



Veneer Stone Specification

CSI SECTION 04 70 00

CSI SECTION 04 70 00 - MASONRY SIMULATED BRICK AND STONE

SYSTEM OVERVIEW

This section is based on products from Mer-Krete Systems a division of Parex USA, Inc. 4125 E. LaPalma Ave., Suite 250, Anaheim, CA 92807, (800) 851-6303. Mer-Krete Systems offers a complete line of products for waterproofing, setting and grouting veneer stone and dimension stone, including latex-Portland cement mortars and grouts, epoxy mortars and grouts, joint and skim coat material for cementitious backer units, leveling material for concrete, and a waterproof membrane for stone applications.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Waterproof coatings, setting materials, grouting materials and methods of installation for veneer and dimension stone.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Section 04 20 00 - Unit Masonry
- C. Section 04 70 00 – Masonry - Simulated Brick and Stone Masonry

1.3 REFERENCES

- A. ANSI A108.01 General Requirements: Subsurfaces and Preparations by Other Trades.
- B. ANSI A108.02 General Requirements: Materials, Environmental, and Workmanship.
- C. ANSI A108.10 Installation of Grout in Stonework.
- D. ANSI A108.13 Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Stone and Dimension Stone.
- E. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
- F. ANSI A118.6 Specifications for Ceramic Stone Grouts.
- G. ANSI A118.10 Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile And Dimension Stone Installations

1.4 SYSTEM DESCRIPTION

- A. Description:
 - 1. Waterproof coating, setting materials, grouting materials and methods of installation for veneer and dimension stone over cement board. Cement board is installed over an approved sheathing and a code approved water resistant barrier
- B. Functional Criteria:
 - 1. Performance Requirements
 - a. Shall meet the testing requirements of the Mer-Krete Product Performance Sheet.
 - 2. Substrate Systems:
 - a. Shall be engineered to withstand applicable design loads including required safety factor.
 - b. Maximum deflection of substrate system shall be as required by the veneer masonry manufacturer
 - c. Substrate dimensional tolerance: Flat within 1/4 in (6.4 mm) in any 4 ft (122 cm) radius.
 - d. Surface irregularities: Sheathing not over 1/8 in (3 mm); masonry not over 3/16 in (4.8 mm).
 - 3. Install control joints and expansion joints in adhered masonry veneer work in accordance with [TCNA Detail EJ171].
 - 4. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and veneer units. Do not saw-cut joints after installing units.
 - a. Locate joints in veneer surfaces directly above joints in concrete substrates.
 - b. Joint width and spacing depends on application - follow TCA "[Handbook for Ceramic Tile Installation](#)" Detail "EJ-171 Expansion Joints" or consult sealant manufacturer for recommendation based on project parameters.
 - c. 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. Install appropriate Backing Material (e.g. closed cell backer rod) based on expansion joint design and as specified in Section 07920.

EDITOR NOTE: INDICATE JOINT WIDTH ON DRAWINGS FOR MOVEMENT AND EXPANSION AND CONTRACTION CONDITIONS. CONSULT WITH SEALANT MANUFACTURER FOR JOINT DESIGN RECOMMENDATIONS

1.5 SUBMITTALS

- A. General: Submit Samples, and Certificates in accordance with Division 1 General Requirements Submittal Section.
- B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make available, at job site, approved samples.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer: Shall have manufactured waterproofing products in United States for at least ten years.
 - 2. Applicator: Completed veneer stone installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance..

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver Mer-crete products in original packaging with manufacturer's identification.
- B. Storage: Store materials supplied by Parex USA in a cool, dry location, out of sunlight, protected from weather and other harmful environment, and at a temperature above 40 °F (4 °C) and below 110 °F (43 °C) in accordance with manufacturer's instructions.

1.8 PROJECT / SITE CONDITIONS

- A. Installation Ambient Air Temperature: Minimum of 50 °F (10 °C) and rising, and remain so for 72 hours thereafter
- B. Substrate Temperature: Do not apply Mer-Krete materials to substrates whose temperature are below 40 °F (4 °C) or contain frost or ice.
- C. Inclement Weather: Do not apply Mer-krete materials during inclement weather, unless appropriate protection is employed.
- D. Prior to installation, the wall shall be inspected for surface contamination, or other defects that may adversely affect the performance of the Mer-Krete materials and shall be free of residual moisture.
- E. Vent temporary heaters to outside to avoid carbon dioxide damage to new stonework.

1.9 COORDINATION AND SCHEDULING:

Coordination: Coordinate Mer-Krete installation with other construction operations.

1.10 WARRANTY

Warranty: Upon request, at completion of installation, provide Mer-Krete Systems Limited Warranty. See warranty schedule for available Warranties.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Mer-Krete Systems /Parex USA , Inc., 4125 E. LaPalma Ave., Suite 250, Anaheim, CA 92807
 - 1. Obtain components of Mer-krete products from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from Parex USA for this project.
 - 2. Source Limitations for: Obtain each Veneer Stone or thin brick color, grade, finish, type, composition, and variety of stone from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties without delaying the Work.

2.2 MATERIALS

- A. Veneer Materials
 - 1. Veneer [, Type A]: Thin Brick XXXX; as follows
 - a. Manufacturer:
 - b. Size: [____].
 - c. Thickness: [____].
 - d. Pattern: [____] [____].
 - e. Colour: [____] [____] [as scheduled] [____], to match approved sample range.
 - f. Finish: [____] [____] [____].
 - 2. Veneer [, Type B]: Veneer Stone XXXX; as follows:
 - a. Manufacturer
 - b. Size: [____].
 - c. Thickness: [____].
 - d. Pattern: [____] [____].
 - e. Color: [____] [____] [as scheduled] [____], to match approved sample range.
 - f. Finish: [____] [____] [____]
 - 3. Molding and Trim pieces as follows: [____] [____] [____] [____].
- B. Cement Board Waterproofing: Load Bearing, Bonded, Waterproof Membrane For Thin-Set Ceramic Tile And Dimension Stone Installations; ANSI A118.10:
 - 1. SP1 HydroGuard Waterproofing Membrane; an elastomeric waterproofing and crack isolation membrane.

- C. Specialty Adhesive Mortar Latex-Portland Cement Stone Setting Mortar ANSI A118.4.
 - 1. Mer-Lite 820; a lightweight medium bed latex modified Portland cement dry set mortar for installations requiring a medium bed mortar to compensate for irregularities in the substrate or veneer stone.
- D. Sanded Portland Cement Grout; ANSI A118.6
 - 1. Sanded PaverGrout; a sanded Portland cement grout, color #_____ Forms a colorfast, dense matrix grout for veneer stone with widths 1/4 inch to 1 inch.

2.3 RELATED MATERIALS AND ACCESSORIES

- A. Cement Board
 - 1. Minimum ½ inch (13 mm) thick PermaBase® Brand Cement Board complying with ASTM C1325 or Cement Board complying with ASTM C1325 with fiber-mat reinforced edges other approved by Parex USA.
- B. Substrate Materials:
 - 1. Sheathing shall be installed in accordance with its industry standards and applicable building code.
 - 2. Gypsum Sheathing shall conform to ASTM C79, C1396, or C1177 glass mat gypsum sheathing, minimum thickness 1/2" (12.7 mm).
 - 3. Plywood shall be not less than 15/32" (11 mm) thick, PS-1 Exposure 1 or Exterior grade.
 - 4. Oriented strand board (OSB) shall be not less than 7/16" thick (11.1 mm), PS-2 Exposure 1.
 - 5. For wood-based sheathing (Plywood and OSB), comply with APA-The Engineered Wood Association spacing recommendations for edge and end joints. Gap wood sheathing panels minimum 1/8".
 - 6. Sheathing shall be protected from weather before, during and after application of Teifs NuTech Stucco.
- C. Water-resistive Barrier (applied over the substrate materials):
 - 1. Water Resistive Barrier Coating
 - a. Parex Keyguard water resistive barrier coating (2 coats required on OSB and Plywood)
 - 1) Treat all sheathing joints with 495 KeyGuard roll on water-resistive barrier and embed Parex 396 Sheathing Tape.
 - 2) Apply 495 KeyGuard roll on Water-resistive barrier to the surface of the appropriate substrate (Minimum 2 coats on plywood, concrete and masonry).
 - 3) Dow Weathermate Sill Seal foam Gasket: Polyethylene drainage strips ¼" x 3.5" x 50 ft rolls
 - 2. DuPont Tyvek® StuccoWrap® or DrainWrap
 - 3. Flashing Membrane: Self sealing, Polyester faced, rubberized asphalt membrane, 30 mils (0.76 mm) thick.
- D. Flashing: Refer to Division 7 Flashing Section for flashing materials.

EDITOR NOTE: PART 3 EXECUTION BELOW INVOLVES ONSITE WORK AND SHOULD INCLUDE PROVISIONS FOR INCORPORATING MATERIALS AND PRODUCTS INTO PROJECT. TYPICALLY, "CONDITIONS OF THE CONTRACT" ESTABLISH RESPONSIBILITY FOR "MEANS, METHODS, TECHNIQUES, AND SAFETY" REQUIREMENTS OF CONSTRUCTION WITH CONTRACTOR. SPECIFICATIONS SHOULD AVOID CONFLICTS WITH THIS CONTRACTUAL PRINCIPLE.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify project site conditions under provisions of Section 01 00 00.
- B. Compliance: Comply with manufacturer's instructions for installation of Mer-Krete products
- C. Substrate Examination: Examine prior to Mer-Krete product installation as follows:
 - 1. Substrate shall be of a type approved by Parex USA ..
 - 2. Substrate shall be examined for soundness, and other harmful conditions.
 - 3. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
 - 4. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.

- D. Sealants and Backer Rod: To be installed, where required, in accordance with the sealant manufacturer's specifications and published literature, and using the sealant manufacturer's recommended primers.
- E. Advise Contractor of discrepancies preventing installation of the Mer-Krete products. Do not proceed with the work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Protection: Protect surrounding material surfaces and areas during installation of system.
- B. Clean surfaces thoroughly prior to installation.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 APPLICATION

- A. General: Installation shall conform to this specification and Mer-Krete Systems written instructions and drawing details.
 - 1. Comply with applicable ANSI 108 series of the "American National Standard Specifications for the Installation of Ceramic Tile."
 - 2. Comply with TCA installation methods indicated or, if not otherwise indicated, as applicable to installation conditions shown.
 - 3. Extend stone work into recesses and under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown.
 - 4. Accurately form intersections and returns. Perform cutting and drilling of stone without marring visible surfaces. Carefully grind cut edges of stone abutting trim, finish or built-in items for straight aligned joints.
 - 5. Unless otherwise shown, lay stone in grid pattern. Layout stone work and center stone fields in both directions in each space or on each wall area. Adjust to minimize stone cutting. Provide uniform joint widths, unless otherwise shown.
 - 6. Locate expansion joints and other sealant filled joints, including control, contraction and isolation joints, where indicated and approved by Architect.
 - 7. Prepare joints and apply sealants to comply with referenced installation standards and sealant manufacturer's instructions.
- B. Cement Board Sheathing Joints, Cracks and Protrusions
 - 1. Pre fill all substrate cracks, cold and control joints with Mer-Krete Latex Modified Thinset's or PUC caulking.
 - 2. Fill all voids with Mer-Krete Latex Modified Thin set's to within a minimum of 1/8".
 - 3. Apply a liberal coat of SP1 HydroGuard Waterproofing Membrane liquid around joints, crack and protrusions.
 - 4. Embed Mer-Krete 8" reinforcing fabric into the wet SP1 HydroGuard Waterproofing Membrane, cover with a second coat of SP1 HydroGuard Waterproofing Membrane, "sandwiching" the reinforcing fabric. When the membrane has dried to an emerald green color, apply an additional application to prevent pinholes.
- C. Waterproof Membrane:
 - 1. Install SP1 HydroGuard waterproof membrane, where required, to comply with manufacturer's instructions.
 - 2. Install waterproof membrane in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.13.
 - 3. Review the installation and plan the application sequence.
- D. Expansion joints:
 - 1. SP1 HydroGuard must not be applied unsupported to bridge across expansion joints. The joint must be cleaned to remove any loose debris and an opened or closed – cell backer rod is installed to the joint to the proper depth as specified by designer.
 - 2. Mer-Krete's PUC sealant or Mer-Krete approved equal is pressed into the joint, coating the sides and leaving the joint flush with the surface. After the sealant is dry, the SP1 HydroGuard membrane is applied following the "Membrane application" instructions above.

- E. Thin Brick/Veneer Stone
1. Install stone to comply with referenced TCA and ANSI installation standards, using setting materials indicated.
 2. Install Mer-Lite 820 latex Portland cement mortar in compliance with current revisions of ANSI A108.1 (A-1 through A-3) and ANSI A108.5 (A-4.3).
 3. Use the appropriate trowel notch size to ensure proper bedding of the tile, brick or stone selected. Work the latex Portland cement mortar into good contact with the substrate and comb with notched side of trowel.
 4. Spread only as much latex Portland cement mortar as can be covered while the mortar surface is still wet and tacky.
 5. Fit thin brick units around corners, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance.
 6. Make cut edges smooth, even and free from chipping. Do not split veneer units
 7. Expansion Joints: The veneer brick or stones are installed over the membrane, leaving a gap over the joint as specified by the designer. After the veneer is set, the joint must be filled as specified by the designer.
- F. Curing set veneer brick/stone:
1. 72 hours before grouting when the temperature is low or the humidity is high.
 2. 48 hours before grouting when hot, dry conditions exist.
 3. Check the bond strength carefully before grouting.
- G. Grouting
1. Grout thin brick to comply with the requirements of the Cement Grout (ANSI A118.7) standards.
 2. 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).
 3. Measure the specified amount of clean potable water. Pack joints full and free of voids/pits. Initial cleaning can begin as soon as grout has become firm, typically 20-30 minutes after grouting depending on temperature.
 4. Drag a clean towel dampened with water, or wipe a clean, dampened sponge, diagonally over the veneer face to remove any grout haze left after “squeegeeing.” Rinse towel/sponge frequently and change rinse water at least every 200 ft² (19 m²). Repeat this cleaning sequence again if grout haze is still present.
 5. Allow grout joints to become firm. Buff surface of grout with clean coarse cloth. Inspect joint for pinholes/voids and repair them with freshly mixed grout.
 6. Within 24 hours, check for remaining haze and remove it with warm soapy water and a nylon scrubbing pad, using a circular motion, to lightly scrub surfaces and dissolve haze/film. Do not use acid cleaners on latex Portland cement mortar grout less than 7 days old.
 7. 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.
 8. Keep all control and expansion joints free of setting materials.

3.5 CLEAN-UP

- A. Removal: Remove and legally dispose of Mer-krete and Veneer component debris material from job site.
- B. Clean exposed surfaces using materials and methods recommended by the manufacturer of the material or product being cleaned. Remove and replace work that cannot be cleaned to the satisfaction of the Project Designer/Owner.
- C. Clean work area of foreign materials resulting from operations.
- D. Acid Cleaning: Stone may be cleaned with sulfamic acid solutions complying with the following:
1. Only if permitted by stone and grout manufacturer’s printed instructions.
 2. Protect metal surfaces, cast iron and vitreous plumbing fixtures from effects of acid cleaning.
 3. Flush surface with clean water before and after cleaning

3.6 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Upon completion of setting and grouting, clean all stone surfaces so they are free of foreign matter.
- C. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully cured and dry.
- D. When recommended by veneer stone manufacturer, apply a protective coat of neutral protective cleaner. Protect installed stone work with heavy covering during construction period to prevent damage.
- E. Protective Coatings: Before final inspection, remove protective coverings and rinse neutral cleaner from stone surfaces.
- F. Finished Veneer Stone Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective stone work.

END OF SECTION

Disclaimer This guide specification is intended for use by a qualified designer. The guide specification is not intended to be used verbatim as an actual specification without appropriate modifications for the specific use intended. The guide specification must be integrated into and coordinated with the procedures of each design firm, and the requirements of a specific project.



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