

CSI SECTION MVS-CI Masonry Veneer on Continuous Insulation

System Overview

This overview does not form part of the specification.

Adhered manufactured stone masonry veneer, thin brick, or tile is bonded to a cementitious base coat bonded to continuous insulation. A water-resistive barrier coating and drainage function are provided behind the insulation.

Manufactured stone masonry veneer units shall comply with the applicable requirements of ICC Evaluation Service Acceptance Criteria AC51. Dimension and weight limitations of veneer units are in Section 2 of this specification.

COORDINATION REQUIRED FOR MATERIALS INSTALLED BY OTHERS: SHEATHING FASTENER TYPE AND SPACING MUST BE AS SPECIFIED FOR THE MVS-CI SYSTEM IN ICC EVALUATION SERVICE REPORT ESR-2562.

Substrate construction must resist all design loads. Sheathing attachment to framing must resist design negative wind loads because it transfers those loads to the framing. Maximum stud spacing of supporting framing is 16" on center. Appropriate safety factors must be applied.

Substrate construction must be designed to limit transverse deflection to $l/360$ of the span under design wind loads.

The system does not contribute structural strength to the wall. It depends on the substrate wall for support.

All penetrations and terminations of the system other than weeps must be made weather-tight, typically by sealants and/or flashings.

Some jurisdictions require Special Inspection of the water-resistive barrier coating. Check with the AHJ for the project.

The EPS has a maximum service temperature of 165°F (74°C). Dark veneer colors will increase the surface temperature of the wall. Therefore the veneer is limited to colors with a 20% min. reflectance value.

Interior use is prohibited.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Manufacturer's requirements for the proper design, use, materials, and installation of an exterior insulation and finish system having adhered manufactured stone masonry veneer facing.

1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Section 04 70 00 – Manufactured Masonry
- C. Section 06 16 00 - Sheathing
- D. Section 07 62 00 - Sheet Metal Flashing and Trim
- E. Section 07 90 00 - Joint Protection
- F. Section 08 50 00 - Windows
- G. Section 09 21 16 - Gypsum Board Assemblies

1.3 REFERENCES

- A. ANSI A108.5 American National Standard Specification for Installation of Ceramic Tile with Latex-Portland Cement Mortar
- B. ANSI A1.08.9 Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout
- C. ANSI A108.10 Installation of Grout in Tilework
- D. ANSI A118.4 American National Standard Specifications for Modified Dry-Set Cement Mortar

- E. ANSI A118.6 American National Standard Specifications Cement Grout for Tile Installation
- F. ANSI A118.8 American National Standard Specifications for Modified Epoxy Emulsion Grout
- G. ANSI A137.1 American National Standard Specifications for Ceramic Tile
- H. ASTM B117 Test Method for Salt Spray (Fog) Testing C150 Standard Specification for
Portland Cement
- I. ASTM C270 Standard Specification for Mortar for Unit Masonry
- J. ASTM C150 Standard Specification for Portland Cement
- K. ASTM C482 Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste
(Modified)
- L. ASTM C920 Standard Specification for Elastomeric Joint Sealants
- M. ASTM C979 Standard Specification for Pigments for Integrally Colored Concrete
- N. ASTM C1088 Standard Specification for Thin Veneer Brick Units Made from Clay or Shale
- O. ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- P. ASTM C1177 Standard Specification for Glass Mat Gypsum Substrate
- Q. ASTM C1325 Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious
Backer Units
- R. ASTM C1670 Standard Specification for Adhered Manufactured Stone Masonry Veneer
(AMSMV) Units
- S. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative
Humidity
- T. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior
Coatings in an Environmental Chamber
- U. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials
- V. ASTM E330 Test Method for Structural Performance by Uniform Static Air Pressure
Difference.
- W. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference.
- X. ASTM E2134 Standard Test Method for Evaluating the Tensile-Adhesion Performance of an
Exterior Insulation and Finish System (EIFS)
- Y. ASTM E2273 Standard Test Method for Determining the Drainage Efficiency of Exterior
Insulation and Finish Systems (EIFS) Clad Walls
- Z. ASTM E2430 Standard Specification For Expanded Polystyrene (“EPS”) Thermal Insulation
Boards For Use In Exterior Insulation and Finish Systems (“EIFS”)
- AA. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and
Finish Systems (EIFS) and Water Resistive Barrier Coatings
- BB. ASTM E2568 Standard Specification for Class PB Exterior Insulation and Finish Systems (EIFS)
- CC. ASTM E2570 Standard Test Method for Evaluating Water-Resistive Barrier Coatings Used
Under Exterior Insulation and Finish Systems (EIFS) or Exterior Insulation and
Finish Systems (EIFS) with Drainage
- DD. AC51 Acceptance Criteria for Precast Stone Veneer, ICC Evaluation Service, LLC
- EE. The International Building Code (IBC), International Code Conference
- FF. The Masonry Society / American Concrete Institute/ American Society of Civil Engineers
 - 1. TMS 402/ACI 530/ASCE 5

GG. National Fire Protection Association

1. NFPA 285 Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components
2. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.

HH. National Institute of Science and Technology

1. PS-1 Construction and Industrial Plywood
2. PS-2 Performance Standard for Wood Based Structural-Use Panels

II. Tile Council of North America (TCNA)

1. Handbook for Ceramic, Glass, and Stone Tile Installation 2012
 - a. EJ171 Movement Joint Guidelines for Ceramic Glass and Stone

1.4 ASSEMBLY DESCRIPTION

A. Adhered manufactured stone masonry veneer units or thin brick are bonded to the Parex USA Reinforced cementitious base coat and mechanical fasteners over a continuous insulation. The EPS continuous insulation is adhered with vertical ribbons of adhesive to create drainage over a water resistive barrier coating. The system is installed over glass mat gypsum sheathing, cement board sheathing, Exposure 1 plywood or OSB, concrete, or concrete masonry, or clay brick.

B. Functional Criteria:

1. General:

- a. Insulation Board: At system termination, completely encapsulate insulation board edges by mesh reinforced base coat. The use of and maximum thickness of insulation board shall be in accordance with applicable building codes and Parex USA requirements.
- b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration behind the cladding. Refer to Division 07 Flashing Section for specified flashing materials.
- c. See Current ICC Evaluation Service Report ESR 2562 or Contact Parex USA Technical Department for allowable design wind loads.
 - (1) Usage not meeting above criteria is prohibited unless approved in writing by Parex USA, Inc. prior to installation.
- d. The building interior shall be separated from the insulation board by minimum ½ in (12.7 mm) of gypsum board or equivalent 15 minute thermal barrier.
- e. Terminate the system not less than 2 inches above pavement and 6 inches above soil.
- f. Minimum pitch of sloped surfaces: 4/12.
- g. Maximum run of sloped surfaces: 10 inches. The veneer units on the slope shall be not less than the length of the slope measured from the top of the slope to the bottom of the slope. There shall be no horizontal joints within a sloped surface.
- h. Adhered veneer shall not be installed overhead except mosaic tiles not larger than 2"x 2"x 1/8" maximum thickness.

2. Performance Requirements

- a. ICC Evaluation Service, Inc. Acceptance Criteria AC 235 and 212
- b. Shall meet the testing requirements of the Product Performance Sheets.
- c. Manufactured stone masonry veneer units to meet the requirements of Acceptance Criteria AC51.

3. Substrate construction behind water-resistive barrier coating:

- a. Shall be engineered to withstand applicable design loads including required safety factor.
- b. Surfaces must be structurally sound, stable & rigid enough to support the System.

- c. Maximum substrate transverse deflection under positive and negative design wind loads shall not exceed (L=span length): L/360.
 - (1) Usage not meeting above criteria is prohibited unless approved in writing by Parex USA, Inc. prior to installation.
 - d. Substrate dimensional tolerance: Substrate wall maximum allowed variation from the required plane is 1/4" in 10 feet.
 - e. Surface irregularities: not over 1/8 in (3 mm)
4. MVS-CI System Expansion Joints
- a. Expansion joints: Continuous expansion joints shall be installed at the following locations in accordance with manufacturer's recommendations:
 - (1) At building expansion joints.
 - (2) At substrate expansion joints.
 - (3) At floor lines in wood frame construction.
 - (4) At framing deflection locations in light gage cold formed metal framing
 - (5) Where pre-fabricated EIFS wall panels abut one another.
 - (6) Where EIFS abuts other materials
 - (7) Where substrate changes
 - (8) Where significant structural movement occurs, such as at
 - (i) Changes in roof line.
 - (ii) Changes in building shape and/or structural system.
 - b. Adhered veneer expansion joints
 - (1) At all expansion joints in the MVS-CI assembly.
 - (2) At all inside corners.
 - (3) Thin brick: Soft joints every 18 feet and per section 3.4.G below.
 - (4) Tile: Soft joints every 8 feet.
 - (5) Manufactured stone masonry veneer: in accordance with the manufactured stone masonry veneer manufacturer's recommendations.
- EDITOR NOTE: INDICATE JOINT WIDTH ON DRAWINGS FOR MOVEMENT AND EXPANSION AND CONTRACTION CONDITIONS. CONSULT WITH SEALANT MANUFACTURER FOR JOINT DESIGN RECOMMENDATIONS AND WITH EIFS MANUFACTURER FOR COORDINATION OF EIFS MATERIALS.**
- c. Substrate movement and expansion and contraction of continuous insulated assembly and adjacent materials shall be taken into account in design of expansion joints, with proper consideration given to sealant properties, installation conditions, temperature range, coefficients of expansion of materials, joint width to depth ratios, and other material factors. Minimum width of expansion joints shall be as follows:
 - (1) ½ in (12.7 mm) where system abuts other materials.
 - (2) ¾ in (19 mm) expansion joint within system.
 - (3) Larger width where indicated on drawings.
5. Manufacturer's Details:
- Manufacturer's latest published information shall be followed for standard detail treatments.
- a. Non-standard detail treatments shall be as recommended by manufacturer, approved by Project Designer and be part of the Contract Documents.
6. Building Code Conformance: shall be acceptable for use on this project under building code having jurisdiction.

1.5 SUBMITTALS

- A. General: Submit samples, Evaluation Reports, warranties samples, and certificates in accordance with Division 01 General Requirements Submittal Section.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - 1. All system materials, excluding veneer units, shall be Parex USA products and purchased from Parex USA or its authorized distributor.
 - 2. Applicator:
 - a. Shall have completed the manufacturer's Educational Seminar.
 - b. Shall possess a current manufacturer's certificate of education.
 - c. Shall be experienced and competent in installation of plaster-like materials, adhered veneers, and liquid-applied air and water-resistive barrier coatings.
- B. Regulatory Requirements:
 - 1. Insulation Board: Shall be produced and labeled under a third party quality program as required by applicable building code.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in original packaging with manufacturer's identification.
- B. Storage: Store materials 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 40°F (4°C) and rising, and remain so for 24 hours thereafter.
- B. Substrate Temperature: Do not apply materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- C. Inclement Weather: Do not apply materials during inclement weather unless appropriate protection is employed.
- D. Sunlight Exposure: Avoid, when possible, installation of the materials in direct sunlight.
- E. Materials shall not be applied if ambient temperature exceeds 105°F (38°C) within 24 hours of application or falls below 40°F (4°C) within 48 hours of application. Protect materials from uneven and excessive evaporation during hot, dry weather.
- F. 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.

1.9 COORDINATION AND SCHEDULING:

- A. The General Contractor must coordinate sheathing fastener type and spacing with sheathing installation contractor.
SHEATHING FASTENER TYPE AND SPACING MUST BE AS SPECIFIED FOR THE MVS-CI SYSTEM IN ICC EVALUATION SERVICE REPORT ESR-2562.
- B. Coordinate water-resistive & air barrier coating installation with other construction operations.
- C. Coordinate water-resistive & air barrier coating installation with special inspection schedule.

1.10 WARRANTY

- A. Warranty: Upon request, at completion of installation, provide manufacturer's Standard Limited Warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer, Basis of Design: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807 Contact: Architectural Sales (866.516.0061) or Technical Support (800.226.2424).
- B. Components: Obtain components from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from Parex USA for this project.

2.2 MATERIALS

- A. Water Resistive Barrier:

3. Parex USA WeatherSeal Spray & Roll-On water resistive and air barrier coating, fluid consistency, conforming to ASTM 2570, applied by roller, sprayer, or brush.
 4. Parex USA WeatherSeal Trowel-On water resistive and air barrier coating, paste consistency, conforming to ASTM E2570, applied by trowel or taping knife.
 5. Parex USA 396 Sheathing Tape: Non-woven synthetic fiber tape to reinforce Parex USA 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.
 6. Parex USA 365 Flashing Membrane: Self sealing, Polyester faced, rubberized asphalt membrane, 30 mils (0.76 mm) thick.
 7. Parex USA WeatherFlash: Exterior gunnable waterproof joint treatment and fluid applied flashing. Single-component, non-sag, moisture curing. Used in conjunction with WeatherSeal Spray and –Roll-On or WeatherSeal Trowel-On to fill penetrations and open joints up to 1/2 inch (13MM) and to flash rough openings.
- B. Adhesive for EPS Insulation Board:
1. Parex USA MVS EPS Basecoat /Adhesive: 100% acrylic polymer based, requiring the addition of portland cement; used as an adhesive to laminate EPS Insulation Board to either the Parex USA WeatherSeal Spray & Roll-on or Parex USA WeatherSeal Trowel-On. **WARNING: NEVER SUBSTITUTE ANY OTHER ADHESIVE.**
- C. Insulation Board: In compliance with manufacturer’s requirements for Standard System EIFS.
1. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
 2. Shall conform to ASTM C578 and ASTM E2430, Type I and the Parex USA specification for Molded Expanded Polystyrene Insulation board.
 3. Maximum size shall be 2 ft x 4 ft (610 mm x 1219 mm).
 4. Thickness:
 - a. 1 in (25 mm) minimum board thickness, 4 in (102 mm) maximum board thickness.
- D. Base Coats:
1. Parex USA MVS EPS Basecoat: 100% acrylic polymer based, requiring the addition of portland cement.
WARNING: NEVER SUBSTITUTE ANY OTHER BASE COAT.
- E. Parex USA Reinforcing Mesh for embedment in base coat:
1. For combustible (Type V) construction:
Parex USA 355 Standard Mesh: Weight 4.5 oz. per sq. yd. (153 g/sq m); coated for protection against alkali.
 2. For noncombustible construction (Types I,II,III, and IV):
358.10 Intermediate Impact 10 Mesh: Weight 12 oz per sq. yd. (407 g/sq m); coated for protection against alkali.
- F. Mechanical fasteners and washers: **(Installed only in areas to receive adhered veneer, not in areas to receive acrylic finish):**
1. Corrosion resistant Screws, applicable per type of framing. Minimum penetration: ¼ inch into wood framing and three full diameter threads into steel framing, corrosion-resistant to 30 cycles of the Kesternich DIN 50018 SFW 2.0 test.
- G. 1 ¼” diameter minimum 26 gage G90 or Galvalume metal plates.
- H. Parex USA Masonry Veneer Adhesive: a polymer modified portland cement dry set mortar for bonding veneer units to the fiberglass mesh reinforced EPS Base Coat & Adhesive.
- I. Adhered Veneer Materials:
- EDITOR NOTE: SPECIFY VENEER UNITS BELOW. DELETE UNUSED CATEGORIES.**
1. Manufactured Stone Masonry Veneer including cementitious composition thin brick as follows:
 - a. Veneer Units:
 - 1) Maximum Weight: 12 pounds per square foot (49 kg/m²) (if higher contact Parex USA Technical Service Department) with no single unit greater than 20 pounds (9 kg).

- 2) Manufacturer: [_____]
- 3) Size: [_____]. (288 square inches maximum area of single stone)
- 4) Thickness: [_____]. (5/8" (15.8 mm) to 2 5/8" (68 mm) maximum thickness)
- 5) Pattern: [_____] [_____]. (ashler, thin brick, random, etc.)
- 6) Color: [_____] [_____] [as scheduled] [_____], to match approved sample range.
- 7) Sills, quoins, trim pieces as follows: [_____] [_____] [_____] [_____].

b. Veneer joint grout:

- 1) Masonry mortar conforming to ASTM C270
- 2) Color: [natural] or tint with mortar pigment conforming to ASTM C979. Color [_____]
- 3) Joint tooling: [concave] [v joint] [grapevine profile]
- 4) Water: Clean, cool, potable water

2. Ceramic Tile Materials: In accordance with ANSI A137.1

EDITOR NOTE: SPECIFY TILE BELOW. DELETE UNUSED CATEGORIES.

a. Ceramic Tile as follows:

- 1) Manufacturer: [_____]
- 2) Size: [_____].
- 3) Thickness:
- 4) Pattern: [_____] [_____]
- 5) Color: [_____] [_____]

b. Tile joint grout

- 1) [_____] ANSI A118.6 Latex Portland Cement Grout, Sanded: Merkrete
- 2) [_____] ANSI A118.6 Latex Portland Cement Grout, Nonsanded: Merkrete
- 3) [_____] ANSI A118.8 Modified Epoxy Emulsion Grout: Merkrete ProEpoxy
- 4) Color: [_____]
- 5) Joint width : [_____]

3. Thin Veneer Brick Units, clay or shale, exterior grade, in accordance with ASTM C1088.

a. Thin Brick as follows:

- 1) Manufacturer: [_____]
- 2) Size: [_____].
- 3) Thickness: (Maximum 1") [_____]
- 4) Pattern: [_____] [_____].
- 5) Color: [_____] [_____]

b. Thin brick joint mortar/grout:

- 1) Masonry mortar conforming to ASTM C270
- 2) Color: [natural] or tint with mortar pigment conforming to ASTM C979. Color [_____]
- 3) Joint tooling: [concave] [v joint] [grapevine profile]
- 4) Water: Clean, cool, potable water

2.3 RELATED MATERIALS AND ACCESSORIES

A. Substrate Materials:

- [1]. Glass mat gypsum sheathing conforming to ASTM C 1177.
- [2]. Cement Fiber Sheathing conforming to ASTM C 1325
- [3]. Plywood: Minimum 15/32 in (11.9 mm) thick exterior grade or PS 1 Exposure 1, C veneer facing out, panels gapped 1/8 in at all edges.

- [4. Oriented Strand Board (OSB): Minimum 7/16 in, APA-The Engineered Wood Association, TECO, or PSI/PTL stamped as Exposure 1 or Exterior Sheathing with a PS2 or PRP-108 rating.
- [5. Sheathing Fasteners: **SHEATHING FASTENER TYPE AND SPACING MUST BE AS SPECIFIED FOR THE MVS-CI SYSTEM IN ICC EVALUATION SERVICE REPORT ESR-2562.**
- [6. Concrete and Concrete Masonry: unpainted, uncoated, without water - repellants
- [7. Other approved by Parex USA in writing prior to the start of construction.
- B. Flashing: Refer to Division 07 Flashing Section for flashing materials.
- C. Sealant System:
 - 1. Sealant for expansion joints between EIFS sections shall be ultra-low modulus designed for minimum 100% elongation and minimum 50% compression and as selected by Project Designer.
 - 2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50% elongation and minimum 25% compression, and as selected by Project Designer.
 - 3. Sealants shall conform to ASTM C920, Grade NS, Class 100/50 for expansion joints between EIFS sections, Class 50 for perimeter seals.
 - 4. Expansion joints between sections of Parex USA EIFS shall have a minimum width of ¾ in (19 mm).
 - 5. Perimeter seal joints shall be a minimum width of ½ in (12.7 mm).
 - 6. Sealant backer rod shall be closed-cell polyethylene foam.
 - 7. Apply sealant to foundation tracks or base coat of Parex USA EIFS.
 - 8. Refer to Parex USA current bulletin for listing of sealants which have been tested and have been found to be compatible with Parex USA EIFS.
 - 9. Color shall be as selected by Project Designer.
 - 10. Joint design, surface preparation, and sealant primer shall be based on sealant manufacturer's recommendations and project conditions.

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.
- C. Substrate Examination: Examine prior to installation of water-resistive membrane & air barrier coating materials as follows:
 - 1. Substrate shall be of a type approved by manufacturer. Plywood and OSB substrates shall be gapped 1/8 in (3.2 mm) at all edges.
 - 2. Substrate shall be examined for soundness or harmful conditions.
 - 3. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
- 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 primer.
- E. Advise Contractor of discrepancies preventing proper installation of the water-resistive membrane & air barrier coating material. 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 MIXING

- A. Mix materials in accordance with manufacturer's instructions.

3.4 APPLICATION

- A. General: Installation shall conform to this specification and manufacturer's written instructions.
- B. Drainage Accessories and Water Resistive Barrier:
 - 1. Treat all sheathing joints with Parex USA WeatherSeal Spray & Roll-On or Parex USA WeatherSeal Trowel-On water-resistive barrier coating and embed Parex USA 396 Sheathing Tape.
 - 2. Flash all rough openings with Parex USA WeatherSeal Spray & Roll-On or Parex USA WeatherSeal Trowel-On water-resistive barrier and embedded Parex USA 396 Sheathing Tape.
 - 3. Flash heads of all openings with metal head flashing as shown in the System detail drawings.
 - 4. Install either drainage tracks (limited to terminations at foundations) or omit track if Parex USA DrainEdge at back-wrap mesh will be installed at system terminations at foundations.
 - 5. Apply Parex USA WeatherSeal Spray & Roll-on to the surface of the substrate (2 coats 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. Apply Parex USA WeatherSeal Trowel-on in a single coat on concrete and concrete masonry. Center Parex USA 396 Joint Tape on edges of all vertical legs of flashing and track and embed in Parex USA WeatherSeal Spray & Roll-On.
 - 6. Treat the heads of all window, door, louver, PTAC unit and similar openings with Parex USA DrainEdge to allow for drainage at these locations.
 - 7. Install mesh back-wrap or edge-wrap at system terminations.
- C. Insulation Board:
 - 1. Apply Parex USA MVS EPS Basecoat/ Adhesive to backs of insulation boards with a ½" x ½" U-notch trowel with 2 in. flat segments between notches. (13 x 13 x 51 mm). Apply with ribbons of adhesive oriented in a vertical direction (parallel to the 2 ft (610 mm)) dimension of the EPS board) to EPS boards.
 - 2. Install insulation board without gaps in a running bond pattern and interlocked at corners.
 - 3. After 24 hours of drying, or longer as may be required to completely dry in cool or damp weather, rasp irregularities off insulation board.
Rasp to provide a flat surface with maximum variation of 1/4" in 10 feet.
- D. Base Coat and Reinforcing mesh:
 - 1. a. Combustible (Type V) construction:
Parex USA MVS EPS Basecoat and fully embed Parex USA Standard Mesh 355 in base coat; include diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections.
 - b. Noncombustible construction (Types I, II, III, and IV)
Apply Parex USA MVS EPS Basecoat and fully embed Parex USA Intermediate (12 oz per square yard) Mesh 358.10 in base coat.
 - 2. a. Install diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections.
 - b. Allow base coat to dry 24 hours.
 - c. Install corrosion resistant screws with 1 ¼ in washers through the system and into the framing at a maximum spacing along vertical framing members of 36 inches on center and within 4 and 6 inches of wall tops.

INSTALL MECHANICAL FASTENERS ONLY IN AREAS TO RECEIVE ADHERED VENEER. DO NOT INSTALL MECHANICAL FASTENERS IN AREAS TO RECEIVE ACRYLIC FINISH.

- E. Manufactured Stone Masonry Veneer and Thin Brick:
1. Ensure complete coverage of Parex USA Masonry Veneer Adhesive between the Parex USA MVS EPS Basecoat & Adhesive and the back side of the units.
 2. Thin brick form veneer units: Allowing for a mortar joint of 3/8"–1/2", calculate and mark off the number of courses required. Adjust joint size to minimize horizontal cutting. Run level guide lines to ensure proper placement of bricks. Mix brick from several boxes at a time to achieve a pleasing blend of color and texture.
 3. Stone form veneer units: Install in accordance with the veneer unit manufacturers pattern as specified with Parex USA Thin veneer Adhesive. Set units with the veneer manufacturer's specified nominal joint width.
 4. For thin brick form veneer units, spread adhesive in a continuous layer nominally 3/16 to ¼ in. thick and press firmly into place on the base coat.
 5. For stone form veneer units, skim the base coat with Parex USA Masonry Veneer Adhesive covering small areas onto which the stones can be placed while the adhesive surface is still wet and tacky.
 6. Apply Parex USA Masonry Veneer Adhesive to the backs of stone form units in a continuous layer thick enough to provide gap-free contact with the wet skim coat of adhesive, typically ¼" to 3/8 in. (6 mm to 9 mm) thick. Fit veneer units around corners, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance.
 7. Make cut edges smooth, even and free from chipping. Do not split veneer units
 8. EIFS Expansion and Perimeter Joints: Install the veneer units up to the joint leaving a gap the width of the EIFS joint. Keep all control and expansion joints free of setting materials.
 9. Curing time of veneer adhesive:
72 hours before grouting when the temperature is low or the humidity is high.
24 hours before grouting when hot, dry conditions exist.
Check the bond strength carefully before grouting.
- F. Grouting Manufactured Stone Masonry Veneer and Thin Brick:
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 grouting mortar out of spaces to receive sealants.
 - a. 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 joints as this will cause staining that will be difficult or impossible to remove.
 - b. As soon as grouting mortar has hardened, brush off excess grout from veneer units edges and faces with a stiff non-metallic brush.
 - c. Do not use acid cleaners.
- G. Ceramic Tile:
1. Install tile with Parex USA Masonry Veneer Adhesive to comply with ANSI A108.5, except do not dampen the MVS EPS Basecoat /Adhesive as given in ANSI A108.5 Section 2.2.1.
 2. Grout tile to comply with ANSI A108.5.

3.4 CLEAN-UP

- A. Removal: Remove and legally dispose of material from job site.

3.6 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed materials from dust, dirt, precipitation, and freezing during installation

and continuous high humidity until fully cured and dry.

- C. 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.

END OF SECTION

Rev. APRIL 2017

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).

Product Performance Sheet

Masonry Veneer-CI

EIFS Fire Performance	Method	ICC or ASTM Criteria	Results
Surface Burning Characteristics	ASTM E84	Individual components shall each have a flame spread <25, and smoke developed < 450	Flame Spread: 0 to 15 Smoke Developed: 0 to 15
Fire Resistance	ASTM E119	Maintain fire resistance of existing rated assembly	Pass (without adhered veneer)
Radiant Heat Exposure	NFPA 268	No ignition @ 20 minutes	Pass
Intermediate Scale Multi-Story Fire Test	NFPA 285 (UBC Standard 26-9)	Required for Non-combustible Construction	Pass

EIFS Strength	Method	ICC or ASTM Criteria	Results
Creep Resistance of Adhesive	ASTM D2294	No Requirement	28 days 208 psf shear stress; no creep
Transverse Wind Load	ASTM E330	Withstand positive and negative wind loads as specified	Steel frame glass mat sheathing: 76.5 PSF Pos, 40 PSF Neg Wood Frame glass mat sheathing: 91 PSF Pos 46.3 PSF Neg Wood frame, OSB/plywood 93 PSF Pos, 72.3 PSF Neg
Tensile Bond Strength	ASTM E2134	Minimum 15 psi (103kPa)	Pass
Shear Bond Strength	ASTM C482	50 psi	106 psi Pass

EIFS Environmental Durability	Method	ICC or ASTM Criteria	Results
Drainage Efficiency	ASTM E2273		Pass
Freeze/Thaw Resistance	ASTM E 2485 Methods A and B	No deleterious effects* at 10 cycles when viewed under 5x magnification	10 cycles: no deleterious effect
Water Penetration	ASTM E 331	No water penetration beyond the plane of the base coat/EPS board interface after 15 minutes at 6.24 psf (299 Pa)	Pass
Moisture Resistance	ASTM D2247	No deleterious effects at 14 day exposure	Pass
Salt Fog Resistance	ASTM B117	No deleterious effects* at 300 hours	500 hours: no deterioration

**No deleterious effects: no cracking, checking, crazing, erosion, rusting, blistering.*

Parex USA WeatherSeal Spray & Roll-on	Method	ICC and ASTM E2570 Criteria	Results
Accelerated Weathering	AC 212	25 Cycles followed by Hydrostatic Pressure Test: No water penetration on the plane of the exterior face	Pass: no water penetration
Air Infiltration	ASTM E2178	75 Pa (1.57 lb/ft ² , 0.3 in H ₂ O) = < 0.02 L/m ² *s (< 0.004 cfm/ft ²)	< .00001 L/m ² *s (0.00001 cfm/ft ²) at 75 Pa (1.57 lb/ft ² , 0.3 in H ₂ O)
Air Leakage of Air Barrier Assemblies	ASTM E2357	Pass < 0.2 L / s·m ² at 75 Pa) (< 0.04 cfm / ft ² at 1.57 psf)	Pass
Air Leakage	ASTM E283	No Criteria	< 0.004 cfm/ft ²
Flexibility	ASTM D522	No Criteria	No Cracking 1/8" (3 mm) mandrel minus 40 F.
Freeze-Thaw Resistance	ASTM E 2485	10 Cycles	Pass – No Deleterious Effects
Hydrostatic Pressure Test	AATCC 127 (Water Column)	Resist 21.6 in (55 cm) water for 5 hours before and after aging	Pass: no water penetration
Nail Seal ability, Head of Water	ASTM D1970	No Criteria	Pass 5 inches of water
Evaluation of Fire Propagation	NFPA 285	In Accordance with IBC Chapter 26	Meets requirements for use on all Types of construction
Radiant heat exposure	NFPA 268	In Accordance with IBC Chapter 26	No ignition upon 20 minute radiant heat exposure at 1.25 w/cm ² .
Racking	ASTM E72	Deflection at 1/8 in (3.2 mm)	Pass -No cracking at field, joints or flashing connection
Structural Loading	ASTM E1233 Procedure A	10 Cycles @ 80% design load	Pass -No cracking at field, joints or flashing connection
Restrained Environmental	ICC ES AC 212 / ASTM E2570	5 Cycles of wetting and drying	Pass -No cracking at field, joints or flashing connection
Surface Burning Characteristics	ASTM E84	ICC and ASTM E2568 Flame Spread <25 Smoke Developed <450	Flame Spread =0 Smoke Developed =0
Tensile Bond Strength	ASTM E 2134/ ASTM C 297	Minimum 15 psi (104 kPa)	Pass all listed substrates and flashing materials
Water Resistance	ASTM D 2247	14 Days	Pass – No Deleterious Effects.
Water Penetration	ASTM E331	2.86 psf (137 Pa) for 15 minutes	Pass 25.4 psf (1216 Pa) for 165 minutes
Water Penetration	ASTM E331	Tested after Structural Loading, Racking Restrained Environmental Cycling at 2.86 psf 15 minutes	No Water Penetration
Water vapor transmission	ASTM E96 Procedure B	Vapor Permeable	12.0 perms
Weathering	ICC ES AC 212 / ASTM E2570	210 hours of UV Exposure, 25 cycles of accelerated weathering, 21.6 in water column for 5 hours	Pass
Wind Driven Rain	F.S. TT-C-555B	No Criteria	Pass
VOC	EPA Reference Test Method 24	US EPA, South Coast AQMD and Greenseal Standard	10 g/L
Regional Harvest		LEED MRc 5.1	100% at all facilities

Where several tests on different materials are summarized, a range of values is shown. This summary has been prepared to provide quick but partial information on how certain combinations of Parex products perform during certain tests. It is not a complete description of the test procedures or of the results thereof. Copies of original test reports are available at no charge upon request. Please contact Parex USA's Architectural Sales (866-516-0061) or Technical Support Department (800-226-2424) if further information is required.

