SECTION 04 05 13

ADHERED MASONRY VENEER SYSTEM

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

*Copyright 2010 - 2015 ARCAT, Inc. - All rights reserved*

\*\* NOTE TO SPECIFIER \*\* LATICRETE International, Inc.; adhered masonry veneer, grouts, underlayments, waterproofing, crack control.  
This section is based on the products of LATICRETE International, Inc., which is located at:  
1 LATICRETE Park N.  
Bethany, CT 06524-3423  
Toll Free Tel: 800-243-4788  
Tel: 203-393-0010  
Fax: 203-393-1684  
Email: [request info (technicalservices@laticrete.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=LATICRETE+International,+Inc.&coid=33748&rep=&fax=203-393-1684&message=RE:%20Spec%20Question%20(04060lat):%20%20&mf=)  
Web: [www.laticrete.com/Mvis](http://www.laticrete.com/Mvis) | [www.drytek.com](http://www.drytek.com)    
 [ [Click Here](http://www.arcat.com/arcatcos/cos33/arc33748.html) ] for additional information.  
Laticrete is the world leader in high strength, shock and weather resistant installation systems for ceramic tile, pavers, brick, and stone. For over 50 years, Laticrete International has provided the technology and products to make innovative, permanent installations. Laticrete materials are designed to perform as a system, with fully compatible products for surface preparation, waterproofing, adhesives, and grouting to ensure single source responsibility.

1. GENERAL
   1. SECTION INCLUDES
      1. Adhered masonry veneer system including the following:
         1. Thin Brick veneer.
         2. Masonry veneer.
         3. Manufactured masonry veneer.
         4. Special purpose tile.
         5. Installation Products; adhesives, mortars, grouts and sealants.
         6. Waterproofing membranes for ceramic tile work.
         7. Anti-fracture membranes for ceramic tile work.
         8. Thresholds, trim, cementitious backer units and other accessories specified herein.

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

* 1. PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

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

* 1. PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

\*\* NOTE TO SPECIFIER \*\* The project system shall 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 while maintaining the maximum allowable deflection standard of L/600 under total anticipated load;

* 1. SYSTEM DESCRIPTION
     1. Scope of Work: Provide manufactured adhered veneer (units size thickness ranging from a minimum 1/4 inch (6 mm) up to a maximum 2-5/8 inches (65 mm) according to 2015 IBC - Chapter 14 Exterior Walls or applicable local building codes for thin adhered masonry veneer), veneer installation materials and accessories as indicated on drawings, as specified herein, and as required for complete and proper installation.

\*\* NOTE TO SPECIFIER \*\* Delete application not required.

* + - 1. Adhered Masonry Veneer installed over concrete masonry unit substrate with waterproofing membrane, latex Portland cement mortar and latex Portland cement pointing mortar.
      2. Adhered Masonry Veneer installed over steel framing, exterior rated sheathing, water resistive barrier, wire lath, floated latex Portland cement mortar, waterproofing membrane, latex Portland cement mortar and latex Portland cement pointing mortar
      3. Adhered Masonry Veneer installed over steel framing, exterior rated sheathing, cement backer board, waterproofing membrane, latex Portland cement mortar and latex Portland cement pointing mortar
    1. 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 500 mile radius (804 km) of the Project site;
       2. Adhesive products shall 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. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 03 39 00 - Concrete Curing.
    3. Section 03 41 10 - Plant-Precast Structural Concrete\*.
    4. Section 03 53 00 - Concrete Topping.
    5. Section 04 20 00 - Unit Masonry.
    6. Section 04 40 00 - Stone Assemblies.
    7. Section 07 13 00 - HDPE Membrane Waterproofing.
    8. Section 07 14 00 - Fluid-Applied Waterproofing.
    9. Section 07 50 00 - Membrane Roofing -Membrane Roofing.
    10. Section 07 91 26 - Joint Fillers.
    11. Section 09 01 20.91 - Plaster Restoration.
    12. Section - Gypsum Board.

\*\* NOTE TO SPECIFIER \*\* Edit for detail of applicable ALLOWANCES; coordinate with Section 01 21 29 - Quantity Allowances Allowances. Allowances in the form of unit pricing are sometimes used when the scope of the tile work at time of bid is undetermined. Delete if not required.

* 1. ALLOWANCES

\*\* 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. Delete if not required.

* 1. ALTERNATES
  2. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Iron and Steel Institute (AISI) Specification for the Design of Cold-Formed Steel Structural Members
    2. American National Standards Institute (ANSI):
       1. ANSI A137.1 American National Standard Specifications For Ceramic Tile.
       2. ANSI A108.01 - A108.17 American National Standard Specifications For The Installation Of Ceramic Tile.
       3. ANSI A118.1 - A118.15 American National Standard Specifications For The Installation Of Ceramic Tile.
    3. ASTM International (ASTM):
       1. ASTM C144 Standard Specification for Aggregate for Masonry Mortar.
       2. ASTM C150 Standard Specification for Portland Cement.
       3. ASTM C482 Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
       4. ASTM C503 Standard Specification for Marble Dimension Stone (Exterior).
       5. ASTM C794 Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
       6. ASTM C847 Standard Specification for Metal Lath.
       7. ASTM C920 Standard Specification for Elastomeric Joint Sealants.
       8. 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.
       9. ASTM C1670 -14 - Standard Specification for Adhered Manufactured Stone Masonry Veneer Units.
       10. ASTM C1780-14 - Standard Practice for Installation Methods for Adhered Manufactured Stone Masonry Veneer.
       11. ASTM D226 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing And Waterproofing.
       12. ASTM D227 Standard Specification for Coal-Tar Saturated Organic Felt Used in Roofing and Waterproofing.
       13. ASTM D1248 Standard Test Method for Staining of Porous Substances by Joint Sealants.
       14. ASTM D4397 Standard Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications.
       15. ASTM D4716 Standard Test Method for Determining the (In Plane) Flow Rate Per Unit Width and Hydraulic Transmissivity of a Geo-synthetic Using a Constant Head.
       16. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
       17. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
    4. Canadian Sheet Steel Building Institute (CSSBI) Lightweight Steel Framing Binder Publication 52M.
    5. Federal Housing Administration (FHA) Bulletin No. 750 Impact Noise Control in Multifamily Dwellings.
    6. Housing and Urban Development (HUD) TS 28 A Guide to Airborne, Impact and Structure-borne Noise-Control in Multifamily Dwellings.
    7. International Organization for Standardization (ISO) 13007 Standards for Grouts and Adhesives.
    8. Masonry Veneer Manufacturer's Association (MVMA) Installation Guide - www.ncma.org
    9. Materials And Methods Standards Association (MMSA) Bulletins 1-16.
    10. Metal Lath/Steel Framing Association (ML/SFA) 540 Lightweight Steel Framing Systems Manual.
    11. Steel Stud Manufacturers Association (SSMA) Product Technical Information and ICBO Evaluation Service, Inc. Report ER-4943P.
    12. Terrazzo, Tile And Marble Association Of Canada (TTMAC) Specification Guide 09300 Tile Installation Manual.
    13. Tile Council Of North America (TCNA) Handbook For Ceramic, Glass, and Stone Tile Installation.
  1. SYSTEM DESCRIPTION

\*\* NOTE TO SPECIFIER \*\* The systems below are examples; edit based on project specific conditions. Additionally, building code waivers may need to be obtained for large format "adhered veneer" exterior facade installations where tile / stone sizes: Exceed 36 inches (914 mm) in any face dimension; Exceed 5 square feet (0.46 square meters) in total facial area; or Are less than .25 inches (6 mm) thick. Consult with local building code / building code officials as required.

* + 1. Thin brick veneer, ceramic tile, or manufactured masonry veneer, installed over concrete walls using latex Portland cement mortar and latex Portland cement grout.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation instructions.
        4. Maintenance Data: Cleaning methods, cleaning solutions recommended, stain removal methods, as well as polishes and waxes recommended.
        5. Submit proof of warranty.

\*\* 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:
       2. Manufacturing plant locations for tile installation products.
       3. LEED Credits as listed in "LEED Credit Submittals"
       4. Recycled content; pre-consumer or post-consumer; or;

\*\* NOTE TO SPECIFIER \*\* 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.
      2. Contractor's certification of LEED Compliance: Submit Contractor's certification verifying the installation of specified LEED Compliant products.
      3. 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.
      4. Material 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.
       2. 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.
       3. 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 500 miles (804 km) of project site).
       4. 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.
       5. 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.
       6. 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).
    2. Submit shop drawings and manufacturers' product data.
    3. Submit samples of each type/style/finish/size/color of ceramic tile, thin brick, manufactured masonry veneer, mosaic, and trim unit.
    4. Submit manufacturers' installation instructions.
    5. Submit manufacturer's certification that the materials supplied conform to ASTM 1670-14 for Adhered Manufactured Stone Masonry Veneer Units or ANSI A137.1 for ceramic tile.
    6. Submit proof of warranty.
    7. Submit Health Product Declarations (HPD) for each tile installation material.
    8. Submit sample of installation system demonstrating compatibility/functional relationships between adhesives, mortars, grouts and other components. Submit proof from ceramic tile manufacturer or supplier verifying suitability of tile or stone veneer for specific application and use; including dimensional stability, water absorption, freeze/thaw resistance (if applicable), resistance to thermal cycling, and other characteristics that may project may require. These characteristics shall be reviewed and approved by the project design professional(s).
    9. Submit list from manufacturer of installation system/adhesive/mortar/grout identifying a minimum of three similar projects, each with a minimum of ten years service.
    10. For alternate materials, at least thirty days before bid date submit independent laboratory test results confirming compliance with specifications listed in Part 2 - Products.
  1. QUALITY ASSURANCE
     1. Veneer Manufacturer (Single Source Responsibility): Company specializing in ceramic tile, thin brick, manufactured masonry veneer, mosaic, and trim unit with three 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, manufactured masonry veneer, mosaic, and trim unit with five years documented experience with installations of similar scope, materials and design.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide mock-up of each type/style/finish/size/color of ceramic tile, thin brick, manufactured masonry veneer, mosaic, and trim unit along with respective installation adhesives, mortars, grouts and other installation materials.
       1. Construct areas designated by Architect.
       2. Do not proceed with remaining work until material, details and workmanship are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. As approved by Architect, mockup may be incorporated into finished work.
  1. 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 adhered masonry veneer and installation system materials in a dry location; handle in a manner to prevent chipping, breakage, and contamination.
     3. Protect latex additives, waterproofing membranes, 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.
  2. PROJECT/SITE CONDITIONS
     1. Provide ventilation and protection of environment as recommended by manufacturer.
     2. Prevent carbon dioxide damage to ceramic tile, thin brick, manufactured masonry veneer, mosaic, and trim unit as well as adhesives, mortars, grouts and other installation materials, by venting temporary heaters to the exterior.
     3. Maintain ambient temperatures not less than 50 degrees F (10 degrees C) or more than 100 degrees F (38 degrees C) during installation and for a minimum of seven days after completion. Setting of Portland cement is retarded by low temperatures. Protect work for extended period of time and from damage by other trades. Installation with latex Portland cement mortars requires substrate, ambient and material temperatures at least 37 degrees F (3 degrees C). There is to be no ice in substrates. Freezing after installation will not damage latex Portland cement mortars. Protect Portland cement based mortars and grouts from direct sunlight, radiant heat, forced ventilation (heat & cold) and drafts until cured to prevent premature evaporation of moisture. Epoxy mortars and grouts require surface temperatures between 60 degrees F (16 degrees C) and 90 degrees F (32 degrees C) at time of installation. It is the General Contractor's responsibility to maintain temperature control.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. PRE-INSTALLATION CONFERENCE
     1. 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, adhered masonry veneer subcontractor, adhered masonry veneer manufacturer, Installation System Manufacturer and any other parties who are involved in the scope of this installation shall attend the meeting.
  2. SEQUENCING AND SCHEDULING
     1. Coordinate installation of adhered masonry veneer work with related work.
     2. Proceed with adhered masonry veneer 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.
  3. 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 of 25 years. The manufacturer of adhesives, mortars, grouts and other installation materials shall provide a written twenty five 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 year warranty, which covers materials and labor - reference LATICRETE Warranty Data Sheet 230.15 for complete details and requirements.
  1. MAINTENANCE
     1. Submit maintenance data. Include cleaning methods, cleaning solutions recommended, stain removal methods, as well as polishes and waxes recommended.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. EXTRA MATERIALS STOCK
     1. Upon completion of the work of this Section, deliver to the Owner 2 percent minimum additional adhered masonry veneer 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 shall be from same production run or batch as original adhered masonry veneer and installation materials.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: LATICRETE International, Inc., which is located at: 1 LATICRETE Park N.; Bethany, CT 06524-3423; Toll Free Tel: 800-243-4788; Tel: 203-393-0010; Fax: 203-393-1684; Email: [request info (technicalservices@laticrete.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=LATICRETE+International,+Inc.&coid=33748&rep=&fax=203-393-1684&message=RE:%20Spec%20Question%20(04060lat):%20%20&mf=); Web: [www.laticrete.com/Mvis](http://www.laticrete.com/Mvis) | [www.drytek.com](http://www.drytek.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. EXTERIOR ADHERED VENEER MANUFACTURERS

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

* + 1. Subject to compliance with material characteristics and product performance requirements, provide products by one of the following manufacturers:
  1. EXTERIOR ADHERED VENEER MATERlALS

\*\* NOTE TO SPECIFIER \*\* edit for each tile type

* + 1. Tile:
    2. Grade:
    3. Size:
    4. Edge:
    5. Finish:
    6. Color:
    7. Special shapes
    8. Location:
  1. INSTALLATION ACCESSORlES - 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. Basis of Design: LATICRETE MVIS™ Air & Water Barrier.
       2. Hydrostatic Test (ASTM D4068): Pass.
       3. Elongation @ break (ASTM D751): 20-30%.
       4. System Crack Resistance (ANSI A118.12): Pass (High).
       5. 7 day Tensile Strength (ANSI A118.10): > 265 psi (1.8 MPa).
       6. 7 day Shear Bond Strength (ANSI A118.10); > 200 psi (1.4 MPa).
       7. 28 Day Shear Bond Strength (ANSI A118.4): > 214 psi (1.48 - 2.4 MPa).
       8. Service Rating (TCA/ASTM C627): Extra Heavy.
       9. Total VOC Content: < 0.05 mg/m3.
    2. 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. Basis of Design: LATAPOXY Waterproof Flashing Mortar.
       2. Breaking Strength (ANSI A118.10): 450-530 psi (3.1-3.6 MPa).
       3. Waterproofness (ANSI A118.10): No Water penetration.
       4. 7 day Shear Bond Strength (ANSI A118.10): 110-150 psi (0.8-1 MPa).
       5. 28 Day Shear Bond Strength (ANSI A118.10): 90-120 psi (0.6- 0.83 MPa).
       6. 12 Week Shear Bond Strength (ANSI A118.10): 110-130 psi (0.8-0.9 MPa).
       7. Total VOC Content: < 3.4 g/L.
    3. Sealer (Exterior Masonry Veneers): water-based formula specifically designed for topical application on porous stones in exterior applications.
       1. Basis of Design: LATICRETE STONETECH Heavy Duty Exterior Sealer.
    4. 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.
    5. 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.
    6. Cementitious backer board units: size and thickness as specified, complying with ANSI A118.9.
  1. INSTALLATION MATERlALS - 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 coats to be weather, frost, shock resistant and meet the following physical requirements:
       1. Basis of Design: LATICRETE MVIS Premium Mortar Bed.
       2. Compressive Strength (ANSI A118.7 Modified): > 4000 psi (27.6 MPa).
       3. Total VOC Content: < 0.05 mg/m3.
    2. Latex Portland Cement Thin Bed Mortar for thin set to be weather, frost, shock resistant, non-flammable and meet the following physical requirements:
       1. Basis of Design: LATICRETE MVIS™ Hi-Bond Veneer Mortar.
       2. Compressive strength (ASTM C270): >=2900 psi (20 MPa).
       3. Shear bond strength (ANSI A118.4 5.2.4): >=300 psi (2.1 MPa).
       4. Sag On Wall (EN 1308): 0.0mm.
       5. Total VOC Content: < 0.05 mg/m3.
    3. Latex Portland Cement Pointing Mortar to be weather, frost and shock resistant, as well as meet the following physical requirements:
       1. Basis of Design: LATICRETE MVIS Premium Pointing Mortar.
       2. Compressive Strength (ASTM C91): >=4100 psi (28.3 MPa).
       3. Total VOC Content: < 0.05 mg/m3.
    4. Expansion and Control Joint Sealant to be a one component, neutral cure, exterior grade silicone sealant and meet the following requirements:
       1. Basis of Design: LATICRETE MVIS Silicone Sealant.
       2. Tensile Strength (ASTM C794): 280 psi (1.9 MPa).
       3. Hardness (ASTM D751; Shore A): 25 (colored sealant) /15 (clear sealant).
       4. Weather Resistance (QUV Weather-meter): 10000 hours (no change).

1. EXECUTION
   1. SUBSTRATE EXAMINATION

\*\* NOTE TO SPECIFIER \*\*   
The project design shall 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.  
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 shall increase the performance capabilities of above-ground applications. However, the upgraded materials cannot mitigate structural deficiencies including substrates not meeting code requirements and/or over loading and other abuse of the installation in excess of design parameters.  
Should the architect/designer require a more stringent finish tolerance (e.g. 1/8 inch in 10 feet (3mm in 3m)), the subsurface specification shall reflect that tolerance, or the tile specification shall include a specific and separate requirement to bring the subsurface tolerance into compliance with the desired tolerance.  
Wall flashings and weeps for exterior adhered veneers are to be designed by the Project Architect / Engineer

* + 1. Verify that surfaces to be covered with ceramic tile, mosaic, masonry veneer, trim unit, and 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 adhered veneer installations when a cementitious bonding material will be used, maximum allowable variation in the substrate - for finishes with edges shorter than 15 inches (375 mm), maximum allowable variation is 1/4 inch in 10 feet (6 mm in 3 m) from the required plane, with no more than 1/16 inch variation in 12 inches (1.5 mm variation in 300 mm) when measured from the high points in the surface. For veneers with at least one edge 15 inches (375 mm) in length, maximum allowable variation is 1/8 inch in 10 feet (3 mm in 3 m) from the required plane, with no more than 1/16 inch variation in 24 inches (1.5 mm variation in 600 mm) 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 inch (0.8 mm) difference in height. For thick bed (mortar bed) adhered veneers, ceramic tile and stone installations, maximum allowable variation in the installation substrate to be (1/4 inch in 10 feet (6 mm in 3 m).
       5. Not leveled with gypsum or asphalt based compounds
    2. Concrete surfaces shall be:
       1. Cured a minimum of 28 days at 70 degrees F (21 degrees C), including an initial seven day period of wet curing;

\*\* NOTE TO SPECIFIER \*\* LATICRETE MVIS Hi-Bond Veneer Mortar 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 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.
  1. SURFACE PREPARATION - EXTERIOR ADHERED VENEERS - FRAMED CONSTRUCTS

\*\* NOTE TO SPECIFIER \*\* Select one of the following options based on project design intent

* + 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:
          1. American Iron and Steel Institute (AISI) "Specification for the Design of Cold-Formed Steel Structural Members" [www.steel.org];
          2. Canadian Sheet Steel Building Institute (CSSBI) "Lightweight Steel Framing Binder Publication 52M" [www.cssbi.ca];
          3. Steel Stud Manufacturers Association (SSMA) "Product Technical Information" and "ICBO Evaluation Service, Inc. Report ER-4943P" [www.ssma.com];
          4. Metal Lath/Steel Framing Association "Steel Framing Systems Manual."
       2. Prior to commencing work, installer shall submit to Architect/Structural Engineer for approval, shop drawings showing wall/facade construction and attachment details. All attachments shall be designed to prevent transfer of building or structural movement to the wall/facade.
       3. Construct all framing with galvanized or other rust resistant steel studs and channels; minimum requirements:
          1. Stud Gauge: 16 gauge (1.5 mm);
          2. Stud Steel: conforming to ASTM A570 with a minimum yield point of 50 ksi (345 MPa);
          3. Stud Spacing: not to exceed 16 inches (400 mm) on center;
          4. Stud Width: 6 inches (150 mm);
          5. Horizontal Bridging: Not to exceed 4 feet (1.2 m) on center; 16 gauge CR channel typical or as specified by structural engineer.
       4. 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 shall be properly aligned, square and true.
       5. 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 1/8 to 3/16 inch (3 to 5mm) between sheets.
       6. Fasten the exterior rated sheathing with 7/8 inch (22 mm) 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 inches (150 mm) at the edges and every 8 inches (200 mm) in the field. Stagger placement of screws at seams. Place screws no less than 3/8 inch (9 mm), and no more than 1 inch (25 mm), from board edges.
       7. Follow board manufacturer's installation instructions.
       8. Compliance with design criteria and state and local building codes shall 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.
    2. 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:
          1. American Iron and Steel Institute (AISI) "Specification for the Design of Cold-Formed Steel Structural Members" [www.steel.org];
          2. Canadian Sheet Steel Building Institute (CSSBI) "Lightweight Steel Framing Binder Publication 52M" [www.cssbi.ca];
          3. Steel Stud Manufacturers Association (SSMA) "Product Technical Information" and "ICBO Evaluation Service, Inc. Report ER-4943P" [www.ssma.com];
          4. Metal Lath/Steel Framing Association "Steel Framing Systems Manual."
       2. Prior to commencing work, installer shall submit to Architect/Structural Engineer for approval, shop drawings showing wall/facade construction and attachment details. All attachments shall be designed to prevent transfer of building or structural movement to the wall/facade.
       3. Construct all framing with galvanized or other rust resistant steel studs and channels; minimum requirements:
          1. Stud Gauge: 16 gauge (1.5 mm);
          2. Stud Steel: conforming to ASTM A570 - latest edition with a minimum yield point of 50 ksi;
          3. Stud Spacing: not to exceed 16 inches (400 mm) on center;
          4. Stud Width: 6 inches (150 mm);
          5. Horizontal Bridging: Not to exceed 4 feet (1.2 m) on center; 16 gauge CR channel typical or as specified by structural engineer.
       4. 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 shall be properly aligned, square and true.
       5. 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 1/8 to 3/16 inch (3 to 5 mm) between sheets.
       6. Fasten the CBU with 7/8 inch (22mm) minimum length, non-rusting, self-imbedding screws for metal studs (BUILDEXSYMBOL 226 "Symbol" 10 Catalog item 10-24 17/16 Wafer T3Z or equivalent). Fasten the boards every 6 inches (150 mm) at the edges and every 8 inches (200 mm) in the field. Stagger placement of screws at seams. Place screws no less than 3/8 inch (9 mm), and no more than 1 inch (25 mm), from board edges.
       7. Tape all the board joints with the alkali resistant 2 inches (50 mm) wide reinforcing mesh provided by the CBU manufacturer imbedded in the same mortar used to install the adhered veneer, ceramic tile, mosaic, pavers, brick or stone.
       8. Compliance with design criteria and state and local building codes shall 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.
  1. INSTALLATION ACCESSORIES - EXTERIOR ADHERED VENEERS

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Detail Drawings: LATICRETE MVIS 103, LATICRETE MVIS E101, LATICRETE MVIS E102, LATICRETE MVIS E103, LATICRETE MVIS E104  
LATICRETE Data Sheets: 661.0, 661.5  
LATICRETE MSDS: Air & Water Barrier, Fabric  
LATICRETE Technical Data Sheets: 177, 217, 410M

* + 1. Weather Resistant Barrier (WRB) or equivalent - 2 layers or as detailed and specified by Architect
       1. Install per WRB manufacturer's written installation instructions.
       2. Use the following LATICRETE System Materials: LATICRETE MVIS Air & Water Barrier
    2. Air and Water Barrier (exterior adhered veneers):

\*\* NOTE TO SPECIFIER \*\* 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 facades/walls. 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. 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 inches (50 mm) 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.
      2. 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 inch (3 mm) by applying a liberal coat of LATICRETE MVIS Air & Water Barrier approximately 8 inches (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 inches (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 inch (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 inches (200 mm) wide over seam. While LATICRETE Air & Water Barrier is still wet embed 6 inches (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. LATICRETE MVIS Air & Water Barrier will dry to a uniform olive green color when it's dry to touch.
      3. 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 inch (3 mm) in width. Apply a liberal coat of LATICRETE MVIS Air & Water Barrier approximately 8 inches (200 mm) wide over substrate cracks, cold joints, and control joints using a paint brush or heavy napped paint roller.
      4. Movement Joint Loop (Slip Joint) Treatment - Apply a liberal coat of LATICRETE MVIS Air & Water Barrier, approximately 8 inches (200 mm) wide over the areas. Then immediately embed and loop the 6 inches (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 layers of LATICRETE Waterproofing/Anti-Fracture Fabric.
      5. 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 degrees F (21 degrees 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 to 2 hours at 70 degrees F (21 degrees 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 MVIS Air and Water Barrier up to all penetrations through the membrane.

\*\* NOTE TO SPECIFIER \*\* 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 inches to 4 inches (50mm to 100mm) (see Illustration 1,2,4 & 7).

* + - 1. Dry coat thickness shall be 20 to 30 mil (0.02 to 0.03 inch or 0.5 to 0.8 mm); 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 shall be used to pre-treat cracks, joints, curves, corners, drains, and penetrations with LATICRETE MVIS™ Air & Water Barrier.
    1. 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 shall 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 shall not exceed 100 feet (30 m) in length and 3/8 inch (10 mm) in diameter.
       1. 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 degrees F (21 degrees 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 shall be checked periodically using a wet film gauge.
       2. 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 shall 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 shall be taped off and protected from any potential overspray.
    2. 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 degrees F (21 degrees C) and 50% RH. For temperatures between 45 degrees F and 69 degrees F (7 degrees C to 21 degrees C) allow a minimum 24 hour cure period.
  1. INSTALLATION - EXTERIOR ADHERED VEENERS

\*\* NOTE TO SPECIFIER \*\*   
Exterior adhered veneer installation techniques shall 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.  
The optimum conditions for installation of direct adhered cladding are temperatures between 60 degrees and 80 degrees F (16 degrees and 27 degrees C), with 50% relative humidity and minimal wind. However, these conditions are atypical, so provisions shall be made for variations in climatic conditions.  
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 degrees F (10 degrees C) above 70 degrees F (21 degrees C) cementitious and epoxy materials cure twice as fast. For every 18 degrees F (10 degrees C) below 70 degrees F (21 degrees C) cementitious and epoxy materials take twice as long to cure.  
Tent / shade and heat areas that will be subjected to the elements and /or freezing temperatures during installation and cure periods.  
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.  
Consult LATICRETE TDS 176M "Hot Weather Veneer Installations", available at www.laticrete.com, for more information.  
Consult LATICRETE TDS 175M "Cold Weather Veneer Installation, available at www.laticrete.com, for more information.

* + 1. 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.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheets: 263.0  
LATICRETE MSDS: Premium Mortar Bed  
GREENGUARD Certificates: Premium Mortar Bed  
LATICRETE Technical Data Sheets: 105, 114, 122, 204

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS™ Premium Mortar Bed.
    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.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheets: 263.0  
LATICRETE MSDS: Premium Mortar Bed  
GREENGUARD Certificates: Premium Mortar Bed  
LATICRETE Technical Data Sheets: 105, 114, 122, 204

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS Premium Mortar Bed.
    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 shall be covered while the mortar surface is still wet and tacky. When installing large format (> 8 inches x 8 inches (200 mm x 200 mm) 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 trowelling 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.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheet: 246.0  
LATICRETE MSDS: Hi-Bond Veneer Mortar  
GREENGUARD Certificate: Hi-Bond Veneer Mortar  
LATICRETE Technical Data Sheets: 105, 126, 195, 208

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS™ Hi-Bond Veneer Mortar.
    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 1/2 inch (12 mm) thickness. DO NOT COVER JUST THE PERIMETER! Buttered masonry veneer units shall 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.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheet: 246.0  
LATICRETE MSDS: Hi-Bond Veneer Mortar  
GREENGUARD Certificate: Hi-Bond Veneer Mortar  
LATICRETE Technical Data Sheets: 105, 126, 195, 208

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS Hi-Bond Veneer Mortar.
    1. Exterior Adhered Veneers (Stacked Veneer - 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 1/2 inch (12 mm) thickness. DO NOT COVER JUST THE PERIMETER! Buttered masonry veneer units shall 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 shall be applied from the corners toward the middle of the wall, and from the bottom toward the top of the wall.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheet: 246.0  
LATICRETE MSDS: Hi-Bond Veneer Mortar  
GREENGUARD Certificate: Hi-Bond Veneer Mortar  
LATICRETE Technical Data Sheets: 105, 126, 195, 208

* + - 1. Use the following LATICRETE System Materials:
         1. LATICRETE MVIS Hi-Bond Veneer Mortar

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

* + 1. Grouting or Pointing (Exterior Adhered Veneers):Pointing Mortar (for joints up to 1/2 inch (12 mm): Allow thin brick, masonry, and stone installations to cure a minimum of 24 hours @ 70 degrees F (21 degrees 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 shall be between 40 to 90 degrees F (4-32 degrees 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 shall 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.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheets: 274.0  
LATICRETE MSDS: Premium Pointing Mortar  
GREENGUARD Certificate: Premium Pointing Mortar  
LATICRETE Technical Data Sheets: 201, 400

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS Premium Pointing Mortar
    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 shall always turn up against the area or material which is being protected in order to prevent water penetration. Provision shall 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 to 33 inches (600 to 840 millimeters) at the base of the flashing. Flashings shall form a drip edge and extend a minimum of 3/8 inch (10 millimeters) 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, shall 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.
    2. Weeps / Pressure Equalization Vents: To be designed and detailed by project architect / engineer. Most building codes permit weeps no less than 3/16 inch (5 millimeters) in diameter and spaced no more than 33 inches (840 millimeters) on-center. Wick and tube weep spacing recommended at no more than 16 inches (400 millimeters) 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 2 feet (600 millimeters) 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.
    3. 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 weeks after enclosure of the building. Placement, composition and detail to be provided by project design professional.
    4. Expansion and Control Joints: Provide control or expansion joints as located in contract drawings and in full conformity, especially in width and depth, with architectural details.
       1. Substrate joints shall carry through, full width, to surface of tile, brick, masonry veneer or stone.
       2. Install expansion joints in tile, brick, masonry veneer or stone work over construction/cold joints or control joints in substrates.
       3. Install expansion joints where tile, brick, masonry veneer or stone abut restraining surfaces (such as perimeter walls, curbs and columns), changes in plane and corners.
       4. Joint placement depends on application - Follow the Masonry Veneer Manufacturers Association's (MVMA) Installation Guide and Detailing Options for Compliance with ASTM C1780.
       5. Joint width: >= 1/8 inch (3mm) and <= 1 inch (25mm).
       6. Joint width: depth ~2:1 but joint depth shall be >= 1/8 inch (3 mm) and <= 1/2 inch (12 mm).
       7. 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 91 26 - Joint Fillers. 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 smears or excess sealant off the face of non-glazed tile, brick, stone or other absorptive surfaces immediately.

\*\* NOTE TO SPECIFIER \*\* References:   
LATICRETE Detail Drawings: WP300, WP301, WP302, WP303, EJ-01, EJ-06, EJ-08,  
EJ-09, EJ-10, EJ-12, EJ-13, EJ-14   
(Sealant treatments only)

* + - 1. LATICRETE Data Sheets: 233.0, 6526.1
      2. LATICRETE MSDS: LATICRETE MVIS Silicone Sealant, Primer

LATICRETE Technical Data Sheets: 211, 252

* + - 1. Use the following LATICRETE System Materials: LATICRETE MVIS Silicone Sealant, LATICRETE LATASIL 9118 Primer

\*\* 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.

* + 1. Sealer (Exterior Adhered Veneers): 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 degrees Fahrenheit and 80 degrees Fahrenheit (10 degrees Celsius and 26.7 degrees Celsius). 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 using a paint pad, paint brush, paint roller, or low-pressure solvent-resistant sprayer. Do not thin before using.
       4. Allow sealer to penetrate the surface for 10 to 15 minutes; denser materials may require more time for the sealer to penetrate. During this time, distribute excess sealer over the entire area to ensure even penetration.
       5. Thoroughly wipe down the entire surface with a clean, dry cloth to completely remove all excess sealer from the surface. DO NOT ALLOW SEALER TO COMPLETELY DRY ON THE SURFACE.
       6. A second coat may be needed for porous, absorbent surfaces. If a second coat is required, it shall be applied one hour after the initial application as directed in steps 2 through 5.
       7. 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.
       8. Keep newly sealed installations free from contamination for 6 hours at 70 degrees Fahrenheit / 21 degrees Celsius.
       9. A full cure is achieved in 24 to 72 hours at 70 degrees Fahrenheit / 21 degrees Celsius. Use of the treated surface may resume in 6- 8 hours. If use of the surface shall resume sooner, cover the treated surface with red rosin paper to protect it until full cure has been achieved.
       10. Rags and equipment that are wet with sealer may be flammable. Clean up promptly after work is completed. Clean equipment with mineral spirits and allow to dry in a well-ventilated area. Allow rags to dry in a well-ventilated area out of reach. When, dry, dispose of in accordance with local waste disposal regulations.
       11. Recommended Surfaces: Brick; concrete / masonry; homogeneous granite; veined granite; unpolished, honed and textured limestone; quartzite, bluestone, sandstone, slate, and travertine
       12. 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 degrees Fahrenheit /38 degrees Celsius. Do not mix with other chemicals. Do not release to natural waterways.
       13. Use the following LATICRETE Systems Materials: LATICRETE STONETECH® Heavy Duty Exterior Sealer.

\*\* NOTE TO SPECIFIER \*\* References:  
LATICRETE Data Sheets: Heavy Duty Exterior Sealer  
LATICRETE MSDS: Heavy Duty Exterior Sealer

* + 1. Adjusting: Correction of defective work for a period of one 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. CLEANING
     1. 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.
  2. PROTECTION
     1. Protect finished installation.
     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 degrees F (15 degrees C), and at high relative humidity (> 70% R.H.) due to retarded set times of mortar/adhesives. For every 18 degrees F (10 degrees C) below 70 degrees F (21 degrees C) installation materials take twice as long to cure. Large format tiles and stones also require longer curing periods in cooler temperature / high humidity environments.
     3. Keep finished work undisturbed until full cure. Suitable protection is to be included in the scope of work.
     4. Each component shall reach a proper cure prior to installing the subsequent installation product.
     5. Tent / shade and heat areas that will be subjected to the elements, or freezing temperatures, during installation and cure periods.
     6. Protect newly installed exterior adhered veneer installations from direct exposure to rain for 7 days at 70 degrees Fahrenheit / 21 degrees Celsius. 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, and 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.
     7. Replace, or restore, work of other trades damaged or soiled by work under this section.
  3. HEALTH AND SAFETY
     1. 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 shall be disposed of as per local, state or federal regulations.

END OF SECTION