**CSI SECTION 04 05 13 Adhered Masonry Veneer Systems - Exterior Facade**

 **09 30 13 Ceramic Tiling - Exterior facade**

SPECIFICATION OVERVIEW

*(This overview is not part of the specification)*

*Parex USA offers a complete line of products for waterproofing and installing thin adhered veneers, including polymer modified Portland cement mortars, joint and skim coat material for cementitious backer units, leveling material for concrete and water-resistive and air barrier coatings.*

*The specification covers products and their installation for thin stone, thin brick and tile adhered to Portland cement plaster basecoat.*

**PART 1 - GENERAL**

1. **SECTION INCLUDES**
	1. Waterproof coatings, setting materials, grouting materials and methods of installation for thin veneer over mortar bed OVER Continuous Insulation
2. **RELATED SECTIONS**
	1. Section 06 16 00 - Sheathing
	2. Section 07 90 00 - Joint Protection
	3. Section 09 24 00 - Cement Plastering
3. **REFERENCES**
	1. ANSI A108.01 General Requirements: Sub-surfaces and Preparations by Other Trades.
	2. ANSI A108.02 General Requirements: Materials, Environmental, and Workmanship.
	3. ANSI A108.10 Installation of Grout in Stonework.
	4. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.
	5. ANSI A118.6 Specifications for Ceramic Stone Grouts.
	6. ANSI A118.10 Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations
	7. ANSI A137.1 Specification for Ceramic Tile
	8. ATSM C90 Standard Specification for Loadbearing Concrete Masonry Units
	9. ASTM C270 Standard Specification for Mortar for Unit Masonry
	10. ASTM C150 Standard Specification for Portland Cement
	11. ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete
	12. ASTM C1088 Standard Specification for Thin Veneer Brick Units
	13. ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer (AMSMV) Units
	14. ASTM E2925 Standard Specification for Manufactured Polymeric Drainage and Ventilation Materials Used to Provide a Rainscreen Function
4. **ASSEMBLY DESCRIPTION**
	1. Description:
		1. Section includes waterproof coating, setting materials, grouting materials, and methods of installation for thin veneer over Portland cement plaster basecoat. Portland cement plaster basecoat is installed over a water resistive barrier on code- compliant sheathing.
	2. Functional Criteria:
		1. Performance Requirements - water-resistive barrier coating
			1. Shall meet the testing requirements of the Parex USA Product Performance Sheet.
		2. Substrate Systems:
			1. Shall be engineered to withstand applicable design loads including required safety factor.
			2. Maximum deflection of substrate system shall be L/360
			3. Substrate dimensional tolerance: Flat as required by the thin veneer manufacturer but shall be maximum within 1/4 in (6 mm) in 10 feet (3050 mm).
			4. 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 thin veneer work in accordance with [TCNA Detail EJ171] or veneer manufacturer recommendation.
		4. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control and isolation joints, where indicated during installation of setting materials, mortar beds, and thin veneer units. Do not saw-cut joints after installing units.
			1. Locate joints in thin veneer surfaces directly above joints in concrete substrates.
			2. Joint width and spacing depends on application - follow TCA “Handbook for Ceramic Tile Installation” Detail "EJ-171 Expansion Joints" or consult veneer manufacturer for recommendation based on project parameters.
			3. 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.
5. **SUBMITTALS**
	1. General: Submit Samples, and Certificates in accordance with Division 1 General Requirements Submittal Section.
	2. 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.
6. **QUALITY ASSURANCE**
	1. Qualifications:
		1. Manufacturer: Shall have manufactured waterproofing and Portland cement plastering in United States for at least ten years.
		2. Applicator: Completed thin veneer installations similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance. Applicator shall be listed by Parex USA.
7. **DELIVERY, STORAGE, AND HANDLING**
	1. Delivery: Deliver Parex USA products in original packaging with manufacturer's identification.
	2. 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.
8. **PROJECT / SITE CONDITIONS**
	1. Installation Ambient Air Temperature: Minimum of 40 °F (4 °C) and rising, and remain so for 72 hours thereafter
	2. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40 °F (4 °C) or contain frost or ice.
	3. Inclement Weather: Do not apply materials during inclement weather, unless appropriate protection is employed.
	4. Prior to installation, the wall shall be inspected for surface contamination, or other defects that may adversely affect the performance of the materials and shall be free of residual moisture.
	5. Vent temporary heaters to outside to avoid carbon dioxide damage to new thin veneer application.
9. **COORDINATION AND SCHEDULING:**

Coordination: Coordinate Parex USA installation with other construction operations.

1. **WARRANTY**

Warranty: Upon request, at completion of installation, provide Parex USA Systems Warranty. See warranty schedule for available Warranties.

**PART 2 - PRODUCTS**

1. **MANUFACTURERS**
	1. Manufacturer: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807
	2. Distributor: Specified Products Inc, 4911 Olson Drive, Dallas TX 75227 214-388-1228
		1. Obtain components of Parex USA products from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from Parex USA for this project.
2. Obtain each veneer material color, grade, finish, type, composition, and variety from: Specified Products Inc, 4911 Olson Drive, Dallas TX 75227
3. **MATERIALS**
	1. Water Resistive Barrier:
		1. Parex USA WeatherSeal Spray & Roll-On water resistive and air barrier coating, fluid consistency, conforming to ASTM 2570, applied by roller, sprayer, or brush.
		2. Parex USA 396 Sheathing Tape: Non-woven synthetic fiber tape to reinforce WeatherSeal Spray & Roll-On roll on water-resistive barrier at sheathing board joints, into rough openings and other terminations into dissimilar materials available in 4 in, 6 in and 9 in widths.
		3. Parex USA 365 Flashing Membrane: Self-sealing, Polyester faced, rubberized asphalt membrane, 30 mils (0.76 mm) thick.
		4. Parex USA WeatherFlash: Exterior waterproof filler and joint treatment. Single-component, non-sag, moisture curing sealant. Used in conjunction with Parex USA WRBs to fill penetrations and open joints up to 1/2 inch (13MM).
		5. Intervening material such as building paper between the stucco base coat and either the Parex USA WeatherSeal Spray and Roll-on or Parex USA WeatherSeal Trowel-on. If a drainage material is used, this layer may be deleted if the drainage medium contains an intervening material.
	2. Optional Drainage
		1. Tyvek StuccoWrap
		2. Grade D Paper
		3. Drainage Mat
	3. Stucco Base:
		1. Parex USA family of brands stucco base coat, sanded: Proprietary mixture of portland cement and proprietary ingredients mixed with clean, cool, potable water.
	4. Stucco Admix (Required): Parex USA Adacryl Admix & Bonding Agent: 100% acrylic emulsion additive for Portland cement based products to enhance curing, adhesion, freeze-thaw resistance and workability and as an acrylic polymer bonding agent.
	5. waterproofing: Load Bearing, Bonded, Waterproof Membrane
		1. Parex USA WeatherBlock; a waterproofing membrane.
	6. Specialty Adhesive Mortar Latex-Portland Cement Stone Setting Mortar ANSI A118.4.
		1. Parex USA Masonry Veneer Adhesive; a premium medium bed latex modified Portland cement dry set mortar for installations requiring a mortar to compensate for irregularities in the substrate or thin veneer stone.
	7. Thin Veneer Materials

EDITOR NOTE: SPECIFY VENEER UNITS BELOW. DELETE UNUSED CATEGORIES.

1. Thin brick conforming to ASTM C1088 and as follows:
	* + 1. Manufacturer:
			2. Size: [\_\_\_\_\_].
			3. Thickness: [\_\_\_\_\_].
			4. Pattern: [\_\_\_\_\_\_] [\_\_\_\_\_].
			5. Color: [\_\_\_\_\_] [\_\_\_\_\_] [as scheduled] [\_\_\_\_\_], to match approved sample range.
			6. Finish: [\_\_\_\_] [\_\_\_\_\_\_] [\_\_\_\_\_].
2. Manufactured Thin stone masonry veneer as follows:
	* + 1. Manufacturer:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
			2. Maximum Weight: 12 pounds per square foot (if higher contact Parex USA Technical Support), no longer than 36”
			3. Size: [\_\_\_\_\_]. Maximum Stone size of 720 square inches
			4. Thickness: [\_\_\_\_\_]. (Max: 2.5 inch)
			5. Pattern: [\_\_\_\_\_\_] [\_\_\_\_\_\_].
			6. Color: [\_\_\_\_\_\_] [\_\_\_\_\_\_] [as scheduled] [\_\_\_\_\_], to match approved sample range.
			7. Finish: [\_\_\_\_] [\_\_\_\_\_] [\_\_\_\_\_\_]
3. Thin Ceramic Tile
	* + 1. Manufacturer
			2. Maximum Weight
			3. Size: [\_\_\_\_\_]. (Maximum 12”x12”)
			4. Thickness: [\_\_\_\_\_].
			5. Color: [\_\_\_\_\_\_] [\_\_\_\_\_\_] [as scheduled] [\_\_\_\_\_], to match approved sample range.
4. Molding and Trim pieces as follows: [\_\_\_\_] [\_\_\_\_] [\_\_\_\_\_] [\_\_\_\_\_].
	1. Grout for masonry veneer joints:
		1. Parex USA MVS Pointing Mortar
	2. Continuous Insulation:
		1. Expanded Polystyrene (EPS) having a nominal density of 1 lb/ft³ (14 kg/m³). Maximum thickness of 2 in (50.8 mm).
		2. Polyisocyanurate Foam plastic complying with ASTM C1289 as Type II board with a nominal density of 2 pcf (32 kg/m³), thickness of 1 in (25.4 mm) to 2 in (50.8 mm). RMAX Durasheath
5. **RELATED MATERIALS AND ACCESSORIES**
	1. Lath
		1. Conforming to ASTM C847, minimum nominal weight 3.4 pounds per square yard, minimum G60 galvanizing, installed in accordance with ASTM C1063 and fastened in accordance with the building code.
	2. 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 application of the water-resistive barrier
	3. Optional drainage mat installed between the water-resistive barrier and Portland cement basecoat:
		1. Entangled polymeric monofilament mat conforming to ASTM E2925, minimum 6 mm thick.
	4. Flashing: Refer to Division 7 Flashing Section for flashing materials.

**PART 3 - EXECUTION**

1. **EXAMINATION**
	1. Verify project site conditions under provisions of Section 01 00 00.
	2. Compliance: Comply with manufacturer's instructions for installation of Parex products
	3. Substrate Examination: Examine prior to Parex product installation as follows:
		1. Substrate shall be of a type approved by Parex USA.
		2. Substrate shall be examined for soundness, and the presence of harmful conditions.
		3. Substrate shall be within the flatness tolerances specified.
		4. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
		5. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.
	4. 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.
	5. Advise Contractor of discrepancies preventing installation of the Parex products. Do not proceed with the work until unsatisfactory conditions are corrected.
2. **PREPARATION**
	1. Protection: Protect surrounding material surfaces and areas during installation of materials.
	2. Clean surfaces thoroughly prior to installation.
	3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
3. **MIXING:** Follow the manufacturer's published mixing instructions.
	1. Admix: Parex USA Adacryl
		1. Mix up to 1 qt (1 L) per bag of Parex USA family of brands stucco base brown sanded. Add after dry components and the majority of the water has been mixed. Mix no longer than required to provide a uniform mixture. DO NOT OVER-MIX. Overmixing entrains excessive amounts of air which weaken the material. Do not re-temper mixes over 20 minutes old.
4. **APPLICATION**
	1. General: Installation shall conform to this specification and Parex USA systems written instructions and drawing details.
	2. Drainage Accessories and Water Resistive Barrier:
		1. Treat all glass mat gypsum sheathing, cement board sheathing, OSB and plywood joints with either Parex USA WeatherSeal Spray & Roll-On or Parex USA WeatherSealTrowel-On water-resistive barrier and embed Parex USA 396 Sheathing Tape or Parex USA WeatherFlash.
		2. Flash all rough openings with either Parex USA WeatherSeal Spray & Roll-On or Parex USA WeatherSeal Trowel-On water-resistive barrier and embedded Parex USA 396 Sheathing Tape or Parex USA WeatherFlash.
		3. Flash heads of all openings with metal head flashing as shown in the project detail drawings.
		4. Apply Parex USA WeatherSeal Spray & Roll-on to the surface of the substrate (2 coats may be required on plywood, OSB, and masonry). Over concrete and masonry, a skim coat Parex USA Stucco Level Coat may be use to fill porous surfaces and allowed to dry prior to Parex USA WeatherSeal Spray & Roll-on application. Center Parex USA 396 Sheating Tape on edges of all vertical legs of flashing and track and embed in Parex USA WeatherSeal Spray & Roll-on.
	3. Install Drainage as/if specified
	4. Install Intervening material such as building paper between the stucco base coat and the Weatherseal.
	5. Continuous Insulation
		1. Insulation Boards should be fastened to allow temporary placement until the lath is installed.
		2. The lath is applied tightly over the insulation board and fastened through the insulation board to wood studs or structural sheathing, Care must be taken to avoid overdriving fasteners.
	6. Install metal lath in accordance with ASTM C1063.
	7. Portland cement plaster application:
		1. Apply a coat of Portland cement plaster in accordance with ASTM C926 in one or two layers to and nominal thickness of 1/2" to 3/4"(12.7 mm to 19 mm) or in accordance with the stone manufacturers applicable evaluation service report..
	8. Parex USA WeatherBlock application
		1. Apply 2 liberal coats of Parex USA WeatherBlock over the entire field of the Stucco Base Coat. Weatherblock must be covered up within 30 days of application.
	9. Expansion joints:
		1. Parex USA WeatherSeal Spray & Roll-On, Parex USA WeatherSeal Trowel-On and Parex USA WeatherBlock must be applied with Parex USA 396 Sheathing Tape embedded to bridge across expansion joints. Brush apply a heavy coat of the coating to the face of the tape to create a continuous membrane across the joint.
	10. Adhered Masonry Veneer:
		1. Ensure complete coverage of Parex USA Masonry Veneer Adhesive between the Stucco/WeatherBlock and the back side of the thin veneer units. Apply a tight coat of Parex USA Masonry Veneer Adhesive to the Parex USA Weatherblock. Apply Parex USA Masonry Veneer Adhesive to the back of clean veneer unit using an appropriate sized notched trowel. Place veneer unit against Weatherblock (wet mortar to wet mortar) and slide back and forth to collapse adhesive ribbons. Ensure that there is 100% coverage and contact.
		2. Install tile and thin brick with Parex USA Masonry Veneer Adhesive to comply with referenced Tile Council of North America (TCNA) TCA 202 and ANSI A108.5 installation standards.
		3. Spread only as much adhesive as can be covered while the mortar surface is still wet and tacky.
		4. Fit thin veneer units around corners, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance.
		5. Make cut edges smooth, even and free from chipping. Do not split veneer units
		6. Expansion and Perimeter Joints: The veneer units are installed up to the joint leaving a gap the width of the joint. Keep all control and expansion joints free of setting materials
		7. Curing time of veneer adhesive:

72 hours before grouting when the temperature is low or the humidity is high.

48 hours before grouting when hot, dry conditions exist.

Check the bond strength carefully before grouting.

* 1. Grouting:
		1. 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 and air temperature must be between 40-90°F (4-32°C).
		2. Keep grout out of spaces to receive sealants.
		3. Adhered veneer grouting:
			1. Fill joints using a grout bag, mortar gun or other mortar delivery device. When thumbprint hard, rake out excess mortar, compact and seal edges around stones. A wet brush or sponge should never be used to treat the mortar jointsas this will cause staining that will be difficult or impossible to remove.
	2. Soft joints that are in the veneer only.
		1. Thin brick: Joints spaced no more than 18 feet (5.5 m) in either direction. Maximum area between joints not over 144 ft2, longer dimension of the area not over 2 1/2 times the shorter dimension.
		2. Tile: In accordance with TCNA EJ171 and Parex USA Detail SWM-TVS E1.01. Apply masking tape to the edges of the joint. Use caulking gun or other applicator to completely fill soft 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 immediately.
		3. Manufactured thin stone masonry veneer: Follow the thin veneer manufacturer's instructions for soft joints.
1. **CLEAN-UP**
	1. Removal: Remove and legally dispose of Parex USA and thin veneer component debris material from job site.
	2. 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.
	3. Clean work area of foreign materials resulting from operations.
	4. Acid Cleaning: Ceramic tile and clay thin brick may be cleaned with sulfamic acid solutions complying with the following:
		1. Never apply acid to manufactured stone masonry veneer or manufactured brick.
		2. Only if permitted by tile and/or thin brick and grout manufacturer’s printed instructions.
		3. Protect metal surfaces, cast iron and vitreous plumbing fixtures from effects of acid cleaning.
		4. Flush surface with clean water before and after cleaning.
2. **PROTECTION**
	1. Provide protection of installed materials from water infiltration into or behind them.
	2. Upon completion of setting and grouting, clean all stone surfaces so they are free of foreign matter.
	3. Provide protection of installed finish from dust, dirt, precipitation, freezing and continuous high humidity until fully cured and dry.
	4. When recommended by thin veneer/stone manufacturer, apply a protective coat of neutral protective cleaner. Protect installed thin veneer work with heavy covering during construction period to prevent damage.
	5. Protective Coatings: Before final inspection, remove protective coverings and rinse neutral cleaner from stone surfaces.
	6. Finished Thin Veneer Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective thin veneer work.

END OF SECTION *Rev. May 2016*

*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. For additional assistance, contact Parex USA’s Architectural Sales (866.516.0061)* *or Technical Support (800-224-2626).*