 psi (1.4 MPa)
	6. 28 Day Shear Bond Strength (ANSI A118.4): 214 psi (1.48 – 2.4 MPa)
	7. Service Rating (TCNA/ASTM C627): Extra Heavy
	8. VOC Content: 2.39 g/L
	9. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE® HYDRO BAN®XP\*\*)**

1. Epoxy Waterproofing Membrane to be 3 component epoxy, trowel applied specifically designed to be used under Ceramic tile, stone or brick and requires only 24 hours prior to flood testing:
	1. Breaking Strength (ANSI A118.10): 450-530 psi (3.1-3.6 MPa)
	2. Waterproofness (ANSI A118.10): No Water penetration
	3. 7 day Shear Bond Strength (ANSI A118.10): 110-150 psi (0.8-1.0 MPa)
	4. 28 Day Shear Bond Strength (ANSI A118.10): 90-120 psi (0.6–0.8 MPa)
	5. 12 Week Shear Bond Strength (ANSI A118.10): 110-130 psi (0.8-0.9 MPa)
	6. Total VOC Content: <3.4 g/L

**(Basis of Design: LATAPOXY® Waterproof Flashing Mortar)**

1. Waterproofing Sheet Membrane to be thin, durable polyethylene core with a fused non-woven polypropylene exterior surface, IAPMO approved as shower pan liner, and allow for use of either polymer modified or un-modified tile mortars, depending upon substrate and type of tile used.
	1. Waterproofness (ASTM D4068): Pass
	2. 7 day Shear Bond Strength (ANSI A118.10): ≥ 170 psi
	3. 7-Day Water Immersion Shear Strength (ASTM C482-09): ≥ 100 psi
	4. Service Rating (TCNA ASTM C627): Extra Heavy

 **(Basis of Design: LATICRETE HYDRO BAN Sheet Membrane)**

1. Lightweight, Waterproof Tile Backer Board to comprised of high-density polystyrene core and reinforced, waterproof coating on both sides. Available in thicknesses from ¼” to 5/8” (6mm to 16mm) and specifically designed for use in bonded tile and stone installations.
2. Compressive Strength@ ½”(3mm) (ASTM D1621): 57 psi (0.39 MPa)
3. Flatwise Tensile Strength (ASTM C297): 55 psi (0.4 MPa)
4. Linear Variation (ASTM G1, G2): 0.04%
5. Shear Strength (ASTM C482): 43 psi (0.3 MPa)
6. Waterproofness (ASTM D4068): Pass
7. R-Value (ASTM C578): R=5.2 / inch (25.4mm)
8. Flexural Strength (ASTM C947): 673 psi (4.6 MPa)
9. Smoke Index (ASTM E84): 105
10. Flame Spread (ASTM E84): 5
11. Sound Transmission (ASTM E90 STC): 17

**(Basis of Design: LATICRETE® HYDRO BAN® Board)**

1. A one component, polymer fortified, cement based waterproofing that mixes with water that passes ANSI A118.10, and can withstand 2 Bars (29 psi) of negative hydrostatic pressure.
2. 7 Day Hydrostatic Test (ANSI A118.10): Pass
3. 7 Day Breaking Strength (ANSI A118.10): 450 - 500 psi (3.1 – 3.45 MPa)
4. 7 Day Water Immersion (ANSI A118.10): 120 - 150 psi (0.83 – 1.03 MPa)
5. 7 Day Shear Bond Strength (ANSI A118.10): 320 – 400 psi (2.21 – 2.76 MPa)
6. 28 Day Shear Strength (ANSI A118.10): 370 – 450 psi (2.55 – 3.10 MPa)
7. System Crack Resistance Test (ANSI A118.12 5.4): Pass-High (with fabric)
8. Water Vapor Transmission (ASTM E96 Procedure B: 1.6 – 1.7 grains/hr٠ft (1.1 – 1.2 g/hr٠ft)
9. Water Vapor Permeance (ASTM E96 Procedure B): 3.9 – 4 perms (225 – 235 ng/Pa٠s٠m2)
10. System Performance (ASTM C627 – TCNA Rating): Cycles 1 – 14 “Extra Heavy”
11. Tensile Strength for Elongation: 25%
12. Installed Thickness (Dried): 40 mil (1.02mm)

 **(Basis of Design: LATICRETE® HYDRO BAN® Cementitious Waterproofing)**

1. Low Profile Linear Floor Drain to be comprised of heavy duty 304 stainless steel, specially designed for bonded waterproofing installations, allow for large format tile use in showers with single slope to drain, available with standard, vertical waste line and horizontal side outlet, and with flow rate of ≥ eight (8) gallons per minute (30 liters per minute).

 **(Basis of Design: LATICRETE HYDRO BAN Linear Drain)**

1. Low Profile Bonding Flange Floor Drain to be comprised of heavy duty 304 stainless steel, specially designed for bonded waterproofing installations, allow for elimination of pre-slope layer and primary shower pan liner, per TCNA B422, and with flow rate of ≥ eight (8) gallons per minute (30 liters per minute).

 **(Basis of Design: LATICRETE HYDRO BAN Bonding Flange Drain)**

1. Floor Sealer: Colorless, stain- and slip-resistant sealer, not affecting color and physical properties of ceramic tile and stone surfaces as recommended by sealer manufacturer for application indicated.

**(Basis of Design: LATICRETE STONETECH® BulletProof® Sealer)**

1. Wire Reinforcing: 2” x 2” (50 x 50 mm) x 16 ASW gauge or 0.0625” (1.6mm) diameter galvanized steel welded wire mesh complying with ANSI A108.02 3.7, ASTM A185 and ASTM A82.
2. Cleavage membrane: 15 pound asphalt saturated, non-perforated roofing felt complying with ASTM D226, 15 pound coal tar saturated, non-perforated roofing felt complying with ASTM D227 or 4.0 mils (0.1 mm) thick polyethylene plastic film complying with ASTM D4397.
3. Cementitious backer board units: size and thickness as specified, complying with ANSI A118.9.
4. Thresholds: Provide marble saddles complying with ASTM C241 for abrasion resistance and ASTM C503 for exterior use, in color, size, shape and thickness as indicated on drawings.

**2.6 INSTALLATION ACCESSORIES – EXTERIOR ADHERED VENEER**

NOTE TO SPECIFIER: Edit applicable tile installation accessories. Refer to the LATICRETE membrane product data sheet and the physical test data contained therein for information to be used by the Project Design Professional to determine suitability, placement, building code conformance and over-all construct appropriateness of a given installation assembly.

1. Waterproofing / Crack Suppression / Air & Water Barrier Membrane to be thin, cold applied, single component liquid and load bearing. Reinforcing fabric to be non-woven rot-proof specifically intended for waterproofing membrane. Waterproofing Membrane to be non-toxic, non-flammable, and non-hazardous during storage, mixing, application and when cured. It shall be certified by IAPMO and ICC approved as a shower pan liner and shall also meet the following physical requirements:
	1. Hydrostatic Test (ASTM D4068): Pass
	2. Elongation @ break (ASTM D751): 20-30%
	3. System Crack Resistance (ANSI A118.12): Pass (High)
	4. 7 day Tensile Strength (ANSI A118.10): >265 psi (1.8 MPa)
	5. 7 day Shear Bond Strength (ANSI A118.10) >200 psi (1.4 MPa)
	6. 28 Day Shear Bond Strength (ANSI A118.4): >214 psi (1.48 – 2.4 MPa)
	7. Service Rating (TCA/ASTM C627): Extra Heavy
	8. Total VOC Emissions: < 0.22 mg/m3

 **(Basis of Design: LATICRETE® MVIS™ Air & Water Barrier)**

B. Epoxy Waterproofing Membrane/Flashing Mortar to be 3 component epoxy, trowel applied specifically designed to be used under masonry veneer, stone or thin brick and requires only 24 hours prior to flood testing:

* 1. Breaking Strength (ANSI A118.10): 450-530 psi (3.1-3.6 MPa)
	2. Waterproofness (ANSI A118.10): No Water penetration
	3. 7 day Shear Bond Strength (ANSI A118.10): 110-150 psi (0.8-1 MPa)
	4. 28 Day Shear Bond Strength (ANSI A118.10): 90-120 psi (0.6–0.83 MPa)
	5. 12 Week Shear Bond Strength (ANSI A118.10): 110-130 psi (0.8-0.9 MPa)
	6. Total VOC Content: <3.36 g/L

 **(Basis of Design: LATAPOXY® Waterproof Flashing Mortar)**

1. Sealer (Exterior Masonry Veneers): water-based formula specifically designed for topical application on porous stones in exterior applications.

**(Basis of Design: LATICRETE STONETECH® Heavy Duty Exterior Sealer)**

1. Galvanized, diamond metal lath: flat expanded type, weighing not less than 3.2 lb. per yd2 (1.4 kg/m2). Metal lath shall comply with ASTM C847.
2. Cleavage membrane: 15 pound asphalt saturated, non-perforated roofing felt complying with ASTM

D226, 15 pound coal tar saturated, non-perforated roofing felt complying with ASTM D227 or 4.0 mils (0.1 mm) thick polyethylene plastic film complying with ASTM D4397.

1. Cementitious backer board units: size and thickness as specified, complying with ANSI A118.9.

**2.7 INSTALLATION MATERIALS - CERAMIC TILE**

NOTE TO SPECIFIER: Edit applicable tile installation materials.

1. Sound Abatement & Crack Isolation Mat shall be load bearing, shock and vibration resistant. It shall be certified by independent laboratory testing to meet the specified acoustical performance when installed in a Floor Assembly with a 6" (150mm) concrete slab, as well as meet the following physical requirements:
	1. Service Rating (ASTM C627): Light
	2. Point Load (ANSI A118.12 5.2): >1,250 psi (8.6 MPa)
	3. Installed Weight (ASTM C905 Modified): 2.6 lbs./ft2 (12.8 kg/m2)
	4. Delta Impact Insulation Class (ΔIIC; ASTM E2179): 20

 **(Basis of Design: LATICRETE 170 Sound & Crack Isolation Mat)**

1. Sound Abatement & Crack Suppression Adhesive shall comply with ANSI A118.12, provide an Extra Heavy rating, be UL GREENGUARD Gold certified, and provide a minimum ΔIIC of 14:

1. Service Rating (ASTM C627): Extra Heavy

2. Delta Impact Insulation Class (ΔIIC; ASTM E2179): ≥ ΔIIC 14

 3. Point Load (ANSI A118.12 5.2): >1,000 psi (6.9 MPa)

4. Minimum Shear Bond Strength (ANSI A118.12): 100psi (0.7 MPa)

5. VOC Content: 0.00 g/L

6. Total VOC Emissions: < 0.22 mg/m3

**(Basis of Design: LATICRETE 125 TRI MAX ™**

1. Uncoupling Membrane shall comply with ANSI A118.12, provide an Extra Heavy rating and allow for use with ANSI A118.4 thin-bed mortars:

1. Service Rating (ASTM C627): Extra Heavy

2. ANSI A118.12 (High Performance): Pass

**(Basis of Design: LATICRETE® STRATA\_MAT™)**

1. Moisture Vapor Reduction to be epoxy based and UL GREENGUARD Gold certified as well as meet the following physical requirements:

1. Shear Bond to Concrete (ANSI A118.12-5.1.5): >285 psi (2.0 MPa)

2. Alkalinity Resistance (ASTM C267): Pass

3. Permeability (ASTM F1869): 9.7 lb/1,000ft2/24 hours down to 0.2

 lb/1,000 ft2/24hours (248 µg/s•m2 down to

 11 µg/s•m2)

4. VOC Content: 9.4 g/L

5. Total VOC Emissions: ≤0.22 mg/m3

**(Basis of Design: LATICRETE® NXT™ Vapor Reduction Coating\*\* and LATICRETE VAPOR BAN™ Primer ER)**

1. Mat designed to act as foundation for installation of Electric Radiant Heat Wire and as an uncoupling membrane, and, to be comprised of fabric mesh and plastic nodules construction. Must be UL approved for intended purpose and comply with UL 1693 - Electric Radiant Heating Panels and Heating Panel Sets and UL 1673 - Electric Space Heating Cables.

**(Basis of Design: (LATICRETE STRAT\_HEAT Mat and *LATICRETE STRATA\_HEAT Wire)***

1. Electric Radiant Heat Cable System to be comprised of intertwining heat element and mesh construction and comply with UL 1693 - Electric Radiant Heating Panels and Heating Panel Sets and UL 1673 - Electric Space Heating Cables

**(Basis of Design: (LATICRETE STRAT\_HEAT Mat and LATICRETE STRATA\_HEAT Wire)**

1. Pre-fabricated & pre-sloped shower pan with curb constructed of lightweight high density expanded polystyrene. Approved by IAPMO PS 106 for US & CAN as a pre-fabricated tile-able shower receptor and exceeds ANSI A118.10. Use only manufacturer approved adhesives and sealants for installation.

**(Basis of Design: LATICRETE HYDRO BAN® Pre-Sloped Shower Pan and LATICRETE HYDRO BAN Preformed Curb / HYDRO BAN Linear Pre-Sloped Shower Pan)**

1. Latex Portland Cement Mortar for thick beds, screeds, leveling beds and scratch/plaster coatsto be weather, frost, shock resistant, UL GREENGUARD Gold certified, and meet the following physical requirements:

1. Compressive Strength (ANSI A118.4 Modified): >4,000 psi (27.6 MPa)

2. Water Absorption (ANSI A118.6): ≤ 5%

3. Flexural Strength (ANSI A118.7 3.5): 1,100 – 1,200 psi (7.5 – 8.3 MPa)

4. Service Rating (TCA/ASTM C627): Extra Heavy

5. Shrinkage (ASTM C157 - 7 Day Cure): 0.05%

6. VOC Content: 0.00 g/L

7. Total VOC Emissions: ≤0.22 mg/m3

**(Basis of Design: LATICRETE 3701 Fortified Mortar\*\*)**

1. Self-Leveling Underlayment shall be mixed with water to produce a pumpable, fast setting, free flowing cementitious underlayment, which can be poured from 1/8 in. to 1-1/4 in. (3 to 32mm) thick in one pour and GREENGUARD Gold certified.
	1. 28 Day Compressive Strength (ASTM C1708.): >4000 psi (27.6 MPa)
	2. Tensile Bond Strength (ASTM C1583): >500 psi (3.5 MPa)
	3. Time To Foot Traffic: 1 – 4 Hours
	4. VOC Content: 0.00 g/L (NXT Level Plus); 7.00 (Primer Plus)
	5. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE NXT™ Level Plus and Primer Plus)**

1. Epoxy Adhesive to be chemical resistant 100% solids epoxy with high temperature resistance, UL GREENGUARD Gold certified, conform to ISO R2, and meet the following minimum physical requirements:
	1. Compressive Strength (ANSI A118.3): >5000 psi (34.4 MPa)
	2. Shear Bond Strength (ANSI A118.3): >1250 psi (8.6 MPa)
	3. Thermal Shock Resistance (ANSI A118.3): >600 psi (4.1 MPa)
	4. Tensile Strength (ANSI A118.3): >1400 psi (9.6 MPa)
	5. Shrinkage (ANSI A118.3): 0 – 0.1%
	6. VOC Content: 0.80 g/L
	7. Total VOC Emissions: ≤0.22 mg/m3
	8. ISO 13007 Classification: R2
	9. 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, as well as chemically resistant to dilute food acids, dilute alkalis, gasoline, turpentine and mineral spirits.

 **(Basis of Design: LATAPOXY® 300 Adhesive\*\*)**

1. Modified Dry-Set Cement Thin Bed Mortar for thin set and slurry bond coats to be weather, frost, shock resistant, non-flammable, UL GREENGUARD Gold certified, conform to ISO C2TES1P1, and meet the following physical requirements:
2. Bond strength (ANSI A118.4): >450 psi (3.1 MPa)
3. Smoke & Flame Contribution (ASTM E84 Modified): 0
4. VOC Content: 0.00 g/L
5. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE® 254 Platinum\*\*)**

1. Improved Modified Dry-Set Cement Thin Bed Mortarfor thin set and slurry bond coatsto be weather, frost, shock resistant, non-flammable, UL GREENGUARD Gold certified, meet ANSI A118.15 requirements, conform to ISO C2TES1P1,and meet the following physical requirements:
	1. 28 Day Porcelain Tile Shear Strength (ANSI A118.15): >475-575 psi (3.3-4.0 MPa)
	2. 28 Day Dry Cure / 20 Cycle Freeze-Thaw Porcelain Tile

Shear Strength (ANSI A118.15): ≥ 250 psi (1.7 MPa)

* 1. 7 Day Cure / 7 Day Water Immersion (ANSI A118.15): >280 psi (1.9 MPa)
	2. Extended Open Time (ANSI A118.15): > 100 psi (0.7 MPa)
	3. Smoke & Flame Contribution (ASTM E84 Modified): 0
	4. VOC Content: 0.00 g/L
	5. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE 254 Platinum Plus\*\*)**

1. Rapid-Setting Modified Dry-Set Cement Thin Bed Mortarto be weather, frost, shock resistant, non-flammable, conform to C2FTS2 adhesive, and meet the following physical requirements:
	1. 28 Day Porcelain Tile Shear Strength (ANSI A118.4): >400 psi (2.8MPa)
	2. 7 Day Cure / 7 Day Water Immersion (ANSI A118.4): >200 psi (1.4 MPa)
	3. Shear Bond / Quarry Tile to Plywood (ANSI A118.11): >190 psi (1.3 MPa)
	4. Open Time (ANSI A118.4): ≥ 30 minutes
	5. VOC Content: 0 g/L

 **(Basis of Design: LATICRETE 254R Platinum Rapid)**

1. Modified Dry-Set Cement Thin Bed Glass Tile Adhesive to be weather, frost, shock resistant, non-flammable, UL GREENGUARD Gold certified, conform to ISO C2TS1, and meet the following physical requirements:
2. Bond strength (ANSI A118.4 5.2.4): >370 psi (2.55 MPa)
3. Bond strength (ANSI A118.4 5.2.3): 199 psi (1.37 MPa)
4. VOC Content: 0.00 g/L

 4. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE Glass Tile Adhesive LITE)**

1. Modified Dry-Set Cement Medium Bed Mortarto be weather, frost, shock resistant, non-flammable, UL GREENGUARD Gold certified, conform to ISO C2T, and meet the following physical requirements:
	1. 28 Day Tensile Strength (ISO 13007-4.4 4.2): 215 - 290 psi (1.5 – 2.0 MPa)
	2. 28 Day bond strength (ANSI A118.15 7.2.5): 500 - 600 psi (3.5 – 4.1 MPa)
	3. 7 Day Water Immersion Shear (ANSI A118.15 7.2.4): 350 – 450 psi (2.4 – 3.1 MPa)
	4. Freeze/Thaw Tensile Strength (ISO 13007-4.4 4.5: 145 – 215 psi (1.0 – 1.5 MPa)
	5. Sag Resistance (ANSI A118.4 6.0): 0 mm
	6. ISO Classification (ISO 13007): C2TES1
	7. VOC Content: 0.00 g/L
	8. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE® MULTIMAX™ LITE\*\*)**

1. Organic Adhesiveshall be a non-flammable, water resistant, latex adhesive and shall meet the following physical requirements:
	1. Open Time (ANSI A136.1): 70 minutes @ 75°F (24°C)
	2. Color: White
	3. Density (ANSI A136.1): 13.2 lbs/gal (1.6 kg/L)
	4. Total VOC Content <36.00 g/L

 **(Basis of Design: LATICRETE® 15 Premium Mastic)**

1. Epoxy Grout (Industrial) to be non-flammable, chemical resistant, 100% solids epoxy with high temperature resistance, UL GREENGUARD Gold certified, and meeting the following physical requirements:
	1. Initial Set Time (ANSI A118.5): Pass (4 hours)
	2. Service Set Time (ANSI A118.5): Pass (< 7 days)
	3. Shrinkage (ANSI A118.3): 0.07%
	4. Sag (ANSI A118.3): Pass (No sag)
	5. Shear Bond Strength (ANSI A118.3; quarry tile): 2,200 psi (15.2 MPa)
	6. Compressive Strength (ANSI A118.3): 8,300 psi (57.2 MPa)
	7. Tensile Strength (ANSI A118.5): 3,000 psi (20.7 MPa)
	8. Thermal Shock Resistance (ANSI A118.3): 2,100 psi (14.5 MPa)
	9. VOC Content: 0.80 g/L
	10. Total VOC Emissions: ≤0.22 mg/m3
	11. Cured Epoxy Grout to be chemically and stain resistant to ketchup, mustard, tea, coffee, milk, soda, beer, wine, bleach (3% solution), ammonia, juices, vegetable oil, detergents, brine, sugar, cosmetics, and blood, as well as being chemically resistant to dilute food/mineral acids, gasoline and mineral spirits.

 **(Basis of Design: LATICRETE SPECTRALOCK® 2000 IG\*\*)**

1. Epoxy Grout (Commercial/Residential) shall be non-toxic, non-flammable, non-hazardous during storage, mixing, application and when cured, UL GREENGUARD Gold certified, and shall meet the following physical requirements:
	1. Compressive Strength (ANSI A118.3): 3,800 psi (26.2 MPa)
	2. Shear Bond Strength (ANSI A118.3): 1,100 psi (7.6 MPa)
	3. Tensile Strength (ANSI A118.3): 1,100 psi (7.6 MPa)
	4. Thermal Shock (ANSI A118.3): >800 psi (5.5 MPa)
	5. Water Absorption (ANSI A118.3): <0.05%
	6. Vertical Joint Sag (ANSI A118.3): Pass
	7. VOC Content: 0.031 g/L
	8. Total VOC Emissions: ≤0.22 mg/m3
	9. Cured Epoxy 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, as well as chemically resistant to dilute acids and dilute alkalis.

 **(Basis of Design: LATICRETE SPECTRALOCK® PRO Premium Grout\*\*)**

1. Latex Portland Cement Grout to be weather, frost and shock resistant, conform to ISO 13007 requirements for CG2WAF, UL GREENGUARD Gold certified, as well as meet the following physical requirements:
	1. Compressive Strength (ANSI A118.7): 3,500 psi (24.1 MPa)
	2. Tensile Strength (ANSI A118.7): 510 psi (3.5 MPa)
	3. Flexural Strength (ANSI A118.7): 1,250 psi (8.6 MPa)
	4. Water Absorption (ANSI A118.7): < 5%
	5. Linear Shrinkage (ANSI A118.7): < 0.5 %
	6. Smoke & Flame Contribution (ASTM E84 Modified): 0
	7. VOC Content: 0.00 g/L
	8. Total VOC Emissions: ≤0.22 mg/m3

**(Basis of Design: LATICRETE® PERMACOLOR® Select\*\*)**

1. Pre-mixed stain proof grout to be sag-resistant, stain and crack resistant, suitable for use in grout joints ranging from 1/16” to 3/8” (1.5mm to 9mm) wide, and meet the following physical requirements:
2. Water Cleanability (ANSI A118.3): Pass
3. Vertical Joint Sag (ANSI A118.3): Pass

3. 28 Day Compressive Strength (ANSI A118.3): 3250 - 3600 psi (22.3 – 25 MPa)

1. Total VOC Content: <50 g/L

**(Basis of Design: LATICRETE SPECTRALOCK 1 Pre-Mixed Grout™)**

1. Expansion and Control Joint Sealant to be a one component, neutral cure, exterior grade silicone sealant and meet the following requirements:
	1. Tensile Strength (ASTM C794): 280 psi (1.9 MPa)
	2. Hardness (ASTM D751; Shore A): 25 (colored sealant) /15 (clear sealant)
	3. Weather Resistance (QUV Weather-ometer): 10,000 hours (no change)
	4. VOC Emissions: ≤0.5 mg/m3
	5. VOC Content: 35 g/L (translucent) and 42 g/L (sanded)

**(Basis of Design: LATICRETE LATASIL™ and LATICRETE LATASIL 9118 Primer)**

1. Metal Edge Trim: LATICRETE profile/trim in shape/design and in height to match tile and setting-bed thickness. Provide manufacturer's trim shapes where necessary to eliminate exposed tile edges, and/or at expansion joints, stair nosing, and transitions as necessary.

\*\* NOTE TO SPECIFIER \*\* Delete profile options not required. Delete material options not required. Fill in finish andcolor options.

* + - 1. Profile: L-shaped.
			2. Profile: Square.
			3. Profile: Finishing Profile.
			4. Profile: Round edge.
			5. Profile: Decorative border.
			6. Profile: Cove.
			7. Profile: T-shape.
			8. Profile: Stair nosing.
			9. Profile: Transition.
			10. Profile: Skirting.
			11. Profile: Expansion joint.
			12. Profile: \_\_\_\_\_\_\_\_.
			13. Material: Stainless steel.
			14. Material: Aluminum.
			15. Material: PVC.
			16. Material: Texture coated aluminum.
			17. Material: Brass.
			18. Material: Anodized aluminum.
			19. Material: Color-coated aluminum.
			20. Finish: \_\_\_\_\_\_\_\_.
			21. Color: \_\_\_\_\_\_\_\_.

 **(Basis of Design: LATICRETE Profiles & Trims)**

1. Roof Decks (and other exterior paving applications over occupied/storage spaces) shall consist of a Primary Roofing/Waterproofing Membrane, as specified in Section 0700 (q.v.), and a lightweight, frost/weather resistant installation system for tile, pavers, brick and ceramic tile that provides integral subsurface drainage and meets the following physical requirements:
	1. Compressive Strength (ASTM C109 Modified): 3,000 psi (20.7 MPa)
	2. Hydraulic Transmissivity (ASTM D4716): 1.6 gal./minute (6.1 L/minute)
	3. Service Rating (ASTM C627): Extra Heavy

**(Basis of Design: LATICRETE® Plaza and Deck System)**

1. Spot Bonding Epoxy Adhesive for installing tile, brick, masonry veneer, and Ceramic tile over vertical and overhead surfaces shall be high strength, high temperature resistant, non-sag and shall meet the following physical requirements:
	1. Thermal Shock Resistance (ANSI A118.3): >1,000 psi (6.9 MPa)
	2. Water Absorption (ANSI A118.3): 0.1 %
	3. Compressive Strength (ANSI A118.3): >8,300 psi (57.2 MPa)
	4. Shear Bond Strength (ANSI A118.3 Modified): >730 psi (5 MPa)
	5. Total VOC Content: ≤1.01 g/L

**(Basis of Design: LATAPOXY® 310 Stone Adhesive / LATAPOXY 310 Rapid Stone Adhesive)**

\*\* UL GREENGUARD Certified For Low Chemical Emissions (ULCOM/GG 2818) and UL GREENGUARD

 Gold Certified For Low Chemical Emissions (ULCOM/GG UL 2818)

**2.8 INSTALLATION MATERIALS – EXTERIOR ADHERED VENEER**

NOTE TO SPECIFIER: Edit section based on project specific installation methods and requirements

1. Latex Portland Cement Mortar for thick beds, and scratch/plaster coatsto be weather, frost, shock resistant, non-flammable, UL GreenGuard Gold certified, and meet the following physical requirements:
	1. Compressive Strength (ANSI A118.7 Modified): >4000 psi (27.6 MPa)
	2. Total VOC Emissions: < 0.22 mg/m3

 **(Basis of Design: LATICRETE MVIS™ Premium Mortar Bed)**

1. Latex Portland Cement Thin Bed Mortarfor thin set to be weather, frost, shock resistant, non-flammable, UL GreenGuard Gold certified, and meet the following physical requirements:
	1. Compressive strength (ASTM C270): ≥2900 psi (20 MPa)
	2. Shear bond strength (ANSI A118.4 5.2.4): ≥300 psi (2.1 MPa)
	3. Sag On Wall (EN 1308): 0.0mm
	4. Total VOC Emissions: ≤0.22 mg/m3

 **(Basis of Design: LATICRETE MVISHi-Bond Veneer Mortar)**

1. Latex Portland Cement Pointing Mortar to be weather, frost and shock resistant, non-flammable, UL GREENGUARD Gold certified, as well as meet the following physical requirements:
	1. Compressive Strength (ASTM C91): ≥4100 psi (28.3 MPa)
	2. Total VOC Emissions: < 0.22 mg/m3

 **(Basis of Design: LATICRETE MVISPremium Pointing Mortar)**

1. Expansion and Control Joint Sealant to be a one component, neutral cure, exterior grade silicone sealant and meet the following requirements:
	1. Tensile Strength (ASTM C794): 280 psi (1.9 MPa)
	2. Hardness (ASTM D751; Shore A): 25 (colored sealant) /15 (clear sealant)
	3. Weather Resistance (QUV Weather-ometer): 10000 hours (no change)

**(Basis of Design: LATICRETE MVIS Silicone Sealant)**

**PART 3 – EXECUTION**

* 1. **SUBSTRATE EXAMINATION**

NOTES TO SPECIFIER:

1. The project design should include the intended use and necessary allowances for the expected live load, concentrated load, impact load, and dead load including the weight of the finish and installation materials.
2. In addition to deflection considerations, above-ground installations are inherently more susceptible to vibration. Consult grout, mortar, and membrane manufacturer to determine appropriate installation materials for above-ground installations. A crack isolation and higher quality setting materials can increase the performance capabilities of above-ground applications. However, the upgraded materials cannot mitigate structural deficiencies including floors not meeting code requirements and/or over loading or other abuse of the installation in excess of design parameters.
3. Should the architect/designer require a more stringent finish tolerance (e.g. 1/8” in 10’ [3mm in 3m]), the subsurface specification must reflect that tolerance, or the tile specification must include a specific and separate requirement to bring the subsurface tolerance into compliance with the desired tolerance.
4. Wall flashings and weeps for exterior adhered veneers are to be designed by the Project Architect / Engineer

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

* 1. Sound, rigid and conform to good design/engineering practices;
	2. Systems, including the framing system and panels, over which ceramic tile will be installed shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes.
	3. Clean and free of dust, dirt, oil, grease, sealers, curing compounds, laitance, efflorescence, form oil, loose plaster, paint, and scale;
	4. For thin-bed Ceramic tile installations when a cementitious bonding material will be used, including medium bed mortar: maximum allowable variation in the tile substrate – for tiles with edges shorter than 15” (375mm), maximum allowable 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 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. For modular substrate units, such as exterior glue plywood panels or adjacent concrete masonry units, adjacent edges cannot exceed 1/32” (0.8mm) difference in height. For thick bed (mortar bed) Ceramic tile and stone installations, and self-leveling methods; maximum allowable variation in the installation substrate to be (1/4” in 10’ (6mm in 3m).
	5. To fully evacuate water, shower pan membranes and bonded waterproofing membranes in wet areas must slope to and connect with a drain. Plumbing code typically requires membranes to be sloped a minimum of ¼” per ft. (6mm per 300mm) and extend at least 3” (75mm) above the height of the curb or threshold. Account for the perimeter floor height required to form adequate slopes. Membranes must be installed over the other horizontal surfaces in wet areas subject to deterioration, like shower seats. They must be sloped and configured so as to direct water to the membrane connected to the drain. The weep holes of clamping ring drains enable water to pass from the membrane into the plumbing system. Crushed Ceramic tile or stone, or other positive weep protectors, placed around/over weep holes help prevent their blockage. To form a watertight seal, membranes must have adequate contact with the clamping ring of the drain or with the bonding area of an integrated bonding flange.
	6. Not leveled with gypsum or asphalt based compounds
	7. For substrates scheduled to receive a waterproofing and/or crack isolation membrane, maximum amount of moisture in the concrete/mortar bed substrate should not exceed 5 lbs./1,000 ft2 / 24 hours (283 µg/s•m2) per ASTM F1869 or 75% relative humidity as measured with moisture probes per ASTM F2170. Consult with finish materials manufacturer to determine the maximum allowable moisture content for substrates under their finished material. Please refer to LATICRETE TDS [183](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds183.ashx) “Drying of Concrete” and TDS [166](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds166.ashx) “LATICRETE and Moisture Vapor Emission Rate, Relative Humidity and Moisture Testing of Concrete”, available at [www.laticrete.com](http://www.laticrete.com), for more information.
	8. 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 (21°C), including an initial seven (7) day period of wet curing;

NOTE TO SPECIFIER: LATICRETE® 254 Platinum does 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 – CEMENTITIOUS BACKER UNIT OVER STEEL FRAMED WALLS**

NOTE TO SPECIFIER: edit substrate and preparation section based on project specific surfaces and conditions.

1. CEMENTITIOUS BACKER UNIT (CBU) OVER STEEL FRAMING
	1. All designs, specifications and construction practices shall be in accordance with industry standards. Refer to latest editions of:

 American Iron and Steel Institute (AISI) **“Specification for the Design of Cold-Formed Steel Structural Members”** [www.steel.org];

Canadian Sheet Steel Building Institute (CSSBI) **“Lightweight Steel Framing Binder {Publication 52M}”** [www.cssbi.ca];

Steel Stud Manufacturers Association (SSMA) **“Product Technical Information”** and **“ICBO Evaluation Service, Inc. Report ER-4943P”** [www.ssma.com];

Metal Lath/Steel Framing Association **“Steel Framing Systems Manual.”**

* 1. Prior to commencing work, installer must submit to Architect/Structural Engineer for approval, shop drawings showing wall/façade construction and attachment details. All attachments must be designed to prevent transfer of building or structural movement to the wall/façade.
	2. Construct all framing with galvanized or other rust resistant steel studs and channels; minimum requirements:

Stud Gauge: 16 gauge (1.5mm);

Stud Steel: conforming to ASTM A570 – latest edition with a minimum yield point of 50 ksi;

Stud Spacing: not to exceed 16” (400mm) on center;

Stud Width: 6” (150mm);

Horizontal Bridging: Not to exceed 4’ (1.2m) on center; 16 gauge CR channel typical ***or as specified by structural engineer.***

* 1. Studs shall be seated squarely in the channel tracks with the stud web and flange abutting the track web, plumbed or aligned, and securely attached to the flanges or web of both the upper and lower tracks by welding. Similarly connect horizontal bridging/purlins and anti-racking diagonal bracing ***as determined by structural engineer*.** Grind welds smooth and paint with rust inhibiting paint. Finished frame and components must be properly aligned, square and true.
	2. Provide adequate support of framing elements during erection to prevent racking, twisting or bowing. Lay out the CBU installation so all board edges are supported by metal framing (studs vertically and purlins horizontally). Cut/fit CBU and add additional framing elements as required to support board edges. Stagger boards in courses to prevent continuous vertical joints and allow ⅛-3/16” (3-5mm) between sheets.
	3. Fasten the CBU with 7/8” (22mm) minimum length, non-rusting, self-imbedding screws for metal studs (BUILDEX® Catalog item 10-24 17/16 Wafer T3Z or equivalent). Fasten the boards every 6” (150mm) at the edges and every 8” (200mm) in the field. Stagger placement of screws at seams. Place screws no less than ⅜” (9mm), and no more than 1” (25mm), from board edges.
	4. Tape all the board joints with the alkali resistant 2” (50mm) wide reinforcing mesh provided by the CBU manufacturer imbedded in the same mortar used to install the ceramic tile, mosaic, pavers, brick or stone.
	5. Compliance with design criteria and state and local building codes must approved and certified by a qualified structural engineer. Use more stringent design criteria when necessary to comply with state and local building code stiffness requirements for thin veneers.

**3.3 SURFACE PREPARATION – EXTERIOR RATED SHEATHING OVER STEEL FRAMED WALLS**

1. SHEATHING (e.g. EXTERIOR OSB , EXTERIOR GRADE PLYWOOD, & OTHER EXTERIOR RATED SHEATHING) OVER FRAMING
	1. All designs, specifications and construction practices shall be in accordance with industry standards. Refer to latest editions of:

 American Iron and Steel Institute (AISI) **“Specification for the Design of Cold-Formed Steel Structural Members”** [www.steel.org];

Canadian Sheet Steel Building Institute (CSSBI) **“Lightweight Steel Framing Binder {Publication 52M}”** [www.cssbi.ca];

Steel Stud Manufacturers Association (SSMA) **“Product Technical Information”** and **“ICBO Evaluation Service, Inc. Report ER-4943P”** [www.ssma.com];

Metal Lath/Steel Framing Association **“Steel Framing Systems Manual.”**

* 1. Prior to commencing work, installer must submit to Architect/Structural Engineer for approval, shop drawings showing wall/façade construction and attachment details. All attachments must be designed to prevent transfer of building or structural movement to the wall/façade.
	2. Construct all framing with galvanized or other rust resistant steel studs and channels; minimum requirements:

Stud Gauge: 16 gauge (1.5mm);

Stud Steel: conforming to ASTM A570 with a minimum yield point of 50 ksi (345 MPa);

Stud Spacing: not to exceed 16” (400mm) on center;

Stud Width: 6” (150mm);

Horizontal Bridging: Not to exceed 4’ (1.2m) on center; 16 gauge CR channel typical ***or as specified by structural engineer.***

* 1. Studs shall be seated squarely in the channel tracks with the stud web and flange abutting the track web, plumbed or aligned, and securely attached to the flanges or web of both the upper and lower tracks by welding. Similarly connect horizontal bridging/purlins and anti-racking diagonal bracing ***as determined by structural engineer*.** Grind welds smooth and paint with rust inhibiting paint. Finished frame and components must be properly aligned, square and true.
	2. Provide adequate support of framing elements during erection to prevent racking, twisting or bowing. Lay out the exterior rated sheathing installation so all board edges are supported by metal framing (studs vertically and purlins horizontally). Cut/fit the exterior rated sheathing and add additional framing elements as required to support board edges. Stagger boards in courses to prevent continuous vertical joints and allow ⅛-3/16” (3-5mm) between sheets.
	3. Fasten the exterior rated sheathing with 7/8” (22mm) minimum length, non-rusting, self-imbedding screws for metal studs (BUILDEX® Catalog item 10-24 17/16 Wafer T3Z or equivalent). Fasten the boards every 6” (150mm) at the edges and every 8” (200mm) in the field. Stagger placement of screws at seams. Place screws no less than ⅜” (9mm), and no more than 1” (25mm), from board edges.
	4. Follow board manufacturer’s installation instructions.
	5. Compliance with design criteria and state and local building codes must approved and certified by a qualified structural engineer. Use more stringent design criteria when necessary to comply with state and local building code stiffness requirements for thin veneers.

NOTE TO SPECIFIER: The following ‘Installation Accessories’ are separated into two (2) categories; ‘Ceramic Tile’ accessories and ‘Exterior Adhered Veneer’ accessories. Edit as applicable – delete all that do not apply.

* 1. **INSTALLATION ACCESSORIES – CERAMIC TILE**

A. ***Waterproofing and Crack Isolation Membrane (Liquid-Applied):***

NOTES TO SPECIFIER:

1. Adhesives/mastics, mortars and grouts for ceramic tile, mosaics, pavers, brick and stone are not replacements for waterproofing membranes and will not prevent water penetration into occupied or storage spaces below.
2. Ceramic tile, mosaics, pavers, brick and stone installed by the thin bed method can be damaged by shrinkage related substrate cracking. Specify crack isolation membrane to reduce crack propagation into veneers or hard finishes. Do not use crack isolation membranes if substrate cracking:
3. is due to structural movement;
4. involves vertical and/or differential movement;
5. involves horizontal movement >1/8” (3mm).
6. Refer to the LATICRETE membrane product data sheet and the physical test data contained therein for information to be used by the Project Design Professional to determine suitability, placement, building code conformance and over-all construct appropriateness of a given installation assembly.

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 LATICRETE HYDRO BAN® XP 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 LATICRETE HYDRO BAN® XP 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 XP 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 LATICRETE HYDRO BAN XP 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 LATICRETE HYDRO BAN XP 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 LATICRETE HYDRO BAN XP around and over the bottom half of drain clamping ring. Cover with a second liberal coat of LATICRETE HYDRO BAN XP. When the LATICRETE HYDRO BAN XP dries, apply a bead of LATICRETE LATASIL™ where the LATICRETE HYDRO BAN XP 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 LATICRETE HYDRO BAN XP around penetration opening. Cover the first coat with a second liberal coat\* of LATICRETE® HYDRO BAN® XP. Bring LATICRETE HYDRO BAN XP up to level of tile or stone. When LATICRETE HYDRO BAN XP 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 LATICRETE HYDRO BAN XP 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 XP over the first coat. Let the top coat of LATICRETE HYDRO BAN XP 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. LATICRETE HYDRO BAN XP will dry to an olive green color when fully cured. Use additional LATICRETE HYDRO BAN XP to seal any defects.

***Movement Joints -*** Apply a liberal coat\* of LATICRETE HYDRO BAN XP, approximately 8” (200mm) wide over the areas. Then embed and loop the 6” (150mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric and allow the LATICRETE HYDRO BAN XP liquid to bleed through. Immediately apply a second coat of LATICRETE HYDRO BAN XP.

**\* Dry coat thickness is 20 – 30 mil (0.02 - 0.03” or 0.5 - 0.8mm); consumption per coat is approximately 0.01 gal/ft2 (approx. 0.4 L/m2); coverage is approximately 100 ft2 /gal (approx. 2.5 m2/ L). LATICRETE® Waterproofing/Anti-Fracture Fabric can be used to pre-treat cracks, joints, curves, corners, drains, and penetrations with LATICRETE HYDRO BAN®** **XP.**

***Protection -*** Provide protection for newly installed membrane, even if covered with a thin-bed ceramic tile, stone or brick 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.

*Use the following LATICRETE System Materials:*

***LATICRETE HYDRO BAN XP***

References:

LATICRETE Data Sheets: [36642](https://cdnmdm.laticrete.com/Datasheet/NA/60/Datasheet_NA_en_60.pdf), [10003](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/hydro_ban_xp_installation_instructions_ds10003-la-en.pdf)

LATICRETE SDS: [HYDRO BAN XP](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/hydro_ban_xp_sds_na2015_031521_final-la-en.pdf)

Health Product Declaration: [HYDRO BAN XP HPD](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/hydro-ban-xp-hpd-la-en.pdf)

UL GREENGUARD GOLD Certificate: [HYDRO BAN XP](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/300-hydro-ban-xp-greenguard-la-en.pdf)

LATICRETE Technical Data Sheets: [188](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds188.ashx), [189](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds189.ashx), [203](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds203.ashx)

1. ***Waterproofing (Sheet Membrane):***

NOTES TO SPECIFIER:

1. Adhesives/mastics, mortars and grouts for ceramic tile, mosaics, pavers, brick and stone are not replacements for waterproofing membranes and will not prevent water penetration into occupied or storage spaces below.
2. Obtain approval by local building code authority before specifying LATICRETE® HYDRO BAN® Sheet Membrane in shower pan applications.
3. Ceramic tile, mosaics, pavers, brick and stone installed by the thin bed method can be damaged by shrinkage related substrate cracking. Specify crack isolation membrane to reduce crack propagation into veneers or hard finishes. Do not use crack isolation membranes if substrate cracking:
4. is due to structural movement;
5. involves vertical and/or differential movement;
6. involves horizontal movement >1/8” (3mm).

Measure and cut all of the LATICRETE HYDRO BAN Sheet Membrane sections and Sealing Tape strips to the proper size before mixing the substrate appropriate LATICRETE thin-set.

Mix the LATICRETE® thin-set to a fairly wet consistency but still able to hold a notch. Dampen excessively dry porous surfaces in order to prevent premature drying and skinning of the thin-set. If skinning does occur remove thin-set and reapply using fresh mortar.

**Pre-Treating (Corners and Coves):** To create the watertight system, the installation process will rely on the layering of components; start with the corners: Apply thin-set mortar with a ¼”x 3/16” (6 mm x 5 mm) V-notched trowel. Press the LATICRETE HYDRO BAN® pre-formed corner firmly into the thin-set. Remove any trapped air and guarantee full adhesion to the material by spreading the thin-set from the inside of the corner out using a trowel or straightedge with rounded corners. Continue with thin-set along the floor-to-wall transition from the corner outward for the first strip of LATICRETE HYDRO BAN Sealing Tape. Overlap the corners by 2” (50 mm). Lay the tape and remove all air pockets and excess material as with the corner piece. For any sections where two strips of LATICRETE HYDRO BAN Sealing Tape will be joined, be certain to overlap the material by 2” (50 mm). Continue with these steps around the perimeter of the installation. Treat the vertical corners with the LATICRETE HYDRO BAN Sealing Tape next in the same manner as the floor-to-wall transitions were installed. Overlap the corners by 2” (50 mm).

**Pre-Treating (Penetrations):** Treat pipe penetrations and mixing valves by applying thin-set mortar with a ¼”x 3/16” (6 mm x 5 mm) V-notched trowel. Slide the appropriate collar over the pipe or mixing valve and press firmly into the thin-set. The urethane rubber will seal around the pipe or mixing valve. Remove any trapped air and guarantee full adhesion to the material by spreading the thin-set from the inside out using a trowel or straightedge with rounded corners.

**Main Application:** Important, there should not be excessive overlapping. For example, at the corner, the LATICRETE HYDRO BAN Sealing Tape should overlap the LATICRETE HYDRO BAN Preformed Corner but not the adjacent HYDRO BAN Sealing Tape. Continue the same method to install the first LATICRETE HYDRO BAN Sheet Membrane section on the wall. Start in the completed corner and work your way out from the corner to the edge of the installation. Apply the thin-set to the surface of the wall with the ¼”x 3/16” (6 mm x 5 mm) V-notched trowel. If the surface is uneven, use a square-notched trowel with a wider tooth up to 3/8” (9 mm). Be sure to comb all of the thin-set in the same direction. Install the first length of sheet membrane. It may be easiest to unroll it up the wall or in the direction that you combed the thin-set. Remember to overlap the membrane by a minimum of 2” (5 cm). Be certain to leave at least ¼” (6mm) of space from the floor. Smooth the section of LATICRETE HYDRO BAN Sheet Membrane with a flat trowel or roller from the middle towards the outside edges to assure that no air is trapped underneath. Follow the direction that the thin-set was combed onto the substrate. Use short, firm strokes to press out all of the excess thin-set and trapped air. Carefully remove or spread the excess thin-set over the seams. Apply the thin-set for the next length of LATICRETE HYDRO BAN Sheet Membrane section. Roll the next length upwards; smoothing it as it is pressed into the thin-set. If a bulge or crease appears during the unrolling, it is OK. Simply peel the section carefully away from the wall and reapply it so that it is flat. The sections are to be well-pressed; the use of a roller is recommended but this can also be accomplished with a flat trowel. Squeeze out any extra thin-set at the seams; remove the excess or spread it uniformly down the seam. The remaining lengths can now be installed in this same manner. Best practice; sections of LATICRETE® HYDRO BAN® Sheet Membrane should be butt- jointed and the seam between the HYDRO BAN Sheet Membrane sections should be covered with LATICRETE HYDRO BAN Sealing Tape installed with the appropriate thin-set. Make sure that the LATICRETE HYDRO BAN Sealing Tape overlaps each LATICRETE HYDRO BAN Sheet Membrane section by a minimum of 2” (5 cm). The floor should be the last section installed. NOTE: Sections of LATICRETE HYDRO BAN Sheet Membrane may also be shingled (overlapped) during installation without the need for LATICRETE HYDRO BAN Sealing Tape. The top section must overlap a minimum of 2" (5cm) onto the bottom section of LATICRETE HYDRO BAN Sheet Membrane. If the LATICRETE HYDRO BAN Sheet Membrane is damaged after installation apply a patch of LATICRETE HYDRO BAN Sheet Membrane installed with the appropriate thin-set. The patch must overlap the damaged area by a minimum of 2” (5 cm). Tiling can begin immediately after installation when a flood test is not required.

**Clamping Ring Drains:**When installing LATICRETE HYDRO BAN Sheet Membrane with a clamping ring type drains with weepers as per ASME A112.6.3, lay the LATICRETE HYDRO BAN Sheet Membrane over the top of the drain and cut an x where each bolt will penetrate the membrane. Cut a hole in the membrane to allow the drain grate to be threaded into the clamping ring. (Use of a fabric circle cutter is recommended). Install the LATICRETE HYDRO BAN Sheet Membrane, making sure to align the previously cut holes for the bolts and drain throat. Ensure that the weep holes are not blocked. Apply bead of LATICRETE LATASIL**™** to the clamping body just outside of the bolts, place clamping ring into position and tighten bolts. Check to make sure that weep holes are not plugged by any material.

**HYDRO BAN Bonding Flange Drains:** Follow the instructions in [DS 035.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0350_hydro-ban-bonding-flange-drains.ashx) for the installation of the LATICRETE® HYDRO BAN® Bonding Flange Drain in either a bonded or unbonded mortar bed. When the mortar is cured enough to walk on, prime the top of the LATICRETE HYDRO BAN Bonding Flange Drain, to the first 90 degree radius, and the adjusting ring with one coat of LATICRETE HYDRO BAN XP. Once the LATICRETE HYDRO BAN XP is dried to the touch the LATICRETE HYDRO BAN Sheet Membrane can be installed over it using a LATICRETE® polymer fortified thin-set. Insure that the LATICRETE HYDRO BAN Sheet Membrane extends to the first 90 degree radius of the LATICRETE HYDRO BAN Bonding Flange Drain. Apply thin-set mortar with a 1/4” x 3/16” (6mm x 5mm) V-notched trowel. Press the LATICRETE HYDRO BAN Sheet Membrane firmly into the adhesive. Remove any trapped air and guarantee full adhesion to the material by spreading the adhesive from the inside out using a trowel or straightedge with rounded corners. The adjusting ring is installed with a polymer fortified thin-set when installing the title in order to line up the grate with the tile.

**HYDRO BAN Linear Drains:** Follow the instructions in [DS 034.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds-340.ashx) for the installation of the HYDRO BAN Linear Drain in either a bonded or unbonded mortar bed. When the mortar is cured enough to walk on, prime the top of the LATICRETE HYDRO BAN Linear Drain flange, to the first 90 degree radius. Once the LATICRETE® HYDRO BAN® XP is dried to the touch the LATICRETE HYDRO BAN Sheet Membrane can be installed over it using a LATICRETE polymer fortified thin-set. Apply thin-set mortar with a ¼”x3/16” (6 mm x 5 mm) V-notched trowel. Press the LATICRETE HYDRO BAN Sheet Membrane firmly into the adhesive. Remove any trapped air and guarantee full adhesion to the material by spreading the adhesive from the inside out using a trowel or straightedge with rounded corners.

**Flood Testing:** Allow adhesive to cure fully before flood testing, a minimum of 24 hours after final cure at 70°F (21°C) and 50% RH. Cold and/or wet conditions will require a longer curing time.

**Control Joints:** Ceramic tile, stone and brick installations must include sealant filled joints between the ceramic tile, stone or brick which is over any control joints in the substrate. However, the sealant filled joints can be offset horizontally by as much as one tile width from the substrate control joint location to coincide with the grout joint pattern.

**Movement Joints:** Ceramic tile, stone and thin brick installations must include expansion joints at coves, corners, other changes in substrate plane and over any expansion joints in the substrate. Expansion joints in ceramic tile, stone or brickwork are also required at perimeters, at restraining surfaces, at penetrations and at the intervals described in the Tile Council of North America, Inc. (TCNA) Handbook Installation Method EJ171. Use LATICRETE LATASIL and backer rod.

*Use the following LATICRETE System Materials:*

***LATICRETE HYDRO BAN Sheet Membrane***

References:

LATICRETE Data Sheets: [041.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0410_hydro-ban-sheet-membrane.ashx)

1. ***LATICRETE HYDRO BAN Board:***

**WALLS:**

***Fastening (Wood Studs) -*** Nominal Dimensions – 2” x 4” (50 x 100mm) minimum with maximum span of 16” (406mm) on-center. Use a minimum of ½” (12mm) LATICRETE HYDRO BAN Board, for 19.2” (488mm) on-center stud spacing use a minimum of 5/8” (16mm) board. Fasten boards directly to studs using either LATICRETE HYDRO BAN Board 1 ¼” (32mm) tab washer and the appropriate length LATICRETE HYDRO BAN Board screw for the thickness of the LATICRETE HYDRO BAN Board. Fasteners should be spaced 8” on-center (200mm). All fastener heads to be countersunk flush with surface of the board. Where two boards meet, the LATICRETE HYDRO BAN Board Tab Washer and LATICRETE HYDRO BAN Board Screw are to span the interface.

***Fastening (Steel Studs) -*** Minimum thickness – 25 gauge with maximum span of 16” on-center (406mm). Use a minimum of ½” (12mm) LATICRETE® HYDRO BAN® Board, for 19.2” (488mm) on-center stud spacing use a minimum of 5/8” (16mm) board. Fasten boards directly to studs using the LATICRETE HYDRO BAN Board 1 ¼” (32mm) tab washer and 1 5/8” (41mm) LATICRETE HYDRO BAN Board screw. Fasteners should be spaced 8” on-center (200mm). All washers are to be countersunk flush with surface of the board. Where two boards meet, the LATICRETE HYDRO BAN Board tab washer and LATICRETE HYDRO BAN Board screw are to span the interface.

***Installation (Option 1)*:** The following steps must be followed to maintain the waterproof integrity of LATICRETE HYDRO BAN Board. Beginning at the bottom of the wall, install LATICRETE HYDRO BAN Board to the wall studs by using the appropriate fastener and spacing outlined in the fastening section above. For tub walls and installations with LATICRETE HYDRO BAN Pre-Sloped Shower Pans first apply a bead of LATICRETE HYDRO BAN Adhesive & Sealant along the top edge of the tub or in the rabbet joint for the LATICRETE HYDRO BAN Pre-Sloped Shower Pans and then install the LATICRETE HYDRO BAN Board. For a waterproof system using LATICRETE HYDRO BAN XP embed 2” (50mm) fiberglass mesh with LATICRETE HYDRO BAN XP liquid waterproofing membrane in all panel joints. All fasteners must be completely covered with LATICRETE HYDRO BAN XP liquid waterproofing membrane to form a seal. Allow 1st coat to dry and apply 2nd coat over all joints, corners and fasteners.

***Installation (Option 2):*** Fasten boards in same manner as outlined in OPTION 1. For tub walls and installations with LATICRETE HYDRO BAN Pre-Sloped Shower Pans first apply a bead of LATICRETE HYDRO BAN Adhesive & Sealant along the top edge of the tub or in the rabbet joint for the LATICRETE HYDRO BAN Pre-Sloped Shower Pans and then install the LATICRETE HYDRO BAN Board. To create a watertight system using LATICRETE HYDRO BAN Sealing Tape, Inside or Outside Corners and Collars start with the corners. Apply a suitable LATICRETE polymer fortified thin-set mortar with a ¼” x 3/16” (6mm x 5mm) V-notched trowel. Press the pre-formed corner firmly into the adhesive. Remove trapped air and guarantee full adhesion to the material by spreading the adhesive from the inside out using a trowel or straightedge with rounded corners. Continue with thin-set along the floor-to-wall transition from the corner outward for the first strip of LATICRETE HYDRO BAN Sealing Tape. Overlap the corners by a minimum of 2” (50mm). Lay the LATICRETE HYDRO BAN Sealing Tape and remove all air pockets and excess material as with the corner piece. For any sections where two strips of LATICRETE HYDRO BAN Sealing Tape will be joined, be certain to overlap the material by 2” (50mm). Continue with these steps around the perimeter of the installation. Treat the vertical corners for the LATICRETE HYDRO BAN Sealing Tape next in the same manner as the floor-to-wall transitions were installed. Overlap the corners by a minimum of 2” (50mm). Treat pipe penetrations and mixing valves by applying thin-set mortar with a ¼” x 3/16” (6mm x 5mm) V-notched trowel. Slide the appropriate LATICRETE HYDRO BAN Collar over the pipe or mixing valve and press firmly into the adhesive. The urethane rubber will seal around the pipe or mixing valve. Remove any trapped air and guarantee full adhesion to the material by spreading the adhesive from the inside out using a trowel or straightedge with rounded corners. Fastener penetrations can be covered with LATICRETE HYDRO BANSealing Tape using a LATICRETE polymer fortified thin-set. Important, there should not be excessive overlapping. For example, at the corner, the LATICRETE HYDRO BAN Sealing Tape that leaves the corner and protects the floor-to-wall transitions should overlap with the pre-formed corner piece, but not the pre-formed corner piece and the adjacent LATICRETE HYDRO BAN Sealing Tape.

**CEILINGS:**

Framing members not exceed 16” on-center (406mm). Use a minimum of ½” (12mm) thick LATICRETE HYDRO BAN Board. Ensure that edges of LATICRETE HYDRO BAN Board are continuously supported. Fasten boards as outlined in FASTENING section for WALL applications.

**GENERAL (Floors):** Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile installations or L/480 for thin bed stone installations. The tile size should be at least 8” x 8” (200mm x 200mm). Architect, builder or design professional must specify location of control joints. Also see TCNA Handbook, Installation Method EJ171-Movement Joint Design Essentials, for industry guidelines.

***Fastening (Wood Floor):*** Framing:Maximum 16” (406mm) on-center joist spacing.

**Subfloor:** Minimum thickness 5/8” (16mm) exterior grade plywood or OSB fastened and glued firmly to joists as per TCNA Handbook, Installation Method F175 Cementitious Coated Foam Backer Board. Fasten boards directly to subfloor using the LATICRETE® HYDRO BAN® Board 1 ¼” (32mm) tab washer and 1 5/8” (41 mm) LATICRETE HYDRO BAN Board screw. Fasteners should be spaced a maximum of 8” (203mm) on-center. All fastener heads should be countersunk flush with surface of the board. Where two boards meet the LATICRETE HYDRO BAN Board tab washer and LATICRETE HYDRO BAN Board screw are to span the interface.

***Installation:*** Apply a setting bed of LATICRETE polymer fortified mortar over subfloor with a ¼” (6mm) square notched trowel combing mortar into a ribbed bed. All boards to be laid with staggered joints. Fasten boards as outlined in the FASTENING section above. Fill all joints with a LATICRETE polymer fortified mortar and embed 2” (50mm) fiberglass mesh cement board tape in dry areas.

*Note: LATICRETE HYDRO BAN Board is completely waterproof. If the area below the backer board must be kept dry, all fastener penetrations and joints must be sealed with* LATICRETE *HYDO BAN XP liquid waterproof membrane.*

**CONCRETE FLOOR:**

***Installation:*** Concrete must be fully cured and clean. Apply a setting bed of LATICRETE polymer fortified mortar over concrete floor with a ¼” (6mm) square notched trowel combing mortar into a ribbed bed. Depressions to be filled with mortar. Make certain there are no voids beneath panel and that it is supported solidly. All boards to be laid with staggered joints. Allow mortar to harden before taping joints. Fill all joints with a LATICRETE polymer fortified mortar and embed 2” (50mm) fiberglass mesh cement board tape in dry areas. *Note: LATICRETE HYDRO BAN Board is completely waterproof. If the area below the backer board must be kept dry, all fastener penetrations and joints must be sealed with* LATICRETE *HYDO BAN XP liquid waterproof membrane or* LATICRETE *HYDRO BAN Sealing Tape and a LATICRETE polymer fortified thin-set.*

**COUNTERTOPS:**

***Fastening -*** Apply a continuous bead of LATICRETE HYDRO BAN Adhesive & Sealant to the tops of the vertical counter top supports. Adhere the LATICRETE HYDRO BAN Board to top of the counter. Press in place removing any excess LATICRETE HYDRO BAN Adhesive & Sealant.

***Installation -*** The following steps must be followed to maintain the waterproof integrity of LATICRETE HYDRO BAN Board. Cut the LATICRETE HYDRO BAN Board to fit the counter top. Leave the front end of the counter recessed in order to apply a ¼” (6mm) thick strip of LATICRETE HYDRO BAN Board to the front edge using the LATICRETE HYDRO BAN Adhesive & Sealant. Fasten to the counter as described above. Before installing adjacent boards, apply a bead of LATICRETE HYDRO BAN Adhesive & Sealant to the edges of the first board. Install next board as outlined above. All boards must be fitted tightly together allowing sealant to ooze from joint. All excess sealant to be spread thin ensuring a continuous seal at the joint. Fastener penetrations can be covered with LATICRETE HYDRO BAN Sealing Tape and a LATICRETE polymer fortified thin-set. Wrap the front edge with HYDRO BAN Sealing Tape using a LATICRETE polymer fortified thin-set. Using a reciprocating saw cut out the hole for the sink. Apply LATICRETE HYDRO BAN Adhesive & Sealant around the cut out and insert the sink. When dry the counter can be fully tiled.

**CURBS, SEATS AND BENCHES:**

***Installation -*** Measure, cut and dry fit all pieces from 2” (50mm) LATICRETE HYDRO BAN Board before installing. All seat or bench perimeters should be supported by 2” (50mm) LATICRETE HYDRO BAN Board installed vertically. Use 254 Platinum when assembling the CURBS, seats and benches. Spacing between vertical supports should not exceed 16” (406mm). When installing corner seats, the appropriate board edges to be mitered for a tighter fit. Bench and seat supports can be cut on an angle to create a slope for the seat top. All boards must be fitted tightly together allowing the 254 Platinum to ooze from joint. All excess adhesive to be spread thin ensuring a continuous seal at the joint. Exposed edges can be wrapped with alkaline resistant tape and 254 Platinum thin-set. When the thin-set is dry, waterproof using LATICRETE HYDRO BAN XP, allowing the first coat to dry completely before the second coat is added. All coves and corners can be treated with alkaline resistant tape and a 254 Platinum thin-set. When the thin-set is dry waterproof using LATICRETE HYDRO BAN XP allowing the first coat to dry completely before the second coat is applied.

**TUB SURROUNDS AND PLATFORMS:**

***Installation -*** When installing LATICRETE® HYDRO BAN® Board to tub surrounds and platforms choose the appropriate thickness required for the application. LATICRETE HYDRO BAN Board must be attached to the frame, which is load bearing and fully supported, and be installed over the lip of the tub. Follow fastening and installation instructions above for Walls.

*Use the following LATICRETE System Materials:*

***LATICRETE HYDRO BAN Board***

References:

LATICRETE Data Sheets: [040.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds-400.ashx)

1. ***Metal Edge Trim*** LATICRETE Profiles & Trims fulfill a wide range of needs including edge protection, floor transitions, decorative and more. Installed indoors and outdoors, they can be used with multiple floor coverings such as tile and stone, terrazzo, wood and LVT. Create unique designs with a selection of finishes and colors in kitchens and bathrooms, commercial and residential applications, and everything in between.\

**Application:**

* + 1. Select the correct size of profile according to the tile thickness.
		2. Prior to installing the tile, make sure the profiles, corners, and connectors are accurately measured and dry-fitted. Measure and mark the profile to the correct length before cutting.
		3. Apply tile adhesive with a margin or notched trowel to the area where the profile will be installed.
		4. Firmly press the profile into the adhesive, allowing the adhesive to flow through octagonal cutouts in the mounting leg.
		5. Adjust and straighten the profile if necessary. Using an appropriate notched trowel and adhesive for the tile to be installed, add more adhesive over the mounting leg and surface fully embedding the mounting leg of the profile.
		6. Press the tile firmly into the adhesive to achieve full coverage, ensuring the profile and tile are aligned and flush. Leave a 1/16" to 1/8" gap between the profile and tile for grouting.
		7. Continue tiling the rest of the area. Immediately after installing the profiles and tile, clean the surface of the profile to remove any residual adhesive or cement material with clean fresh water and a sponge or microfiber cloth.

*Use the following LATICRETE System Materials:*

***LATICRETE Profiles & Trims***

References:

Floor Method: [Floor Method](https://www.laticrete.com/en/our-products/profiles-and-trims/profiles-for-floor-applications)

Wall or countertop method: [Wall or countertop method](https://www.laticrete.com/en/our-products/profiles-and-trims/profiles-for-wall-and-countertop-applications)

Stair Method: [Stair Method](https://www.laticrete.com/en/our-products/profiles-and-trims/profiles-for-stair-applications)

Method With Cove Base: [Method With Cove Base](https://www.laticrete.com/en/our-products/profiles-and-trims/profiles-for-cove-applications)

Ej-171 And All Floor and Wall Methods: [Ej-171 And All Floor and Wall Methods](https://www.laticrete.com/en/our-products/profiles-and-trims/movement-and-expansion-joints)

**3.5 INSTALLATION ACCESSORIES – EXTERIOR ADHERED VENEERS**

1. Weather Resistant Barrier (WRB) or equivalent - 2 layers or as detailed and specified by project architect

1. Install as per WRB manufacturer’s written installation instructions

1. ***Air and Water Barrier (exterior adhered veneers):***

 NOTE TO SPECIFIER:

1. Specify LATICRETE MVIS™ Air & Water Barrier, in lieu of LATICRETE HYDRO BAN, for all exterior tiled façades.
2. Adhesives, mortars and pointing mortars for thin brick, mosaics, pavers, masonry veneer, and stone are not replacements for waterproofing membranes or air and water barriers and will not prevent penetration by windblown rain and other moisture through façades/walls.

Install the vapor permeable air and water barrier in compliance with current revisions of manufacturer’s written installation instructions. 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 LATICRETE MVIS Air & Water Barrier before using.

**Pre-Treat Cracks and Joints** - Install sheathing panels and treat joints in accord with the respective sheathing panel manufacturer’s installation instructions, including installation of board joint treatment. Pack any gaps around pipes, lights or other penetrations with LATAPOXY® Waterproof Flashing Mortar and allow to harden. Treat substrate joints and seams up to 1/8” (3 mm) by applying a liberal coat^ of LATICRETE MVIS Air & Water Barrier approximately 8” (200 mm) wide over seam using a paint roller (heavy napped), brush or trowel. While LATICRETE® MVIS™ Air & Water Barrier is still wet embed 6” (150 mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric pressing the fabric in firmly so that the LATICRETE MVIS Air & Water Barrier liquid bleeds through the fabric, then immediately apply another liberal coat^ of LATICRETE MVIS Air & Water Barrier liquid over the fabric using a paint roller, brush or trowel. For substrate joints and seams greater than 1/8” (3 mm); fill seams to a smooth finish with a LATICRETE Polymer Fortified Veneer Mortar. Allow mortar to set 24 hours, then treat seams by applying a liberal coat^ of LATICRETE MVIS Air & Water Barrier approximately 8” (200 mm) wide over seam. While LATICRETE MVIS Air & Water Barrier is still wet embed 6” (150mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric pressing the fabric in firmly so that the LATICRETE MVIS Air & Water Barrier liquid bleeds through the fabric, then immediately apply another liberal coat^ of LATICRETE MVIS Air & Water Barrier liquid over the fabric. LATICRETE MVIS Air & Water Barrier will dry to a uniform olive green color when it’s dry to touch.

**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 MVIS Air & Water Barrier 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 LATICRETE MVIS Air & Water Barrier approximately 8” (200mm) wide over substrate cracks, cold joints, and control joints using a paint brush or heavy napped paint roller.

**Movement Joint Loop (Slip Joint) Treatment *-*** Apply a liberal coat^ of LATICRETE MVIS Air & Water Barrier, approximately 8” (200 mm) wide over the areas. Then immediately embed and loop the 6” (152 mm) wide LATICRETE Waterproofing/Anti-Fracture Fabric into the substrate movement joint and allow to bleed through. Then top coat with a second liberal coat of LATICRETE MVIS Air & Water Barrier liquid fully encapsulating the LATICRETE Waterproofing/Anti-Fracture Fabric. Repeat process to ensure that all movement joints receive two (2) layers of LATICRETE Waterproofing/Anti-Fracture Fabric.

**Main Application *-*** Allow any pre-treated areas to dry to the touch. Apply a liberal coat^ of LATICRETE MVIS Air & Water Barrier using a paint roller (heavy napped) or paint brush over substrate including pre-treated areas and allow to dry to the touch approximately 1–2 hours at 70°F (21°C) and 50% RH. Apply a second liberal coat^ of LATICRETE MVIS Air & Water Barrier over the first coat of LATICRETE MVIS Air & Water Barrier. Let topcoat dry to the touch, approximately 1–2 hours at 70°F (21°C) and 50% RH. When last coat has dried to the touch, inspect final surface for pinholes, voids, thin spots or other defects and re-apply as necessary. LATICRETE MVIS Air & Water Barrier will dry to a uniform olive green color when it’s dry to touch. Use additional LATICRETE MVIS Air & Water Barrier to seal pinholes, voids, thin spots or other defects and re-apply as necessary. Bring main application of LATICRETE Air and Water Barrier up to all penetrations through the membrane.

**NOTE:** Proper integration involves transitioning between different materials. LATAPOXY® Waterproof Flashing Mortar may be required between some connections, protrusions, details, joints and transitions. Where transitioning between different materials terminate the LATICRETE MVIS Air & Water Barrier at the edge of the transition, allow main application to dry, then apply LATAPOXY Waterproof Flashing Mortar with a trowel overlapping both sides of the transition by at least 2” to 4” [50mm to 100mm] (see Illustration 1,2,4 & 7).

**\* Dry coat thickness is 20 – 30 mil (0.02 - 0.03” or 0.5 - 0.8mm); consumption per coat is approximately 0.01 gal/ft2 (approx. 0.4 L/m2); coverage is approximately 100 ft2 /gal (approx. 2.5 m2/ L). LATICRETE Waterproofing/Anti-Fracture Fabric can be used to pre-treat cracks, joints, curves, corners, drains, and penetrations with LATICRETE MVIS Air & Water Barrier™.**

**Spray Application of LATICRETE MVIS Air & Water Barrier -**Follow all installation and surface preparation requirements outlined in this document and TDS 410M “Spraying LATICRETE MVIS Air & Water Barrier”. The sprayer being used for the application of LATICRETE MVIS Air & Water Barrier should be capable of producing a maximum of 3300 psi (22.8 MPa) with a flow rate of 0.95 to 1.6 GPM (3.6 to 6.0 LPM) using a 0.521 or a 0.631 reversible tip. Keep the unit filled with LATICRETE MVIS Air & Water Barrier to ensure continuous application of liquid. The hose length should not exceed 100’ (30 m) in length and 3/8” (10 mm) in diameter.

Apply a continuous LATICRETE® MVIS™ Air & Water Barrier film with an overlapping spray^. The wet film has a sage green appearance and dries to a darker olive green color. When the first coat has dried to a uniform olive green color, approximately 45 to 90 minutes at 70°F (21°C), visually inspect the coating for any voids or pinholes. Fill any defects with additional material and apply the second coat^ at right angles to the first. The wet film thickness should be checked periodically using a wet film gauge.

Check application thickness with a wet film gauge periodically as the LATICRETE MVIS Air & Water Barrier is being applied to ensure that the appropriate thickness and coverage is achieved. Bounce back and overspray will consume more product. To achieve the required film thickness, the coating must be free from pinholes and air bubbles. Bring main application of LATICRETE Air and Water Barrier up to all penetrations through the membrane. Do not back roll the spray applied coating. Allow the LATICRETE MVIS Air & Water Barrier to cure in accord with the instructions in this document and TDS 410M prior to the installation of finish materials. It is important to note that areas not scheduled to receive the LATICRETE MVIS Air & Water Barrier should be taped off and protected from any potential overspray.

**Protection -**Provide protection for newly installed membrane, even if covered with a thin-bed stone, masonry veneer, or thin brick 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.

*Use the following LATICRETE System Materials:*

***LATICRETE MVIS Air & Water Barrier***

References:

LATICRETE Data Sheets: [661.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6610_mvis-air-water-barrier.ashx), [661.5](https://cdn.laticrete.com/~/media/installation_information/ds-6615.ashx)

LATICRETE SDS: [Air & Water Barrier](https://cdn.laticrete.com/~/media/safety_datasheets/mvis-air--water-barrier-sds_us-english.ashx)

Health Product Declaration: [A&WB](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-air--water-barrier-hpd.ashx)

UL GreenGuard Gold Certificate: [A&WB](http://certificates.greenguard.org/default.aspx?id=23980&t=cs&)

LATICRETE Technical Data Sheets: [177M](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds177m.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [410M](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds410m.ashx)

NOTE TO SPECIFIER: The following ‘Installation’ sections are separated into two (2) categories; ‘Ceramic Tile’ installation and ‘Exterior Adhered Veneer’ installation. Edit as applicable – delete methods that do not apply.

* 1. **INSTALLATION - EXTERIOR ADHERED VEENERS**

NOTES TO SPECIFIER:

1. Exterior adhered veneer installation techniques can be performed in several ways depending upon the finish type. Specifier to select one of the following installation methods, based on finish type(s) project specific requirements.
2. The optimum conditions for installation of direct adhered cladding are temperatures between 60° and 80°F (16° and 27°C), with 50% relative humidity and minimal wind. However, these conditions are atypical, so provisions must be made for variations in climatic conditions.
3. Protection and corrective action primarily requires temporary enclosures or tarpaulins prior to, during, and immediately after installation to shield from rain. If prolonged exposure occurs, surfaces that appear dry may be saturated internally and require testing to determine suitability of certain overlay substrates, membranes or adhesives. Protection applies to the substrate, the installation of adhesives and joint grouts, post-installation (rain and temperature protection) until suitable cure, and also the storage and handling of the cladding material. For every 18°F (10°C) above 70°F (21°C) cementitious and epoxy materials cure twice as fast. For every 18°F (10°C) below 70°F (21°C) cementitious and epoxy materials take twice as long to cure.
4. Tent / shade and heat areas that will be subjected to the elements and /or freezing temperatures during installation and cure periods.
5. In addition to installing waterproofing membrane where required, provide proper architectural detailing (water-stops, flashings, weeps, etc.) to conduct water to the building exterior, especially at critical areas such as window heads/sills, penetrations and parapet walls
6. Consult LATICRETE [TDS 176M](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds176m.ashx) “Hot Weather Veneer Installations”, available at [www.laticrete.com](http://www.laticrete.com), for more information.
7. Consult LATICRETE [TDS 175M](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds175m.ashx) “Cold Weather Veneer Installation”, available at [www.laticrete.com](http://www.laticrete.com), for more information.
8. ***Pre-float Method (exterior adhered veneers):***  Over clean, dimensionally stable and sound concrete and masonry substrates, apply latex-portland cement thick-bed mortar as scratch/leveling coat in compliance with current revision of Masonry Veneer Manufacturer’s Association (MVMA) “**Installation Guide for Adhered Concrete Masonry Veneer**” and/or veneer manufacturer’s specific written installation instructions. Float surface of scratch/leveling coat plumb, true and allow mortar to set until firm. For installation of thin brick, masonry veneer, and stone, follow appropriate “***Exterior Adhered Veneers Method”*** for ***“Stacked Veneer” or “Pointed / Grouted”*** veneer installations.

*Use the following LATICRETE® System Materials:*

***LATICRETE MVIS™ Premium Mortar Bed***

References:

LATICRETE Data Sheets: [263.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2630_mvis-premium-mortar-bed.ashx)

LATICRETE SDS: [Premium Mortar Bed](https://cdn.laticrete.com/~/media/safety_datasheets/mvis-premium-mortar-bed-sds_us-english.ashx)

Health Product Declaration: [Premium Mortar Bed HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-premium-mortar-bed-hpd.ashx)

UL GREENGUARD GOLD Certificate: [Premium Mortar Bed](http://certificates.greenguard.org/default.aspx?id=18531&t=cs&)

1. ***Lath & Plaster Method (exterior adhered veneers):*** Install cleavage membrane/water resistive barrier complying with current revision of ASTM D226 (No. 15 Type 1), 2 separate layers of cleavage membrane/water resistive barrier complying with ICC-ES AC38 or a combination of both using corrosion resistant fasteners complying with ASTM C1063 Sec. 7.10.2. Install metal lath complying with the local building code requirements and/or 2.5 lb. (1.1 kg) or 3.4 lb. (1.5 kg) diamond mesh lath (ASTMC847-10, ASTMC1780). Apply latex-portland cement mortar as scratch/leveling coat over wire lath, concrete or masonry in compliance with current revision of Masonry Veneer Manufacturer’s Association (MVMA) “**Installation Guide for Adhered Concrete Masonry Veneer**” and/or veneer manufacturer’s specific written installation instructions and/or ASTM C1780 Standard Practice for Installation Methods for Adhered Manufactured Stone Masonry Veneer. Float surface of scratch/leveling coat plumb, true and allow mortar to set until firm. For installation of thin brick, masonry veneer, or stone follow the appropriate ***“Exterior Adhered Veneers”*** installation method for ***“Stacked Veneer” or “Pointed / Grouted”*** veneer installations.

 *Use the following LATICRETE System Materials:*

***LATICRETE® MVIS™ Premium Mortar Bed***

 References:

LATICRETE Data Sheets: [263.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2630_mvis-premium-mortar-bed.ashx)

LATICRETE SDS: [Premium Mortar Bed](https://cdn.laticrete.com/~/media/safety_datasheets/mvis-premium-mortar-bed-sds_us-english.ashx)

Health Product Declaration (HPD): [Premium Mortar Bed HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-premium-mortar-bed-hpd.ashx)

UL GREENGUARD GOLD Certificate: [Premium Mortar Bed](http://certificates.greenguard.org/default.aspx?id=18531&t=cs&)

1. ***Exterior Adhered Veneers (Tile Council of North America / Marble Institute of America Methodology):*** 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, 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 MVIS Hi-Bond Veneer Mortar***

References:

LATICRETE Data Sheet: [246.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2460_mvis-hi-bond-veneer-mortar.ashx)

LATICRETE SDS: [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/mvis-hi-bond-veneer-mortar--sds_us-english.ashx)

Health Product Declaration (HPD): [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-hi-bond-veneer-mortar-hpd.ashx)

Product Specific (Type III) Environmental Product Declaration (EPD): [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD Gold Certificate: [Hi-Bond Veneer Mortar](http://certificates.greenguard.org/default.aspx?id=18532&t=cs&)

LATICRETE Technical Data Sheets: [105](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds105.ashx?la=en), [126](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds126.ashx?la=en), [195](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds195.ashx?la=en), [208](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds208.ashx?la=en)

1. ***Exterior Adhered Veneers (Pointed/Grouted - Masonry Veneer Manufacturer’s Association Methodology):*** Moisten the back of each veneer unit and the top of the scratch coat so the surfaces appear damp but are free of standing water. Install masonry veneer adhesive mortar in compliance with current revisions of Masonry Veneer Manufacturer’s Association (MVMA) “**Installation Guide for Adhered Concrete Masonry Veneer**” and/or veneer manufacturer’s specific written installation instructions. Use the appropriate installation tools to ensure proper bedding of veneer unit. Work the masonry veneer adhesive mortar into good contact with the back of the veneer unit making sure the entire unit is buttered to a nominal ½” (12mm) thickness. DO NOT COVER JUST THE PERIMETER! Buttered masonry veneer units should be firmly worked onto the scratch coat and slid slightly back and forth or with a slight rotating motion. Allow installation to set until firm. Clean excess latex portland cement mortar from masonry veneer or stone face and joints between pieces. Installing masonry veneer from the top down will minimize cleanup requirements.

*Use the following LATICRETE® System Materials:*

***LATICRETE MVIS™ Hi-Bond Veneer Mortar***

References:

LATICRETE Data Sheet: [246.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2460_mvis-hi-bond-veneer-mortar.ashx)

LATICRETE SDS: [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/mvis-hi-bond-veneer-mortar--sds_us-english.ashx)

Health Product Declaration (HPD): [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-hi-bond-veneer-mortar-hpd.ashx)

Product Specific (Type III) Environmental Product Declaration (EPD): [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD Gold Certificate: [Hi-Bond Veneer Mortar](http://certificates.greenguard.org/default.aspx?id=18532&t=cs&)

LATICRETE Technical Data Sheets: [105](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds105.ashx?la=en), [126](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds126.ashx?la=en), [195](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds195.ashx?la=en), [208](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds208.ashx?la=en), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Exterior Adhered Veneers (Stacked Veneer):*** Moisten the back of each veneer unit and the top of the scratch coat so the surfaces appear damp but are free of standing water. Install masonry veneer adhesive mortar in compliance with current revisions of Masonry Veneer Manufacturer’s Association (MVMA) “**Installation Guide for Adhered Concrete Masonry Veneer**” and/or veneer manufacturer’s specific written installation instructions. Use the appropriate installation tools to ensure proper bedding of veneer unit. Work the masonry veneer adhesive mortar into good contact with the back of the veneer unit making sure the entire unit is buttered to a nominal ½” (12mm) thickness. DO NOT COVER JUST THE PERIMETER! Buttered masonry veneer units should be firmly worked onto the scratch coat and slid slightly back and forth or with a slight rotating motion. Allow installation to set until firm. Clean excess latex portland cement mortar from masonry veneer or stone face and joints between pieces. Tight fitted masonry veneer should be applied from the corners toward the middle of the wall, and from the bottom toward the top of the wall.

*Use the following LATICRETE System Materials:*

***LATICRETE® MVIS™Hi-Bond Veneer Mortar***

References:

LATICRETE Data Sheet: [246.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2460_mvis-hi-bond-veneer-mortar.ashx)

LATICRETE SDS: [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/mvis-hi-bond-veneer-mortar--sds_us-english.ashx)

Health Product Declaration (HPD): [Hi-Bond Veneer Mortar](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-hi-bond-veneer-mortar-hpd.ashx)

Product Specific (Type III) Environmental Product Declaration (EPD): [Cement Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD Gold Certificate: [Hi-Bond Veneer Mortar](http://certificates.greenguard.org/default.aspx?id=18532&t=cs&)

LATICRETE Technical Data Sheets: [105](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds105.ashx?la=en), [126](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds126.ashx?la=en), [195](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds195.ashx?la=en), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [208](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds208.ashx?la=en)

1. ***Grouting or Pointing (Exterior Adhered Veneers):***

NOTE TO SPECIFIER: Specify grout / pointing mortar color for each type/color of thin brick, masonry veneer, and stone:

***1. Pointing Mortar (for joints up to ½” (12mm):*** Allow thin brick, masonry, and stone installations 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. Surface temperature must be between 40-90° F (4-32°C). Use 2 quarts (1.9 L) of clean potable water for 25 lb. (11.4 kg) of LATICRETE® MVIS™ Premium Pointing Mortar. Place water in a clean mixing container and add mortar slowly. Mix with a slow speed mixer to a smooth stiff consistency. Allow mortar to slake for 5 minutes. Remix mortar*.* Pointing mortar/grout may be installed using a grout bag, filling the joints to the desired depth, ensuring the mortar is forced into all voids. The curing time will can vary significantly with temperature and humidity. Once applied allow to firm to “thumbprint” hardness, trowel, rake and/or dry, soft bristled brush to the desired finish.

*Use the following LATICRETE System Materials:*

***LATICRETE MVIS Premium Pointing Mortar***

References:

LATICRETE Data Sheets: [274.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2740_mvis-premium-pointing-mortar.ashx)

LATICRETE SDS: [Premium Pointing](https://cdn.laticrete.com/~/media/safety_datasheets/mvis-premium-pointing-mortar-sds_us-english.ashx)

Health Product Declaration: [Premium Pointing Mortar](https://cdn.laticrete.com/~/media/health-product-datasheets/mvis/mvis-premium-pointing-mortar-hpd.ashx)

Environmental Product Declaration: [Grout EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-grout-for-tile-and-stone-installation.ashx)

LATICRETE Technical Data Sheets: [201](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds201.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [400](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds400.ashx)

1. ***Waterproofing / Flashing:*** To be designed and detailed by project architect / engineer. The function of wall flashing, or through-wall flashing, is to divert moisture which may penetrate the exterior face of the facade, or divert moisture which may condense within the wall from water vapor migration to or from the interior spaces. Flashings are commonly used at changes in configuration of the facade, and between different components of the wall. Typical locations requiring flashing are at the intersection of roof and wall assemblies, under roof parapet and wall copings, over window and door openings, under window sills, at shelf or relieving angles, and at bases of hollow or cavity walls. Flashings must always turn up against the area or material which is being protected in order to prevent water penetration. Provision must be made to divert any trapped water back to the outside and away from the face of the building facade. This is commonly done by placing weep holes, tubes or absorbent wicks from 24” – 33” (610 – 838mm) at the base of the flashing. Flashings must form a drip edge and extend a minimum of 3/8” (10mm) beyond the face of the facade to prevent water from dripping down the face of the facade. Check local building code for proper design, placement and implementation of flashing and weep systems. Copings, which protect the top of a parapet wall from water penetration, must be flashed, at a minimum, at the joints between the coping material (metal, stone, ceramic tile, pre-cast concrete), but preferably continuous along and beneath the entire length of the coping. Flashings which cannot be adhered or imbedded in the wall construction are either attached to reglets, which are pre-fabricated and pre-cast into the wall assembly, or attached to the wall assembly with mechanical attachments and sealed with sealants. In selecting a flashing, it is very important to verify compatibility of metals used in the window frame and the flashing in order to avoid corrosion from galvanic reactions of dissimilar metals.

1. **Weeps / Pressure Equalization Vents:** To be designed and detailed by project architect / engineer.Most building codes permit weeps no less than 3/16” (5mm) in diameter and spaced no more than 33” (838mm) on-center. Wick and tube weep spacing recommended at no more than 16” (406mm) on-center. Install weeps and/or vent tubes through movement joints, conforming to the size, type and composition specified and as per weep/vent manufacturer’s recommendations, on 24” (610mm) on-centers minimum, and at all locations indicated in shop drawings, plans and details. Ensure that all weeps and/or equalization tubes are properly placed to reach the waterproofing membrane and/or cavity they are designed to drain/vent, and are clear of dirt, debris, sealant or other obstructions.
2. **Vapor Barrier:**Install vapor barrier, conforming to the type and composition specified and as per vapor barrier manufacturer’s recommendations, on the side of wall cavity insulation that will be “warm in winter.” Complete vapor barrier within two (2) weeks after enclosure of the building. Placement, composition and detail to be provided by project design professional.
3. ***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.
4. Substrate joints must carry through, full width, to surface of tile, brick or stone.
5. Install expansion joints in tile, brick or stone work over construction/cold joints or control joints in substrates.
6. Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
7. Joint width and spacing depends on application - follow TCNA **“Handbook for Ceramic, Glass, and Stone Tile Installation”** Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
8. Joint width: ≥ ⅛” (3mm) and ≤ 1” (25mm).
9. Joint width: depth ~2:1 but joint depth must be ≥ ⅛” (3mm) and ≤ ½” (12mm).
10. 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 LATICRETE LATASIL™ 9118 Primer for stainless steel, sandstone, metal, limestone (and other porous stones), PVC, fiber reinforced cement installations. 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 tile, brick or stone veneer. 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.

*Use the following LATICRETE® System Materials:*

***LATICRETE LATASIL***

***LATASIL 9118 Primer***

References:

LATICRETE Data Sheets: [6200.1](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds62001_latasil.ashx),  [[6528.1](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds65281_latasil-9118-primer.ashx)](http://www.laticrete.com/Portals/0/datasheets/lds65281.pdf)

LATICRETE SDS: [LATASIL](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-latasil-sds-us-english.ashx), [Primer](http://www.laticrete.com/Portals/0/msds/9118.pdf)

VOC Emission Testing: [Certificate](https://cdn.laticrete.com/~/media/approvals_certifications/latasil-voc-emission-certificate.ashx), [Report](https://cdn.laticrete.com/~/media/approvals_certifications/latasil-voc-emission-test-report.ashx)

 LATICRETE Technical Data Sheets: [211](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds211.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [252](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds252.ashx)

1. ***Sealer (Exterior Adhered Masonry Veneers):***

NOTE TO SPECIFIER: Different finish types may require different sealers. Impervious ceramic, and porcelain tiles do not require sealing. However, some matte finish, and textured finish ceramic and porcelain tiles, may require a pre-grouting sealer, or grout release agent. For finishes other than natural stone, consult LATICRETE Technical Services at 888-786-6343 extension 2, or via email, at technicalservices@laticrete.com.

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

1. Mask off any surfaces not intended to be treated.

2. Liberally apply an even coat of STONETECH® Heavy Duty Exterior Sealer with a paint pad, paintbrush, paint roller or solvent-resistant, low-pressure sprayer. Do not use power sprayer. Do not thin before using. See method of application.

3. Allow sealer to penetrate the surface for 5–15 minutes; denser material may require more time for sealer to penetrate. During this time, distribute excess sealer over entire area to insure even penetration. DO NOT ALLOW EXCESS SEALER TO DRY ON THE SURFACE.

4. Thoroughly wipe dry the entire surface with a clean dry cloth to completely remove all excess sealer from the surface.

5. A second coat may be needed for porous, absorbent surfaces and should be applied one hour after initial application as directed in steps 2–4.

6. If sealer was not completely wiped off and a residue appears, wipe entire surface with a towel dampened with sealer. Use a white nylon pad to loosen residue and follow with a clean, white absorbent towel to remove.

7. Full cure is achieved in 24–72 hours. Surface use may resume in 4-6 hours.

8. Clean up promptly after job is complete, since rags and equipment that are wet with product may be combustible. Clean equipment with mineral spirits and allow equipment and rags to dry in a well-ventilated area out of reach of children and pets. After rags are dry, dispose of in accordance with local waste disposal regulations.

**Recommended Surfaces:** Brick; concrete / masonry; homogeneous granite; veined granite; unpolished, honed and textured limestone; quartzite, bluestone, sandstone, slate, and travertine

**Storage and Handling Instructions:** Avoid prolonged exposure to vapors. Use in a well-ventilated area. Do not ingest. Avoid contact with eyes and skin. KEEP OUT OF THE REACH OF CHILDREN. Do not freeze or store above 100˚F (38˚C). Do not mix with other chemicals. Do not release to natural waterways.

*Use the following LATICRETE Systems Materials:*

***LATICRETE® STONETECH® Heavy Duty Exterior Sealer***

References:

LATICRETE Data Sheets: [Heavy Duty Exterior Sealer](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2125_stonetech-heavy-duty-exterior-sealer.ashx)

LATICRETE SDS: [Heavy Duty Exterior Sealer](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/heavy-duty-exterior-sealer-sds_us-english.ashx)

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 develop as a result of poor workmanship.
	1. **INSTALLATION – CERAMIC TILE**
2. ***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, Glass, and Stone Tile Installation**.” Cut and fit \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.

B***. Vapor Reduction Coating:***

***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 LATICRETE 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 LATICRETE 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 LATICRETE 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 LATICRETE 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 LATICRETE NXT Vapor Reduction Coating and 3 parts clean, washed play sand. In a suitable container, such as an empty LATICRETE NXT Vapor Reduction Coating pail, pour 1 part LATICRETE 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 LATICRETE 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 LATICRETE® 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.

|  |  |  |
| --- | --- | --- |
| **MVER/ RH** | **Mil Thickness** | **ft2 /gal (m2/L)** |
| ≤25 lbs. (1415 µg)/ 100% | 12 | 133 (3.2) |
| Each full unit will yield approximately 865 ft2 (80.1 m2) \*\*. Each mini unit will yield approximately 319 ft2 (29.5 m2) \*\*.  |

***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 LATICRETE 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 90⁰ 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 LATICRETE 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 LATICRETE 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 LATICRETE NXT Vapor Reduction Coating surface must be protected from traffic, dust, debris, rain, and any other contaminants. LATICRETE NXT self-leveling underlayments shall be installed over LATICRETE 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 LATICRETE NXT self-leveling underlayments over LATICRETE NXT Vapor Reduction Coating is 24 hours. If LATICRETE NXT Vapor Reduction Coating is left open longer than 24 hours or the surface becomes contaminated, contact LATICRETE Technical Sales Representative. LATICRETE NXT self-leveling underlayments require the use of LATICRETE Primer Plus. Refer to TDS 230N for detailed primer installation instructions. If finish floor goods are to be installed directly on top of LATICRETE 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.

*Use the following LATICRETE® System Materials:*

***LATICRETE NXT™ Vapor Reduction Coating***

References:

LATICRETE Data Sheet: [507.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds-5070.ashx)

LATICRETE SDS: [NXT VRC A](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/laticrete-nxt-vapor-reduction-coating-part-a-sds_us-english.ashx); [NXT VRC B](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/laticrete-nxt-vapor-reduction-coating-part-b-sds_us-english.ashx)

Health Product Declaration: [NXT VRC](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/nxt-vapor-reduction-coating-hpd.ashx)

 UL GREENGUARD Gold Certificate: [NXT VRC](http://certificates.ulenvironment.com/default.aspx?id=57410&t=cs&)

 Technical Data Sheets: [230N](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds230n.ashx)

1. ***Electric Radiant Heating (LATICRETE STRATA\_HEAT Mat):*** Install in compliance with latest revisions of UL (US) 1693, UL (CAN/CAS) C22.2 #217; NEC Article 424 IX by a licensed electrician. All electrical connections must be made by a licensed electrician. A qualified tile installer is responsible for the placement and encapsulation of the LATICRETE® STRATA\_HEAT™ Mat. Carefully inspect and clean surface to receive LATICRETE STRATA\_HEAT mat before the installation. Remove any sharp edges or pointed objects that might damage the heating elements. Plan and install LATICRETE STRATA\_HEAT following the installation instructions (DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Fully test LATICRETE STRATA\_HEAT Wire during the various stages of the installation to verify correct functioning. Do not install over expansion and control joints. Fully cover and encapsulate LATICRETE STRATA\_HEAT elements with LATICRETE 254 Platinum. Allow mortar to harden prior to the installation of waterproofing (see section 3.3A), crack suppression (see section 3.3B) or tiles. Do not turn the LATICRETE STRATA\_HEAT on until the entire tile installation (including grout) has cured for a minimum of 7 days at 70°F (21°C); cooler temperatures require longer cure times.

Make electrical provision for the LATICRETE® STRATA\_HEAT™ Wire. A deep, 4” x 4” (101.6mm x 101.6mm) double- gang box with a mud plate should be provided by the electrician for the thermostat connections. The power leads must be protected where they leave the floor by a suitable approved conduit where required by electrical code.

**Note:** Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads. Must not exceed L/360 for adhered ceramic tile and thin brick installations or L/480 for all adhered stone installations where L=span length.

**Concrete Substrates:** Concrete must be cured sufficiently to support tile installation traffic as determined by design professional, construction manager, or general contractor. The surface shall be free of voids, sharp protrusions and loose aggregate. All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free from all dirt, oil, grease, paint, concrete sealers or curing compounds and cement laitance. Rough or uneven concrete surfaces should be made smooth with a LATICRETE latex portland cement underlayment to provide a wood float or better finish. Do not level with gypsum or asphalt based products.

**OSB or Exterior Glue Plywood Substrates:** Refer to LATICRETE Technical Data Sheet 152 "Bonding Ceramic Tile, Stone or Brick Over Wood Floors" (refer to section 10, FILING SYSTEMS).

1. Installer must verify that deflection under all live, dead and impact loads of interior plywood floors does not exceed industry standards of L/360 for ceramic tile and brick or L/480 for stone installations where L span length.

2. Minimum construction for interior ceramic or porcelain tiled floors as follows:

* For single layer plywood or OSB – 16" (406 mm) o.c. joist spacing – use 5/8" (15

 mm) tongue and groove nominal thickness.

* For single layer plywood or OSB – 19.2 (488 mm) o.c. joist spacing – use 3/4"(19

 mm) tongue and groove nominal thickness.

* For double layer plywood or OSB – 24” (610 mm) o.c joist spacing – use double

 layer plywood or OSB consisting of minimum subfloor thickness 3/4" (19 mm)

 nominal thickness, tongue and groove minimum underlayment thickness 3/8" (9

 mm) nominal thickness.

 3. Minimum construction for interior natural stone tiled floors as follows: Maximum

 spacing 24" (610 mm) o.c.double layer wood floor consisting of a minimum subfloor

 thickness 3/4" nominal (19 mm) tongue- and-groove with a minimum underlayment

 thickness 3/8" nominal (10 mm).

**Subfloor:** 3/4" (19 mm) thick plywood or OSB, either plain with all sheet edges blocked or tongue and groove, over bridged joists spaced 24” (610 mm) o.c. maximum; fasten plywood every 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. along intermediate supports with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) between sheet ends and 1/4" (6 mm) between sheets edges; all sheet ends must be supported by a framing member; glue sheets to joists with construction adhesive.

**Underlayment:** 3/8" (9 mm) thick plugged-faced plywood or OSB fastened every 6" (150 mm) along sheet ends and every 8" (200 mm) in the panel field (both directions) with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) to 1/4" (6 mm) between sheets and 1/4" (6 mm) between sheet edges and any abutting surfaces; offset underlayment joists from joints in subfloor and stagger joints between sheet ends; glue underlayment to subfloor with construction adhesive. Refer to Technical Data Sheet 152 "Requirements for Direct Bonding of Ceramic or Stone Tiles Over Wood Floors" for complete details.

We recommend installing ¼” (6mm) LATICRETE® HYDRO BAN® Board for optimum performance of LATICRETE STRATA\_HEAT™.

**Installation of LATICRETE STRATA\_HEAT to the substrate:** Install LATICRETE STRATA\_HEAT Mat to the substrate using the appropriate ANSI A118.4, ANSI A118.11 or ANSI A118.15 mortar as outlined by the Tile Council of North America (TCNA) for the applicable installation. Mix the mortar on the loose side but still able to hold a notch to enable complete wetting of the LATICRETE STRATA\_HEAT Mat fleece layer. Using a LATICRETE polymer modified mortar apply to the substrate in a thin-bed method using a 1/4" (6mm) x 3/16" (5mm) V-notched trowel, or ¼” (6 mm) x ¼” (6 mm) square notch trowel, being sure to key the mortar into the substrate. Ensure mortar is “wet-out” sufficiently to allow for optimal bedding of LATICRETE STRATA\_HEAT Mat. Spread only enough mortar that can be covered with LATICRETE STRATA\_HEAT Mat during the specified open time of the mortar.

Embed LATICRETE STRATA\_HEAT Mat into the wet 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 LATICRETE STRATA\_HEAT 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" (6mm) between mat and edge of wall or object for movement.

Install adjacent sections of LATICRETE STRATA\_HEAT Mat in the same manner, being sure to line edges of each section without leaving any gaps.

**Installation of LATICRETE STRATA\_HEAT Wire into LATICRETE STRATA\_HEAT Mat:** Refer to DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx) for complete installation instructions of LATICRETE STRATA\_HEAT. Make electrical provision for the LATICRETE STRATA\_HEAT Wire. A deep, 4” x 4” (101.6mm x 101.6mm) double- gang box with a mud plate should be provided by the electrician for the thermostat connections. The power leads must be protected where they leave the floor by a suitable approved conduit where required by electrical code.

Test the resistance of the LATICRETE STRATA\_HEAT Wire, ensuring it is within the range set out on page 7 of the installation instructions for LATICRETE STRATA\_HEAT (DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Install the LATICRETE STRATA\_HEAT Wire into the LATICRETE STRATA\_HEAT Mat at the chosen spacing (see page 4 of DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Channel a groove in the STRATA\_HEAT Mat and substrate for the cold tail and termination joints, enabling them to fit flush with the top of the mat. NO NOT tape over these joints. Install the floor sensor centrally between two runs of the LATICRETE STRATA\_HEAT Wire.

Test the resistance of the LATICRETE STRATA\_HEAT Wire after installation and check against the previous resistance value to ensure that no damage has occurred.

Lay the tile or stone flooring over the LATICRETE STRATA\_HEAT Mat and LATICRETE STRATA\_HEAT Wire making sure to fully encase them in the LATICRETE 254 Platinum (mixed with LATICRETE STRATA\_HEAT Thermal Pack) with no parts left exposed. Test the resistance of the LATICRETE STRATA\_HEAT Wire again after installation and check against the previous resistance value to ensure that no damage has occurred. Have licensed electrician connect wires to LATICRETE STRATA\_HEAT Thermostat.

Do not turn the LATICRETE® STRATA\_HEAT™ on until the entire tile installation (including grout) has cured for a minimum of 7 days at 70°F (21°C); cooler temperatures require longer cure times.

*Use the following LATICRETE**System Materials:*

***LATICRETE STRATA\_HEAT™ Mat***

***LATICRETE STRATA\_HEAT Wire***

***LATICRETE STRATA\_HEAT Thermostat***

***LATICRETE 254 Platinum***

***LATICRETE STRATA\_HEAT Thermal Pack***

References:

LATICRETE Data Sheet: [026.1](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds0261_-strata_heat-mat.ashx), [026.2](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0262_strata_heat-wire.ashx), [026.3](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0263_strata_heat-thermostat.ashx), [677.0](http://www.laticrete.com/Portals/0/datasheets/LDS6770.pdf), [107.7](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1077_strata_heat-thermal-pack.ashx), [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)

LATICRETE SDS: [254](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-254-platinum-sds_us-english.ashx), [Thermal Pack](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/laticrete/laticrete-strata-heat-thermal-pack-sds_us-english.ashx)

Health Product Declaration: [254 HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/254-grey-hpd.ashx), [Thermal Pack HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/strata_heat-thermal-pack.ashx)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificate: [254](http://certificates.greenguard.org/default.aspx?id=2542&t=cs&)

 LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [152](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds152.ashx), [210](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds210.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

D. ***Electric Radiant Heating (LATICRETE STRATA\_HEAT Wire with LATICRETE STRATA\_HEAT Spacing Strips):*** Install in compliance with latest revisions of UL (US) 1693, UL (CAN/CAS) C22.2 #217; NEC Article 424 IX by a licensed electrician. All electrical connections must be made by a licensed electrician. A qualified tile installer is responsible for the placement and encapsulation of the LATICRETE® STRATA\_HEAT™ Wire and LATICRETE STRATA\_HEAT Spacing Strips. Carefully inspect and clean surface to receive LATICRETE STRATA\_HEAT Spacing Strips and LATICRETE STRATA\_HEAT Wire before the installation. Remove any sharp edges or pointed objects that might damage the heating elements. Plan and install LATICRETE STRATA\_HEAT following the installation instructions (DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Fully test LATICRETE STRATA\_HEAT Wire during the various stages of the installation to verify correct functioning. Do not install over expansion and control joints. Fully cover and encapsulate LATICRETE STRATA\_HEAT Wire with LATICRETE 254 Platinum. Allow mortar to harden prior to the installation of waterproofing (see section 3.3A), crack suppression (see section 3.3B) or tiles. Do not turn the LATICRETE STRATA\_HEAT on until the entire tile installation (including grout) has cured for a minimum of 7 days at 70°F (21°C); cooler temperatures require longer cure times. Make electrical provision for the LATICRETE STRATA\_HEAT Wire. A deep, 4” x 4” (101.6mm x 101.6mm) double- gang box with a mud plate should be provided by the electrician for the thermostat connections. The power leads must be protected where they leave the floor by a suitable approved conduit where required by electrical code.

**Note:** Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads must not exceed L/360 for adhered ceramic tile and thin brick installations or L/480 for all adhered stone installations where L=span length.

**Concrete Substrates:** Concrete must be cured sufficiently to support tile installation traffic as determined by design professional, construction manager, or general contractor. The surface shall be free of voids, sharp protrusions and loose aggregate. All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free from all dirt, oil, grease, paint, concrete sealers or curing compounds and cement laitance. Rough or uneven concrete surfaces should be made smooth with a LATICRETE latex portland cement underlayment to provide a wood float or better finish. Do not level with gypsum or asphalt based products.

**OSB or Exterior Glue Plywood Substrates:** Refer to LATICRETE Technical Data Sheet 152 "Bonding Ceramic Tile, Stone or Brick Over Wood Floors" (refer to section 10, FILING SYSTEMS).

1. Installer must verify that deflection under all live, dead and impact loads of interior plywood floors does not exceed industry standards of L/360 for ceramic tile and brick or L/480 for stone installations where L span length.

2. Minimum construction for interior ceramic or porcelain tiled floors as follows:

For single layer plywood or OSB – 16" (406 mm) o.c. joist spacing – use 5/8" (15

 mm) tongue and groove nominal thickness.

For single layer plywood or OSB – 19.2 (488 mm) o.c. joist spacing – use 3/4"(19

 mm) tongue and groove nominal thickness.

For double layer plywood or OSB – 24” (610 mm) o.c joist spacing – use double

 layer plywood or OSB consisting of minimum subfloor thickness 3/4" (19 mm)

 nominal thickness, tongue and groove minimum underlayment thickness 3/8" (9 mm)

 nominal thickness.

3. Minimum construction for interior natural stone tiled floors as follows: Maximum spacing 24" (610 mm) o.c.double layer wood floor consisting of a minimum subfloor thickness 3/4" nominal (19 mm) tongue-and-groove with a minimum underlayment thickness 3/8" nominal (10 mm).

**Subfloor:** 3/4" (19 mm) thick plywood or OSB, either plain with all sheet edges blocked or tongue and groove, over bridged joists spaced 24” (610 mm) o.c. maximum; fasten plywood every 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. along intermediate supports with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) between sheet ends and 1/4" (6 mm) between sheets edges; all sheet ends must be supported by a framing member; glue sheets to joists with construction adhesive.

**Underlayment:** 3/8" (9 mm) thick plugged-faced plywood or OSB fastened every 6" (150 mm) along sheet ends and every 8" (200 mm) in the panel field (both directions) with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) to 1/4" (6 mm) between sheets and 1/4" (6 mm) between sheet edges and any abutting surfaces; offset underlayment joists from joints in subfloor and stagger joints between sheet ends; glue underlayment to subfloor with construction adhesive. Refer to Technical Data Sheet 152 "Requirements for Direct Bonding of Ceramic or Stone Tiles Over Wood Floors" for complete details.

We recommend installing ¼” (6mm) LATICRETE® HYDRO BAN® Board for optimum performance of LATICRETE STRATA\_HEAT™.

**Installation of LATICRETE STRATA\_HEAT Spacing Strips to the substrate:** Install 12” (305mm) LATICRETE STRATA\_HEAT Spacing Strips to the subfloor, ensuring proper spacing of the LATICRETE STRATA\_HEAT Wire.

The perimeter STRATA\_HEAT Spacing Strips should be installed a minimum of 3” (76mm) away from any walls or hard abutments (e.g. vanities, toilets, kitchen islands, etc…) perpendicular to the direction of the direction in which the LATICRETE STRATA\_HEAT Wire will be run. Additional LATICRETE STRATA\_HEAT Spacing Strips can be laid 40” (~1 m) apart across the floor. It may be necessary to cut the LATICRETE STRATA\_HEAT Spacing Strips into smaller sections to accommodate irregular shaped rooms. Secure the LATICRETE STRATA\_HEAT Spacing Strips to the floor using hot glue, nails. screws, or strong double sided tape.

**Installation of LATICRETE STRATA\_HEAT Wire into LATICRETE STRATA\_HEAT Spacing Strips:** Refer to DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx) for complete installation instructions of LATICRETE STRATA\_HEAT. Make electrical provision for the LATICRETE STRATA\_HEAT Wire. A deep, 4” x 4” (101mm x 101mm) double- gang box with a mud plate should be provided by the electrician for the thermostat connections. The power leads must be protected where they leave the floor by a suitable approved conduit where required by electrical code.

Test the resistance of the LATICRETE STRATA\_HEAT Wire, ensuring it is within the range set out on page 7 of the installation instructions of LATICRETE STRATA\_HEAT (DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Install the LATICRETE STRATA\_HEAT Wire into the LATICRETE STRATA\_HEAT Spacing Strips at the chosen spacing (see page 4 of DS [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)). Install the floor sensor centrally between two runs of the LATICRETE STRATA\_HEAT Wire. Test the resistance of the LATICRETE STRATA\_HEAT Wire after installation and check against the previous resistance value to ensure that no damage has occurred.

Lay the tile or stone flooring over the LATICRETE STRATA\_HEAT Spacing Strips and LATICRETE STRATA\_HEAT Wire making sure to fully encase them in the LATICRETE 254 Platinum (mixed with LATICRETE STRATA\_HEAT Thermal Pack) with no parts left exposed. Test the resistance of the LATICRETE STRATA\_HEAT Wire again after installation and check against the previous resistance value to ensure that no damage has occurred. Have licensed electrician connect wires to LATICRETE STRATA\_HEAT Thermostat.

Do not turn the LATICRETE STRATA\_HEAT on until the entire tile installation (including grout) has cured for a minimum of 7 days at 70°F (21°C); cooler temperatures require longer cure times.

*Use the following LATICRETE**System Materials:*

***LATICRETE® STRATA\_HEAT™ Spacing Strips***

***LATICRETE STRATA\_HEAT Wire***

***LATICRETE STRATA\_HEAT Thermostat***

***LATICRETE 254 Platinum***

***LATICRETE STRATA\_HEAT Thermal Pack***

References:

LATICRETE Data Sheet: [026.2](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0262_strata_heat-wire.ashx), [026.3](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0263_strata_heat-thermostat.ashx), [677.0](http://www.laticrete.com/Portals/0/datasheets/LDS6770.pdf), [107.7](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1077_strata_heat-thermal-pack.ashx), [044.6](https://cdn.laticrete.com/~/media/installation_information/ds0446-sh-wire-installation-manual.ashx)

LATICRETE SDS: [254](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-254-platinum-sds_us-english.ashx), [Thermal Pack](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/laticrete/laticrete-strata-heat-thermal-pack-sds_us-english.ashx)

Health Product Declaration: [254 HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/254-grey-hpd.ashx), [Thermal Pack HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/strata_heat-thermal-pack.ashx)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificate: [254](http://certificates.greenguard.org/default.aspx?id=2542&t=cs&)

 LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [152](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds152.ashx), [210](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds210.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Bonded Thick Bed Method (Floor):*** Verify 1“ (25mm) nominal bed thickness has been allowed. Apply LATICRETE 254 Platinum with a flat trowel as a slurry bond coat approximately 1/16” (1. 5mm) thick over clean concrete slab, in compliance with current revision of ANSI A108.1A (2.2 and 5.2). Place LATICRETE 3701 Fortified Mortar Bed over slurry bond coat while LATICRETE 254 Platinum slurry bond coat is wet and tacky. Omit reinforcing wire fabric and fully compact bed by tamping. Spread LATICRETE 254 Platinum with flat trowel over surface of "green"/fresh mortar bed as a slurry bond coat approximately 1/16” (1.5mm) thick. Apply LATICRETE® 254 Platinum slurry bond coat to back of Ceramic Tile, stone mosaic 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 pieces before mortar bed takes initial set. Clean excess mortar/adhesive from finished surfaces. For installation of tile, brick or Ceramic tile over cured (pre-floated) latex-portland cement thick bed mortar, follow ***appropriate “Thin Bed Method” or “Large, Heavy Tile Method.”***

*Use the following LATICRETE System Materials:*

***LATICRETE 3701 Fortified Mortar***

***LATICRETE 254 Platinum Plus***

 References:

LATICRETE Data Sheets: [100.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1000_3701-fortified-mortar-bed.ashx); [65329](https://cdnmdm.laticrete.com/Datasheet/NA/51224/Datasheet_NA_en_51224.pdf)

LATICRETE SDS: [3701 FMB](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-3701-fortified-mortar-bed-sds_us-english.ashx); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254_PLATINUM_Plus_Safety_Data_Sheet_NA2015_030723.pdf)

Health Product Declarations: [3701FMB HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/3701-mortar-hpd.ashx); [254 Platinum Plus HPD](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254%20Platinum%20Plus%20%28White%29%20HPD%20v2.3_2.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificates: [3701FMB](http://certificates.greenguard.org/default.aspx?id=6721&t=cs&); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/306%20254%20Platinum%20Plus%20GreenGuard.pdf)

LATICRETE Technical Data Sheets: [106](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds106.ashx), [114](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds114.ashx), [154](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds154.ashx), [204](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds204.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Thick Bed (Wire Reinforced) Method:*** Minimum bed thickness of 2” (50mm) must be maintained. Place latex-portland cement thick bed mortar to a depth approximately one-half finished bed thickness in compliance with current revision of ANSI A108.01 (3.2.1.1 & 3.2.4) and A108.1B. Lay 2” x 2” (50mm x 50mm), 16 gauge (1.5mm), galvanized, welded reinforcing wire fabric, complying with ANSI A108.02 (3.7) and ASTM A185, over mortar. Place additional 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 thin bed mortar with flat trowel over surface of "green"/fresh mortar bed as a slurry bond coat approximately 1/16” (1.5 mm) thick . As per ANSI A108.1A (6.0) apply latex-portland cement mortar slurry bond coat to back of Stone, mosaic, paver, brick, Ceramic tile, 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 pieces before mortar bed takes initial set. Clean excess mortar/adhesive from finished surfaces. For installation of tile, brick or stone over cured (pre-floated) latex-portland cement mortar bed, follow ***appropriate “Thin Bed Method” or “Large, Heavy Tile Method.”***

*Use**the following LATICRETE System Materials:*

***LATICRETE 3701 Fortified Mortar***

***LATICRETE 254 Platinum Plus***

 References:

LATICRETE Data Sheets: [100.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1000_3701-fortified-mortar-bed.ashx); [65329](https://cdnmdm.laticrete.com/Datasheet/NA/51224/Datasheet_NA_en_51224.pdf)

LATICRETE SDS: [3701 FMB](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-3701-fortified-mortar-bed-sds_us-english.ashx); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254_PLATINUM_Plus_Safety_Data_Sheet_NA2015_030723.pdf)

Health Product Declarations: [3701FMB HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/3701-mortar-hpd.ashx); [254 Platinum Plus HPD](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254%20Platinum%20Plus%20%28White%29%20HPD%20v2.3_2.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificates: [3701FMB](http://certificates.greenguard.org/default.aspx?id=6721&t=cs&); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/306%20254%20Platinum%20Plus%20GreenGuard.pdf)

LATICRETE Technical Data Sheets: [106](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds106.ashx), [114](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds114.ashx), [204](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds204.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Self-Leveling Underlayment:*** Use LATICRETE NXT™ Level Plus, and related LATICRETE Primer Plus, as a self-leveling underlayment to attain proper floor flatness.

**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 100 psi (0.7 MPa) tensile strength prior to installation of LATICRETE self-leveling underlayment. Any areas that do not meet 100 psi (0.7 MPa) tensile strength must be removed and repaired.

**General Priming Information**: All surfaces must be primed prior to the installation of LATICRETE NXT self-leveling underlayments. LATICRETE Primer Plus is a concentrate and must be diluted with clean potable water prior to application. Dilution ratio and application methods vary depending on substrate. Always stir or shake LATICRETE Primer Plus concentrate prior to diluting. Mix primer with clean potable water according to the **LATICRETE® Primer Plus DILUTION / APPROXIMATE COVERAGE** chartbelow. Water must always be carefully measured in order to ensure proper dilution is achieved. Use a mixing paddle to thoroughly combine primer and water. LATICRETE Primer Plus can be broom, roller, mop, or spray applied. 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. The primed surface must also be protected from weather, water and direct sunlight.

|  |  |
| --- | --- |
| **LATICRETE Primer Plus DILUTION / APPROXIMATE COVERAGE**  | **WATER DROP TEST****The water drop test described in this document is a subjective, qualitative test that may be conducted in order to help an experienced contractor form an opinion as to how a slab should be primed. However, this test may not be definitive.** To help determine the appropriate primer dilution, properly prepare slab in accordance with this guide then apply several dime to quarter size drops of water to properly prepared surface and observe. 1. **High-Suction** = Water completely absorbs into surface within 15 seconds; surface may appear dark and wet with no visible water remaining on surface
2. **Normal-Suction** = Water absorbs or partially absorbs within 30 seconds but not less than 15 seconds; bead of water may slowly shrink as it absorbs while dark, wet spot on surface slowly expands
3. **Non-Suction** = Water beads up and does not absorb at all within 30 seconds; bead of water does not shrink or absorb, wet spot on surface does not expand

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| **SUITABLE SUBSTRATES** | **Primer to****Water Ratio1** | **Approximate Coverage2** |
| **Normal Suction:** Concrete | 1:3 | 400 ft² (37 m²) |
|  **High-Suction:**Highly Porous Concrete /  Cement Underlayments /Cement Mortar Beds  | 1st coat: 1:52nd coat: 1:3 | 200 ft² (19 m²) |
| **Exterior Glue Plywood/OSB** | 1:3 | 400 ft² (37 m²) |
| **Non-Suction:** • Ceramic • Stone •Quarry Tile • VCT • Sheet Vinyl • Terrazzo | 1:1 with slurry | 200 ft² (19 m²) |
| **VAPOR BAN E VAPOR BAN ER** | 1:1 with slurry | 200 ft² (19 m²) |
| 1. **Dilution Ratio** = Primer: Water
2. **Approximate coverage** in square feet per gallon of concentrated Primer
3. **Moisture Mitigation System** may require specific Primer to be used. Consult with moisture mitigation system manufacturer for details.
 |

**Normal Suction Concrete:** Dilute LATICRETE® Primer Plus 1:3 (1 part primer to 3 parts water). Apply a single coat of diluted Primer/water mix to the point of refusal so that the substrate is completely covered and small puddles form in low spots. While LATICRETE Primer Plus is still wet use a push broom to work primer into the substrate so that puddles are spread evenly over the surface, absorbed and a uniform film has been applied. Remove any remaining puddles by brooming and spreading over the surface. Then proceed below to the **All Suitable Substrates** and **Protect Primer Application** sections.

**High-Suction Concrete:** Apply two coats of LATICRETE® Primer Plus allowing adequate time to dry between coats. For the first coat, dilute LATICRETE Primer Plus 1:5 (1 part primer to 5 parts water). Apply first coat of diluted primer/water mix to the point of refusal so that the substrate is completely covered and small puddles form in low spots. While primer is still wet use a push broom to work primer into the substrate so that puddles are spread evenly over the surface, allowed to absorb and a uniform film remains on the surface. Remove any remaining puddles by brooming and spreading over the surface. Allow the primer to dry. The first coat is considered dry when a minimum of 3 hours dry time has elapsed, the primer turns from milky white to clear, is dry to the touch, and there is no release of primer from the substrate. First coat must not be opened to trade traffic prior to installation of second coat. If the primed floor becomes contaminated by trade traffic, construction dust, debris, or any other bond inhibiting substance, or is exposed to water/excessive moisture prior to second coat application, the contaminated first coat of Primer must be completely removed by shot blasting, scarification or other mechanical means, properly re-primed and allowed to dry.

For the second coat, dilute LATICRETE Primer Plus 1:3 (1 part primer to 3 parts water). Apply second coat of diluted primer/water mix to the point of refusal so that the substrate is completely covered and small puddles form in low spots. While second coat of primer is still wet use a push broom to work primer into the substrate so that puddles are spread evenly over the surface and a uniform film has been applied. Then follow the **All Suitable Substrates** and **Protect Primer Application** sections.

**Exterior Glue Plywood/OSB:** Dilute LATICRETE Primer Plus 1:3 (1 part primer to 3 parts water). Using a sprayer or broom, apply a single coat of diluted primer/water mix so that the substrate is completely covered and a uniform film has been applied and follow the **All Suitable Substrates** section. Fasten galvanized diamond metal lath over entire exterior glue plywood substrate using corrosion resistant fasteners every 6” (15 cm) overlapping lath seams by 1” (2.5 cm) and follow the **Protect Primer Application** section**.**

**Non-Suction Substrates:** Non-Suction substrate primer dilution and application instructions are intended for Ceramic tile, quarry tile, VCT, VAT, sheet vinyl and moisture mitigation systems that have been properly prepared in accordance with this guide and moisture mitigation manufacturer's instructions. Concrete slabs that are considered Non-Suction will require additional preparation prior to primer application. See **Non-Suction Concrete** in the **Substrate Types/General Requirements** section for more information.

Dilute LATICRETE Primer Plus 1:1 (1 part Primer to 1 part water). Apply a single coat of diluted primer/water mix to the point of refusal so that the substrate is completely and evenly covered. While primer is still wet and white, immediately lightly scatter LATICRETE NXT self-leveling dry powder into the wet primer. Using a push broom, work the dry powder into the wet primer/water mixture forming a slurry. Continue to broom so that puddles are spread evenly over the surface and a uniform film has been applied. Then follow **All Suitable Substrates** and **Protect Primer Application**. For more information on this method contact the Technical Service Department.

**VAPOR BAN E VAPOR BAN ER**:Ensure that an acceptable system has been installed in accordance with manufacturer’s instructions. If mitigation system manufacturer requires the use of a specific Primer, follow manufacturer’s priming instructions using the required primer. If LATICRETE Primer Plus will be used follow **Non-Suction Priming** instructions.

**LATICRETE NXT Underlayments** andother **Cement Mortar Beds:** Follow **High-Suction** priming instructions for priming on top of LATICRETE NXT underlayments and other cement mortar beds.

**All Suitable Substrates:** Remove any remaining puddles by brooming and spreading evenly over the surface. Allow the LATICRETE Primer Plus to completely dry for a minimum of 3 – 5 hours at 70°F (21°C) and 50% Relative Humidity. LATICRETE Primer Plus coat is considered dry when a minimum of 3 hours dry time has elapsed, the primer turns from milky white to clear, is dry to the touch, and there is no release of primer from the substrate. 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°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® NXT™ self-leveling underlayment to debond. If primer dries within 30 minutes or if a 24 hour period is exceeded after primer application, the surface must be primed again.

**Protect Primer Application:** When walking over new primer application prior to installation of a LATICRETE NXT self-leveling underlayment, shoes must be protected with clean, slip-on type booties (i.e. Tyvek). Primed floor must not be opened to trade traffic prior to installation of LATICRETE NXT underlayments If the primed floor becomes contaminated by trade traffic, construction dust, debris, or any other bond inhibiting substance, or is exposed to water/excessive moisture prior to second coat application, the contaminated first coat of primer must be completely removed by shot blasting, scarification or other mechanical means, properly re-primed and allowed to dry.

**Mixing** – LATICRETE 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. LATICRETE 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 LATICRETE 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 LATICRETE 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 LATICRETE 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 LATICRETE® NXT™ Level Plus, subject to thickness, drying conditions and type of flooring materials. Coverage will be dependent upon relative rough-ness of substrate, but the following is typical: 1/8” (3mm) thickness is approximately 49 ft2 (4.5 m2); 1/4” (6mm) thickness is approx. 24 ft2 (2.2 m2); 1/2" (13mm) thickness is approx. 12 ft2 (1.1 m2).

*Use the following LATICRETE System Materials:*

***LATICRETE® NXT™ Level Plus***

***LATICRETE Primer Plus***

References:

LATICRETE Data Sheets: [505.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds5050_nxt-level-plus.ashx), [65437](https://cdnmdm.laticrete.com/Datasheet/NA/51282/Datasheet_NA_en_51282.pdf)

 LATICRETE SDS: [Primer Plus SDS I](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/Primer_Plus_I_SDS_NA2015_112023_FINAL.pdf), [Primer Plus SDS II](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/Primer_Plus_II_SDS_NA2015_112023_FINAL.pdf) [NXT LEVEL PLUS](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-nxt-level-plus-sds_us-english.ashx)

Health Product Declaration: [Primer Plus](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/nxt-primer-hpd-la-en.pdf), [NXT Level Plus](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/nxt-level-plus-hpd.ashx)

UL GREENGUARD Gold Certificate: [Primer Plus](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/145-nxt-primer-greenguard-la-en.pdf), [NXT Level Plus](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/nxt-level-plus-hpd.ashx)

LATICRETE Technical Data Sheets: [205](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds205.ashx), [230N](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds230n.ashx), [233](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds233.ashx), [236](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds236.ashx), [251](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds251.ashx?la=en)

1. ***Uncoupling Membrane:*** Mix LATICRETE 254 Platinum to a wet consistency. Using a ¼” x ¼” (6mm x 6mm) square notched trowel, install LATICRETE 254 Platinum in compliance with current revisions of ANSI A108.02 (3.11) and ANSI A108.5 1.2. Work the latex portland cement mortar into good contact with the substrate and comb with notched side of trowel. Spread only as much LATICRETE 254 Platinum as can be covered while the mortar surface is still wet and tacky. Apply LATICRETE STRATA\_MAT™ to the wet LATICRETE 254 Platinum with the fabric side down. Using a clean grout float, trowel or 40 lb. vinyl roller, ensure that LATICRETE STRATA\_MAT is fully embedded into the mortar. Lift a corner of the LATICRETE STRATA\_MAT to ensure that maximum coverage is achieved. Abut the ends and sides of adjacent sheets of LATICRETE STRATA\_MAT to make sure that continuity of the uncoupling system is achieved. Allow installation to set until firm. Clean excess mortar from face of LATICRETE STRATA\_MAT. For installation of tile or stone, follow ***Thin Bed Method*** (§3.4C).

*Use the following LATICRETE System Materials:*

***LATICRETE STRATA\_MAT***

***LATICRETE 254 Platinum***

 References:

LATICRETE Data Sheets: [026.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0260_strata_mat.ashx), [010.5](https://cdn.laticrete.com/~/media/installation_information/ds-0105.ashx), [677.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6770_254-platinum.ashx)

LATICRETE SDS: [254](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-254-platinum-sds_us-english.ashx)

Health Product Declaration: [254 HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/254-grey-hpd.ashx)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificate: [254](http://certificates.greenguard.org/default.aspx?id=2542&t=cs&)

LATICRETE Technical Data Sheets: [233](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds233.ashx)

1. ***Sound Abatement and Crack Isolation Mat:***

NOTES TO SPECIFIER: The sound reduction performance of Stone, mosaic, paver installations will depend significantly on:

1) the type and thickness of floor construction;

2) whether a suspended ceiling is part of the design;

3) flanking acoustical transmission control (e.g. perimeter isolation joints);

4) the type and source of sound energy/noise (i.e. impact versus airborne).

Review test results conducted in conformance with current revision of ASTM E2179 “Standard Test method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors,” ASTM E492 “Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine,” ASTM E989 “Standard Classification for Determination of Impact Insulation Class (IIC),” ASTM E413 “Standard Classification for Determination of Sound Transmission Class (STC),” FHA Bulletin No. 750 “Impact Noise Control in Multifamily Dwellings,” HUD TS 28 “A Guide to Airborne, Impact and Structure-borne Noise-Control in Multifamily Dwellings” and manufacturer’s performance data and recommendations, in the context of expected sound reduction requirements.

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 Strip**

It is recommended to install a perimeter isolation strip before placing the LATICRETE 170 Sound & Crack Isolation Mat. Attach the perimeter isolation strip to the perimeter wall of the entire subfloor, as well as around the perimeter of any permanently attached 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 tape, duct tape, or carpet tape. As an alternative to perimeter isolation strip, the installer may run the sheets of LATICRETE® 170 Sound & Crack Isolation Mat up the wall approximately 3” (75mm). This should take place throughout the entire perimeter of the room 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.

 **LATICRETE 170 Sound & Crack Isolation Installation**

Use LATICRETE 254 Platinum to adhere the LATICRETE 170 Sound & Crack Isolation

Mat to the substrate. Use a ¼” x ¼” (6mm x 6mm) notched trowel and comb the mortar over the substrate; applying only enough mortar as can be covered within 25 minutes. Unroll the LATICRETE 170 Sound & Crack Isolation Mat into place, in the thin-set adhesive mortar. Install the LATICRETE 170 Sound & Crack Isolation Mat over the entire area to be treated; do not overlap edges but be sure edges of each piece butt firmly together. Trim length of mat to desired length and width as necessary. Once installed, use a 25 – 45 lb. (11.3 – 20 kg) roller to embed the LATICRETE 170 Sound & Crack Isolation Mat firmly into the thin-set adhesive mortar. Allow to cure for 24 hours.

*Use the following LATICRETE System Materials:*

***LATICRETE 170 Sound & Crack Isolation Mat***

***LATICRETE 254 Platinum***

References:

LATICRETE Data Sheet: [170.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1700_170-sound-crack-isolation-mat.ashx), [677.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6770_254-platinum.ashx)

LATICRETE SDS: [254](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-254-platinum-sds_us-english.ashx)

Health Product Declaration (HPD): [254 HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/254-grey-hpd.ashx)

Product Specific (Type III) Environmental Product Declaration (EPD): [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD Gold Certificate: [254](http://certificates.greenguard.org/default.aspx?id=2542&t=cs&)

Technical Data Sheet: [163](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds163.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Pre-float Method (interior adhered veneers):***  Over clean, dimensionally stable and sound concrete or masonry substrates, apply thick-bed mortar as scratch/leveling coat in compliance with current revision of A108.1A (1.0, 1.4 & 5.1). Float surface of scratch/leveling coat plumb, true and allow mortar to set until firm. For installation of ceramic tile follow appropriate “***Thin Bed Method***” or ***“Large, Heavy Tile Method.”***

*Use the following LATICRETE System Materials:*

***LATICRETE 3701 Fortified Mortar***

***LATICRETE 254 Platinum Plus***

References:

LATICRETE Data Sheets: [100.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1000_3701-fortified-mortar-bed.ashx); [65329](https://cdnmdm.laticrete.com/Datasheet/NA/51224/Datasheet_NA_en_51224.pdf)

LATICRETE SDS: [3701 FMB](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-3701-fortified-mortar-bed-sds_us-english.ashx); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254_PLATINUM_Plus_Safety_Data_Sheet_NA2015_030723.pdf)

Health Product Declarations: [3701FMB HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/3701-mortar-hpd.ashx); [254 Platinum Plus HPD](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254%20Platinum%20Plus%20%28White%29%20HPD%20v2.3_2.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificates: [3701FMB](http://certificates.greenguard.org/default.aspx?id=6721&t=cs&); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/306%20254%20Platinum%20Plus%20GreenGuard.pdf)

LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [106](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds106.ashx), [114](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds114.ashx), [118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds118.ashx), [122](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds122.ashx), [128](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds128.ashx), [130](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds130.ashx), [143](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds143.ashx), [204](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds204.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Lath & Plaster Method (interior adhered veneers):*** Install cleavage membrane complying with current revision of ANSI A108.02 (3.8 Membrane or cleavage membrane). Install metal lath complying with the current revision of ANSI A108.01 (3.3 Requirements for lathing and portland cement plastering), ANSI A108.02 (3.6 Metal lath) and A108.1A (1.0 – 1.2, 1.4, & 5.1). Apply latex-portland cement mortar as scratch/leveling coat over wire lath, concrete or masonry in compliance with current revision of ANSI A108.01 (3.3.5.1) and A108.1A (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 appropriate “***Thin Bed Method***” or ***“Large, Heavy Tile Method.”***

*Use the following LATICRETE System Materials:*

***LATICRETE 3701 Fortified Mortar***

***LATICRETE 254 Platinum Plus***

References:

LATICRETE Data Sheets: [100.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds1000_3701-fortified-mortar-bed.ashx); [65329](https://cdnmdm.laticrete.com/Datasheet/NA/51224/Datasheet_NA_en_51224.pdf)

LATICRETE SDS: [3701 FMB](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-3701-fortified-mortar-bed-sds_us-english.ashx); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254_PLATINUM_Plus_Safety_Data_Sheet_NA2015_030723.pdf)

Health Product Declarations: [3701FMB HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/3701-mortar-hpd.ashx); [254 Platinum Plus HPD](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254%20Platinum%20Plus%20%28White%29%20HPD%20v2.3_2.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificates: [3701FMB](http://certificates.greenguard.org/default.aspx?id=6721&t=cs&); [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/306%20254%20Platinum%20Plus%20GreenGuard.pdf)

LATICRETETechnical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [106](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds106.ashx), [114](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds114.ashx), [118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds118.ashx), [122](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds122.ashx), [130](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds130.ashx), [204](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds204.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Thin Bed Method (interior adhered veneers):*** 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, 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 Plus***

References:

LATICRETE Data Sheet: [65329](https://cdnmdm.laticrete.com/Datasheet/NA/51224/Datasheet_NA_en_51224.pdf)

LATICRETE SDS: [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254_PLATINUM_Plus_Safety_Data_Sheet_NA2015_030723.pdf)

Health Product Declaration: [254 Platinum Plus HPD](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/254%20Platinum%20Plus%20%28White%29%20HPD%20v2.3_2.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificate: [254 Platinum Plus](https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/306%20254%20Platinum%20Plus%20GreenGuard.pdf)

LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds118.ashx), [129](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds129.ashx), [209](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds209.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Large, Heavy Tile 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, 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 MULTIMAX™* *LITE***

References:

LATICRETE Data Sheet: [328.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds-3280.ashx)

LATICRETE SDS: [MULTIMAX LITE](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/laticrete/multimax-lite-sds-us-english.ashx)

Health Product Declaration (HPD): [MULTIMAX LITE (Grey)](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/multimax-lite-grey-v21.ashx), [MULTIMAX LITE (White)](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/multimax-lite-white-v21pdf.ashx)

Product Specific (Type III) Environmental Product Declaration (EPD): [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

GREENGUARD Certificate: [MULTIMAX LITE](http://certificates.greenguard.org/default.aspx?id=134874&t=cs)

1. ***Epoxy Thin Bed Method:*** Install epoxy adhesive in compliance with current revisions of ANSI A108.02 (3.14) and ANSI A108.6. Use the appropriate trowel notch size to ensure proper bedding of the tile or stone selected. Work the epoxy adhesive into good contact with the substrate and comb with notched side of trowel. Spread only as much epoxy adhesive as can be covered while the adhesive 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 epoxy adhesive onto the back of (i.e. ‘back-butter’) each piece/sheet in addition to troweling epoxy adhesive over the substrate. Beat each piece/sheet into the epoxy adhesive with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess epoxy adhesive from tile or stone face and joints between pieces.

*Use the following LATICRETE System Materials:*

***LATAPOXY® 300 Adhesive***

References:

LATICRETE Data Sheets: [633.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6330_latapoxy-300-adhesive.ashx)

LATICRETE SDS: [300 A](https://cdn.laticrete.com/~/media/safety_datasheets/latapoxy-300-epoxy-adhesive-part-a-sds_us-english.ashx), [300 B](https://cdn.laticrete.com/~/media/safety_datasheets/latapoxy-300-adhesive-part-b-sds_us-english.ashx), [300 C](https://cdn.laticrete.com/~/media/safety_datasheets/latapoxy-300-adhesive-part-c-sds_us-english.ashx)

Health Product Declaration: [300 HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/300-hpd.ashx)

UL GREENGUARD Gold Certificate: [300](http://certificates.greenguard.org/default.aspx?id=2545&t=cs&)

LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds118.ashx), [128](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds128.ashx), [154](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds154.ashx), [209](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds209.ashx?la=en), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Thin Bed Method (Glass Tiles):*** Ensure that the backs of the glass tiles have been thoroughly washed, rinsed, and completely dried prior to installation.Install latex portland cement thin-set mortar in compliance with current revisions of ANSI A108.02 (3.11), A108.1B and ANSI A108.5. Use an appropriate sized notched trowel to that will achieve full coverage of the thinset mortar to the backs of the tiles. Use the flat side of the trowel to initiate a bond coat and firmly apply the thin-set material onto the substrate. Next, apply additional thin-set mortar in a horizontal direction using notched side of the trowel. Use the flat side of the trowel to knock down the ridges and create a smooth setting bed. Check for voids and fill in where necessary. Next, back butter each clean and dry tile using additional setting material. Verify that 100% coverage has been achieved by removing a tile while the thin-set mortar is still fresh. The face of the glass tile can also be checked before setting to verify the appearance of full coverage. Tiles must be dry prior to installation to avoid the appearance of water spots on back of tile. Apply glass tile into the wet thin-set using firm, even pressure to establish contact and eliminate any voids. Remove any excess setting material from in between tile edges. If voids or water spots in the adhesive are visible through the tile, remove the tile and correct the installation at this point. Allow the tile installation to cure a minimum of 48 hours at 70°F (21°C) prior to grouting. Clean excess latex portland cement mortar from the face of the glass tiles and joints between pieces.

*Use the following LATICRETE® System Materials:*

***LATICRETE Glass Tile Adhesive Tile***

References:

LATICRETE Data Sheet: [36628](https://cdnmdm.laticrete.com/Datasheet/NA/38/Datasheet_NA_en_38.pdf)

LATICRETE SDS: [GTAL](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/glass_tile_adhesive_lite_sds_us_canada-la-en.pdf)

Health Product Declaration: [GTAL HPD](https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/laticrete-glass-tile-adhesive-lite-la-en.pdf)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

UL GREENGUARD GOLD Certificate: [GTA](http://certificates.greenguard.org/default.aspx?id=14601&t=cs)

LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [115](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds115.ashx), [118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds118.ashx), [129](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds129.ashx), [192](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds192.ashx), [204](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds204.ashx), [233](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds233.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

1. ***Sound Abatement and Crack Suppression Adhesive (Thin Bed Method):***

NOTE TO SPECIFIER: Ceramic tile installed with traditional thin-bed mortars can be damaged by shrinkage related substrate cracking. Specify a sound abatement and crack suppression adhesive, which complies with ANSI A118.12 to reduce crack propagation into veneers or hard finishes. Do not use a sound abatement and crack suppression adhesive if substrate cracking:

 1) is due to structural movement;

 2) involves vertical and/or differential movement;

 3) or, involves horizontal movement > 1/8” (3mm)

Install sound abatement and crack suppression adhesive 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, brick or stone selected. Work the sound abatement and crack suppression adhesive into good contact with the substrate and comb with notched side of trowel. Spread only as much sound abatement and crack suppression adhesive 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 sound abatement and crack suppression adhesive with a beating block or rubber mallet to insure full bedding and flatness. Allow installation to set until firm. Clean excess sound abatement and crack suppression adhesive from tile or stone face and joints between pieces. Installations requiring sound control must be done with either a ¼” x 3/8” (6mm x 9mm) square notch trowel or a ½” x ½” (12mm x 12mm) square notch trowel. Installations requiring only anti-fracture can be done using a ¼” x ¼” (6mm x 6mm) square notch trowel for maximum coverage.

*Use the following LATICRETE® System Materials:*

***LATICRETE 125 TRI-MAX™***

References:

LATICRETE Data Sheet: [024.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/ds-240.ashx)

LATICRETE SDS: [TRI-MAX](https://cdn.laticrete.com/~/media/product-documents/safety-data-sheets/125-tri-max-sds.ashx)

Health Product Declaration: [TRI-MAX HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/laticrete-125-tri-max.ashx)

Product Specific (Type III) Environmental Product Declaration: [Mortar EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-mortar-for-tile-installation.ashx)

LATICRETE Technical Data Sheets: [105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds105.ashx), [163](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds163.ashx)

1. ***Epoxy Spot Bond Method:***

**NOTES TO SPECIFIER - Recommended Guidelines for Spot Bonding Stone:** (Please consult your Local Building Code for actual code compliance);

1. Thickness: maximum thickness for tile or stone is 2” (50mm);

2. Facial Dimension - ≤720 in2 (4,650 cm2). For >720 in2 (4,650 cm2) please contact LATICRETE®

 Technical Services.

3. Module Weight – tile or stone weight is not to exceed 20 lbs. ft2 (98kg/m2).

4. Height – check with local building code for height restrictions or limits.

Store resins at room temperature 70°F (21°C) for 24 hours before using. All substrates must be clean and dry when application of LATAPOXY® 310 Stone Adhesive is made. Finished veneers equipped with any type of resin, mesh, epoxy or fiberglass backing must be ground in those areas to receive LATAPOXY 310 Stone Adhesive. Clean and grind back of stone at areas to receive the LATAPOXY 310 Stone Adhesive spots using a mechanical wheel grinder with a diamond wheel/blade. Remove dust with a stiff brush, wipe entire surface. Using a damp sponge (not wet), wipe the tile or stone to remove any particles or remaining dust to ensure a clean direct bond and that all ground material is removed. Wipe dry with a clean cloth, then apply LATAPOXY 310 Stone Adhesive. Combine equal volumes of LATAPOXY 310 Stone Adhesive Part A and Part B (1:1 mix ratio by volume) on a hard, smooth surface (not the tile or stone to be installed). Mix until uniform in color; no swirls. Small quantities can be mixed with a putty knife or margin trowel. Larger quantities can be mixed with an electric drill mixer (low speed). Cartridge packs are designed for use only with the LATAPOXY 310 Cordless Mixer. Apply dabs evenly distributed on back of the stone or tile; 5 dabs minimum, 1 in each corner and 1 in center. Cover at least 10% of the area of each piece. Finished dab thickness must be a minimum of 1/8” (3mm). After installation of LATAPOXY 310 Stone Adhesive onto the veneer, install onto substrate and adjust for plumb and level.

***Approximate dab diameter required to achieve 10% coverage with 5 dabs:***

|  |  |
| --- | --- |
| Tile Size  | Dab Diameter  |
| 12”x12” (*300mm X 300mm*)  | 2” (*50mm*)  |
| 24”x24” (*600mm X 600mm*)  | 4” (*100mm*)  |
| 36”x20” (*900mm X 500mm*)  | 5” (*125mm*)  |

*Use the following LATICRETE® System Materials:*

***LATAPOXY 310 Stone Adhesive***

***LATAPOXY 310 Rapid Stone Adhesive***

***LATAPOXY 310 Cordless Mixer***

References:

LATICRETE Data Sheets: [679.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lsd6790_latapoxy-310-stone-adhesive.ashx), [679.3](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6793_latapoxy-310-rapid-stone-adhesive.ashx), [683.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6830_latapoxy-310-cordless-mixer.ashx)

LATICRETE SDS: [310 A Pail](https://www.laticrete.com/~/media/safety_datasheets/LATAPOXY-310-Stone-Adhesive-Part-A-Pail-SDS_US-English.ashx), [310 A Cartridge](https://www.laticrete.com/~/media/safety_datasheets/LATAPOXY-310-Stone-Adhesive-Part-A-Cartridge-SDS_US-English.ashx), [310 Rapid A](https://laticrete.com/~/media/safety_datasheets/latapoxy-310-stone-adhesive-part-a-rapid-sds-us-english.ashx), [310 B](https://www.laticrete.com/~/media/safety_datasheets/LATAPOXY-310-Stone-Adhesive-Part-B-SDS_US-English.ashx)

Health Product Declaration: [310 Pail](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/310-pail.ashx), [310 Cartridge](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/310-hpd.ashx), [310 Rapid (Pail or Cartridge)](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/310-rapid-hpd.ashx)

LATICRETE Technical Data Sheets: [213](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds213.ashx?la=en), [214](https://www.laticrete.com/~/media/Support-and-Downloads/Technical-Datasheets/tds214.ashx?la=en)

1. ***Grouting or Pointing (Interior Adhered Veneers):***

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 Premium 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 Premium Grout Part A Liquid into a clean mixing pail. Then open pouch and pour LATICRETE SPECTRALOCK PRO Premium 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 Grout Part C Powder and blend until uniform. For narrow joints, it is acceptable to leave out up to 10% of the LATICRETE SPECTRALOCK Grout Part C Powder to produce a more fluid mix. Install LATICRETE SPECTRALOCK PRO Premium 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, firm 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 minutes after grouting (wait longer when temperatures are cooler). Begin by mixing one 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 loosen 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 (4.7m2). Discard sponges as they become "gummy" with residue. Check work as you clean and repair any low spots with additional grout. One (1) hour after 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 (4.7m2). 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 Premium 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 Premium Grout***

References:

 LATICRETE Data Sheets: [681.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds6810_spectralock-pro-premium-grout.ashx), [681.5](https://cdn.laticrete.com/~/media/installation_information/ds-6815.ashx)

 LATICRETE SDS: [Premium Part A](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-spectralock-pro-premium-part-a-sds_us-english.ashx), [Premium Part B](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-spectralock-pro-premium-part-b-sds_us-english.ashx), [Part C Powder](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete/spectralock-part-c-colored-powder-sds-us-english.ashx), [Cleaning Additive](http://www.laticrete.com/Portals/0/msds/377.pdf)

 Health Product Declaration: [PRO Premium HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/spectralock-pro-premium-hpd.ashx)

 UL GREENGUARD GOLD Certificate: [PRO Premium](http://certificates.greenguard.org/default.aspx?id=16608&t=cs&)

 LATICRETE Technical Data Sheets: [111](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds111.ashx), [198](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds198.ashx), [216](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds216.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [400](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds400.ashx)

***2. Polymer Fortified Cement Grout (ANSI A118.7):***

NOTE TO SPECIFIER: LATICRETE PERMACOLOR® Select is an advanced, high performance cement grout that offers the industry’s first dispensable dry pigment solution. LATICRETE PERMACOLOR Select is designed for virtually all types of residential and commercial installations and offers optimum performance on the most demanding exterior or interior applications. Easy to mix, grout and clean, LATICRETE PERMACOLOR Select is fast setting and is suitable for joints 1/16” to ½” (1.5mm – 12mm) wide on floors or walls.

**Surface Preparation**

Before starting to grout, remove spacers and debris in grout joints and remove dust and dirt using a wet sponge. Do not leave water standing in joints. Note: when grouting in hot weather refer to TDS 176 Hot Weather Tiling and Grouting. Substrate temperature must be between 40°F (4°C) and 90°F (32°C). Apply grout release or sealer if necessary. Refer to TDS 400 Grout Guide for more information on grouting.

**Mixing**

Use approximately 2 – 2.25 quarts (1.9 L – 2.1 L) of clean potable water for 2 LATICRETE PERMACOLOR Select Color Packs and 25 lbs (11.3 kg) of LATICRETE PERMACOLOR Select Grout Base. Do not use with 1776 Grout Enhancer or any other latex additive. Place water in a clean mixing container. Remove Color Packs from the cardboard container as well as the protective plastic sleeve. The internal bag is a water-dispersible pack – when using the 25 lbs. (11.3 kg) bag of LATICRETE PERMACOLOR Select, drop both color packs directly to water in clean mixing container. Mix with a drill mixer until pigment is dispersed evenly in container and the dispersible pack is no longer visible. Add LATICRETE PERMACOLOR Select Base. Mix with a slow speed drill mixer (300 rpm) for 1 minute. Wait for 5 minutes and remix with drill for 1 minute. If using the 12.5 lbs bag, drop only one color pack into 1 – 1.1 quarts (.8L – 1.0 L) of clean water.

**Application**

Clean tile surface with a damp sponge. Spread with a sharp, firm rubber grout float or wall float for narrow wall joints. To remove excess grout hold the float at a 90° angle and pull it at a 45° angle diagonally across the joints to avoid pulling out the material.

*Note: If the grout begins to stiffen during installation, remix with drill mixer for 10–15 seconds. DO NOT ADD MORE WATER.*

**Cleaning**

For first cleaning wait approximately 35 – 40 minutes at 70°F (21°C). Wider joints or cooler temperatures may extend wait time. Begin initial cleaning by lightly wiping down entire area to be cleaned with a damp sponge. Wash with a damp sponge (not wet). Work diagonally to the joints. Allow to dry 3 hours at 70°F (21°C). For second cleaning use a damp sponge or dry cloth to remove remaining grout haze.

*Note: Use caution when polishing soft glazed tile or polished stone. If grout is to be sealed, LATICRETE generally recommends waiting a minimum of a 72 hours at 70°F (21°C) prior to sealing LATICRETE® PERMACOLOR® Select, with a STONETECH® sealer.*

*Use the following LATICRETE System Materials:*

***LATICRETE PERMACOLOR Select***

References:

LATICRETE Data Sheets: [281.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2810_permacolor-select.ashx)

LATICRETE SDS: [2600](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-permacolor-select-sds_us-english.ashx), [Color Kit](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-permacolor-select-color-kit-sds_us-english.ashx)

Health Product Declaration: [Select Powder HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/permacolor-select-base-hpd.ashx), [Select Color Kit HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/permacolor-select-color-kit-hpd.ashx)

Environmental Product Declaration: [Grout EPD](https://cdn.laticrete.com/~/media/environmental-product-data-sheets/cement-grout-for-tile-and-stone-installation.ashx)

UL GREENGUARD Gold Certificate: [2600](http://certificates.greenguard.org/default.aspx?id=4870&t=cs)

LATICRETE Technical Data Sheets: [201](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds201.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [400](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds400.ashx)

1. ***Chemical Resistant Industrial Grouting (ANSI A118.5):***

NOTE TO SPECIFIER: The chemical resistance of grouts and pointing mortars for ceramic tile, mosaics, pavers, brick and stone will typically depend on:

1) reagent composition and/or concentration;

2) temperature;

3) duration of exposure.

Review test results conducted in conformance with current revision of ASTM C267 “Standard Test Methods for Chemical Resistance of Mortars, Grouts and Monolithic Surfaces and Polymer Concretes,” and manufacturer’s performance data and recommendations, in the context of expected chemical exposures.

Follow manufacturer‘s recommendations for minimum cure time prior to grouting. Prior to use, store liquid components of LATICRETE SPECTRALOCK® 2000 IG for 24 hours @ 70°F (21°C) to facilitate mixing and application. Substrate temperature must be 45-90°F (7-32°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. Pour LATICRETE SPECTRALOCK 2000 IG Part A and Part B into a clean mixing pail and mix thoroughly with a drill mixer until liquids are completely blended. Add all of the LATICRETE SPECTRALOCK Part C powder. Mix thoroughly with a high speed mixer (>450 rpm) for a minimum of 2 minutes and until uniformly blended. *This will aerate the grout to a fluffy mix.* Grout may remain in the bucket while grouting. 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. 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 15 minutes at 70°F (21°C) after grouting. Add Initial Wash cleaning additive to two (2) gallons (7.6 L) of clean water and mix until fully dissolved. Do not mix cleaning additive to grout mix! Using a circular motion, lightly scrub grout joints and the entire tile surface with a white nylon pad and plenty of the water/cleaning additive solution to loosen residue and form joints. Drag a clean damp sponge or damp white terry cloth towel diagonally over the scrubbed tile surface to remove froth and grout residue. Rinse sponge frequently and change rinse water often (approx. every 150 ft2 [13.9 m2]). Wait at least 90 minutes at 70°F (21°C) before commencing final wash. Add Final Wash cleaning additive to two (2) gallons (7.6 L) of clean water and mix until fully dissolved. Use the same cleaning method as the first wash but try to avoid contacting grout surface; clean tile only to loosen any remaining grout haze. Inspect joint for pinholes/voids and repair them with freshly mixed LATICRETE SPECTRALOCK 2000 IG. After approximately 12 hours, check for remaining haze and remove it by scrubbing with warm soapy water. Do not use acid cleaners on epoxy grout less than 7 days old.

NOTE TO SPECIFIER: specify color for each type/color of ceramic tile, mosaic, paver, brick, stone or trim unit.

*Use the following LATICRETE System Materials:*

 ***LATICRETE® SPECTRALOCK® 2000 IG***

References:

 LATICRETE Data Sheets: [030.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds0300_spectralock-2000-ig.ashx); [004.5](https://cdn.laticrete.com/~/media/installation_information/ds-0045-0712_sl-2000.ashx)

LATICRETE MSDS: [2000 IG A](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-spectralock-2000-ig-part-a-sds_us-english.ashx), [2000 IG B](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-spectralock-2000-ig-part-b-sds_us-english.ashx), [Part C Powder](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete/spectralock-part-c-colored-powder-sds-us-english.ashx), [Cleaning Additive](http://www.laticrete.com/Portals/0/msds/377.pdf)

Health Product Declaration: [2000 IG HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/tsis/2000-ig-hpd.ashx)

UL GREENGUARD Gold Certificate: [2000 IG](http://certificates.greenguard.org/default.aspx?id=9553&t=cs&)

 LATICRETE Technical Data Sheets: [111](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds111.ashx), [198](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds198.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [258](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds258.ashx), [400](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds400.ashx)

1. ***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.
2. Substrate joints must carry through, full width, to surface of tile, brick or stone.
3. Install expansion joints in tile, brick or stone work over construction/cold joints or control joints in substrates.
4. Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
5. Joint width and spacing depends on application - follow TCNA **“Handbook for Ceramic, Glass, and Stone Tile Installation”** Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
6. Joint width: ≥ ⅛” (3mm) and ≤ 1” (25mm).
7. Joint width: depth ~2:1 but joint depth must be ≥ ⅛” (3mm) and ≤ ½” (12mm).
8. 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 LATICRETE® LATASIL™ 9118 Primer for underwater and permanent wet area applications, or for porous stone (e.g. limestone, sandstone etc…) installations. 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 tile, brick or stone veneer. Use caulking gun, or other applicator, and completely fill the 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.

*Use the following LATICRETE System Materials:*

***LATICRETE LATASIL***

***LATICRETE LATASIL 9118 Primer***

References:

LATICRETE Data Sheets: [6200.1](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds62001_latasil.ashx),  [[6528.1](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds65281_latasil-9118-primer.ashx)](http://www.laticrete.com/Portals/0/datasheets/lds65281.pdf)

LATICRETE SDS: [LATASIL](https://cdn.laticrete.com/~/media/safety_datasheets/laticrete-latasil-sds-us-english.ashx), [Primer](http://www.laticrete.com/Portals/0/msds/9118.pdf)

VOC Emission Testing: [Certificate](https://cdn.laticrete.com/~/media/approvals_certifications/latasil-voc-emission-certificate.ashx), [Report](https://cdn.laticrete.com/~/media/approvals_certifications/latasil-voc-emission-test-report.ashx)

 LATICRETE Technical Data Sheets: [211](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds211.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx), [252](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds252.ashx)

1. ***Floor Sealer:***

NOTE TO SPECIFIER: Different finish types may require different sealers. Impervious ceramic, and porcelain tiles do not require sealing. For finishes other than natural stone, consult LATICRETE Technical Services at 888-786-6343 extension 2, or via email, at technicalservices@laticrete.com.

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

1. Ensure cap is closed and sealed, and shake well before use.
2. Mask off surfaces not intended to be treated.
3. Liberally apply an even coat of STONETECH® BulletProof Sealer using a paint pad, roller, brush or low-pressure sprayer.
4. Allow sealer to penetrate the surface for 10-15 minutes. During this time, keep the surface wet with sealer, adding more sealer as needed. DO NOT ALLOW SEALER TO COMPLETELY DRY ON THE SURFACE.
5. Thoroughly wipe dry the entire surface with clean absorbent towels.
6. A second coat may be needed for porous, absorbent surfaces. If a second coat is required, it should be applied within 30-40 minutes from the initial application as directed in steps 3-5.
7. Should a sealer residue appear, rewet the impacted section of the surface with sealer. Agitate the surface with a white nylon scrubbing pad to loosen residue and wipe dry with a clean, absorbent towel.
8. A full cure is achieved in 24-72 hours. Use of the treated surface may resume in 6-8 hours. If use of the surface must resume sooner, cover the treated surface with red rosin paper to protect it until full cure has been achieved.

9. Clean tools used during application with water.

**Recommended Surfaces:** Natural stone such as honed or textured marble, granite, limestone, travertine,

sandstone, Saltillo tile, and bluestone.

**Storage and Handling Instructions:** Avoid prolonged exposure to vapors. Use in a well-ventilated area. Do not ingest. Avoid contact with eyes and skin. KEEP OUT OF THE REACH OF CHILDREN. Do not freeze or store above 100˚F (38˚C). Do not mix with other chemicals. Do not release to natural waterways.

*Use the following LATICRETE® Systems Materials:*

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

References:

LATICRETE Data Sheets: [282.0](https://cdn.laticrete.com/~/media/product-documents/product-data-sheets/lds2820_stonetech-bulletproof-sealer.ashx) (Visit <https://laticrete.com> for data sheets, SDS and HPDs for other STONETECH sealer products)

 LATICRETE SDS: [Bulletproof](https://cdn.laticrete.com/~/media/safety_datasheets/bulletproof-sealer-sds_us-english.ashx)

 Health Product Declaration: [Bulletproof HPD](https://cdn.laticrete.com/~/media/health-product-datasheets/stonetech/bulletproof-hpd.ashx)

Maintenance & Care Instructions: [MCI101](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci101.ashx), [MCI104](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci104.ashx), [MCI105](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci105.ashx), [MCI106](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci106.ashx), [MCI107](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci107.ashx), [MCI108](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci108.ashx), [MCI109](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci109.ashx), [MCI110](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci110.ashx), [MCI111](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci111.ashx), [MCI112](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci112.ashx), [MCI113](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci113.ashx), [MCI114](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci114.ashx), [MCI115](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci115.ashx), [MCI116](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci116.ashx), [MCI117](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci117.ashx), [MCI118](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci118.ashx), [MCI119](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci119.ashx), [MCI120](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/mci120.ashx), [251](https://cdn.laticrete.com/~/media/support-and-downloads/technical-datasheets/tds251.ashx)

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 develop as a 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**

A. Protect finished installation under provisions of section 01 50 00. 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.

1. 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 mortars.
2. Due to the slow rate of portland cement hydration and strength development at low temperatures, protect installations exposed to these conditions from traffic for longer than normal periods. Protection applies to the substrate, the installation of adhesives and joint grouts, post-installation (rain and temperature protection) until suitable cure, and also the storage and handling of the cladding material. Extend period of protection of tile work at lower temperatures, below 60°F (15°C), and at high relative humidity (>70% R.H.) due to retarded set times of mortar/adhesives. For every 18°F (10°C) below 70°F (21°C) cementitious and epoxy materials take twice as long to cure. Large format tiles and stones also require longer curing periods in cooler temperatures. Keep all traffic off of finished work until full cure. Suitable protection is to be included in the scope of work. Each component must reach a proper cure prior to installing the subsequent installation product.
3. Tent / shade and heat areas that will be subjected to the elements or freezing temperatures during installation and cure periods.
4. Keep floors installed with epoxy adhesive closed to traffic for 24 hrs. at 70°F (21°C), and to heavy traffic for 48 hours @ 70°F (21°C) unless instructed differently by manufacturer. Use kneeling boards, or equivalent, to walk/work on newly tiled floors.
5. Cure tile work in swimming pools, fountains and other continuous immersion applications for 10 days for epoxy based grout and 14 days for latex portland cement based grout @ 70°F (21°C) before flood testing or filling installation with water.
6. 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.

 END OF SECTION

DS 230.6 – LATICRETE Master Specification – 09 30 00 – 25 Year Systems

R 6 February 2025

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† United States Patent No.: 6,881,768 (and other Patents)

△ United States Invention Patent No.: 6,784,229 B2**All references are the intellectual property of their respective owners:**

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American National Standard Specifications for Installation of Ceramic Tile. Tile Council of North America, Inc. Anderson, SC.

Annual Book of ASTM Standards. American Society for Testing and Materials. West Conshohocken, PA, 2001.

American National Standard Specifications for Ceramic Tile (ANSI A137.1). Tile Council of North America, Inc. Anderson, SC.

American National Standard Specifications for Glass Tile (ANSI A137.2). Tile Council of North America, Inc. Anderson, SC.

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ISO 13007 Ceramic Tiles – Grouts and Adhesives, International Organization for Standardization (ISO), Geneva, Switzerland.

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International Building Code, International Code Council. Country Club Hills, IL.

International Residential Code for One- and Two-Family Dwellings, International Code Council. Country Club Hills, IL.

LEED Reference Guide for Green Building Design and Construction. U.S Green Building Council. Washington, D.C.

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LEED Schools Reference Guide. U.S. Green Building Council. Washington D.C.

Lightweight Steel Framing Design Manual. Canadian Sheet Steel Building Institute. Cambridge, ON, Canada.

North American Specification for the Design of Cold-Formed Steel Structural Members. American Iron and Steel Institute. Washington D.C.

ICBO ER-4943P Product Technical Information. Steel Stud Manufacturers Association. Chicago, IL.

Lightweight Steel Framing Systems Manual. Metal Lath/Steel Framing Association Division. Glen Ellyn, IL.