

## **CSI SECTION 07 24 00 – Insulation & Finish System - Class PB**

### **07 25 19- Water-Drainage Exterior Insulation and Finish System**

#### **SYSTEM OVERVIEW**

The AquaSol WaterMaster a Class PB CI system distinguished by installation with drainage. Drainage is accomplished by means of channels formed by vertical ribbons of adhesive applied to the back of the insulation board. The adhered insulation board is applied to Parex USA Weatherseal Spray & Roll-on™ water resistive barrier coating.

Parex® AquaSol WaterMaster™ is qualified for use in combustible and noncombustible construction, fire resistant rated walls and residential and non-residential construction.

Sheathing is limited to glass mat gypsum sheathing, cement board, and CDX plywood. Plywood may require 2 coats of Weatherseal Spray & Roll-on.

The system is qualified for application to certain types of OSB (oriented strand board) sheathing only in areas shown in the Parex Acceptable Substrates and Areas of Use Technical Bulletin. OSB may require 2 coats of Weatherseal Spray & Roll-on.

For installation on OSB in other regions refer to Parex Standard WaterMaster LCR (Light Commercial/Residential.)

- Some jurisdictions may require special inspections of the Weatherseal Spray & Roll-on application.
- The system does not contribute structural strength to the wall. It depends on the substrate wall for support and attachment.
- Substrate construction must resist all design loads. Sheathing attachment to framing must resist design negative windloads because it transfers those loads to the framing. Appropriate safety factors must be applied.
- All penetrations and non-draining terminations of the system must be made weather-tight, typically by sealants and/or flashings.

#### **PART 1 - GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Manufacturer's requirements for the proper design, use, and installation of an Continuous Insulation (CI) system

##### **1.2 RELATED SECTIONS**

- A. Section 03 30 00 - Cast-in-Place Concrete
- B. Section 04 20 00 - Unit 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. ASTM B117 Test Method for Salt Spray (Fog) Testing
- B. ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- C. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity
- D. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials.

- E. ASTM E119 Standard Test Method for Fire Tests of Building Construction and Materials.
- F. ASTM E330 Test Method for Structural Performance by Uniform Static Air Pressure Difference.
- G. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference.
- H. ASTM E695 Method for Measuring Relative Resistance to Impact Loading.
- I. ASTM E2134 Standard Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)
- J. ASTM E2273 Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies
- K. ASTM E2430 Standard Specification For Expanded Polystyrene (“EPS”) Thermal Insulation Boards For Use In Exterior Insulation and Finish Systems (“EIFS”)
- L. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
- M. ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
- N. ASTM E2570 Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
- O. ASTM G155/ G153 Accelerated Weathering for Exposure of Nonmetallic Materials.
- P. N FPA 259 Test Method for Potential Heat of Building Materials.
- Q. N FPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.
- R. N FPA 285 Standard Method of Test for the Evaluation of Flammability characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components Using the Intermediate-scale, Multistory Test Apparatus.

#### 1.4 ASSEMBLY DESCRIPTION

- A. Optimum WaterMaster: An Continuous Insulation (CI) system consisting of Adhesive, Expanded Polystyrene Insulation (EPS) Board, Base Coat with embedded Reinforcing Fabric Mesh, Primer (Optional), and Finish Coat. This system is installed over a roll on water-resistive barrier consisting of Parex USA WeatherSeal Spray & Roll-on and Parex Flashing Membrane applied over glass mat gypsum sheathing, cement board sheathing, CDX plywood, OSB, concrete or CMU. The system is qualified for application to OSB (oriented strand board) sheathing only in areas shown in the Parex Acceptable Substrates and areas of use Technical Bulletin.
- B. Functional Criteria:
  - 1. General:
    - a. Insulation Board: At system termination, completely encapsulate insulation board edges by mesh reinforced base coat, substrate or drainage track (limited to terminations at foundation). The use of and maximum thickness of insulation board shall be in accordance with applicable building codes and CI system manufacturer’s 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. The configuration of the water resistive barrier, drainage plane and flashing and Parex materials, must allow for the egress of incidental moisture.
    - d. See Current ICC Evaluation Service Report or Contact Parex Technical Department for Design Windloads.
    - e. Inclined surfaces shall follow the guidelines listed below:
      - (1) Minimum slope: 6 in (152 mm) of vertical rise in 12 in (305 mm) of horizontal run.
      - (2) For sloped surfaces, run of slope shall be a maximum of 12 in (305 mm).

- (3) Usage not meeting above criteria shall be approved in writing prior to installation.
- f. The building interior shall be separated from the insulation board by 1/2 in (12.7 mm) of gypsum board or equivalent 15 minute thermal barrier.
- 2. Performance Requirements
  - a. System to meet the performance and testing requirements of the International Code Council Acceptance Criteria AC 212
  - b. Shall meet the testing requirements of the Product Performance Sheet.
- 3. Substrate Systems:
  - a. Shall be engineered to withstand applicable design loads including required safety factor.
  - b. Maximum deflection of substrate system under positive or negative design loads shall not exceed L/240 of span.
  - 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).

EDITOR NOTE: COORDINATE BELOW IMPACT RESISTANCE CLASSIFICATION REQUIREMENTS ACCORDING TO ASTM E2486 - STANDARD TEST METHOD FOR IMPACT RESISTANCE OF CLASS PB AND PI EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

- 4. Impact Resistance Classification:
  - a. Standard Impact Resistance, 25-49 in-lbs (2.8 – 5.6 J) Impact Range
  - b. Medium Impact Resistance, 50-89 in-lbs (5.7–10.1 J) Impact Range
  - c. High Impact Resistance, 90-150 in-lbs (10.2–17.0 J) Impact Range
  - d. Ultra High Impact Resistance, >150 in-lbs (> 17.0 J) Impact Range
- 5. Expansion Joints: Continuous expansion joints shall be installed at the following locations in accordance with manufacturer's recommendations:
  - a. At building expansion joints.
  - b. At substrate expansion joints.
  - c. At floor lines in wood frame construction.
  - d. Where CI system panels abut one another.
  - e. Where CI system abuts other materials.
  - f. Where significant structural movement occurs, such as at
    - (1) Changes in roof line.
    - (2) Changes in building shape and/or structural system.
  - g. Where substrate changes

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

- h. Substrate movement and expansion and contraction of CI system 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) 1/2 in (12.7 mm) where CI system abuts other materials.
  - (2) 3/4 in (19 mm) when CI system abuts the CI system.
  - (3) Larger width where indicated on drawings.
- 6. Manufacturer's Detail:
  - a. CI system latest published information shall be followed for standard detail treatments.

- b. Non-standard detail treatments shall be as recommended by manufacturer, approved by Project Designer and be part of the Contract Documents.
- 7. Building Code Conformance: CI system shall be acceptable for use on this project under building code having jurisdiction.

### **1.5 SUBMITTALS**

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

### **1.6 QUALITY ASSURANCE**

- A. Products manufactured under ISO 9001:2000 Quality System.
- B. Qualifications:
  - 1. All CI system assembly materials must be manufactured or sold by a single-source manufacturer and must be purchased direct from the manufacturer or its authorized distributor.
  - 2. Applicator:
    - a. Must have attended manufacturer's Educational Seminar.
    - b. Must possess a current manufacturer's certificate of education.
    - c. Must be experienced and competent in installation of plaster-like materials.
- C. 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. Application of Acrylic Finishes in direct sunlight in hot weather may adversely affect aesthetics.
- E. Materials shall not be applied if ambient temperature exceeds 120°F (49°C) or falls below 40°F (4°C) within 24 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. Coordination: Coordinate water-resistive membrane & air barrier coating materials installation with other construction operations.

### **1.10 WARRANTY**

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

## **PART 2 - PRODUCTS**

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## 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 the CI system manufacturer for this project.

## 2.2 MATERIALS

- A. Secondary Water-Resistive Barrier
  - [1. Parex USA WeatherSeal Spray & Roll-on™ water resistive barrier coating
  - [2. Parex USA 396 Sheathing Tape: Non-woven synthetic fiber tape to reinforce Parex USA WeatherSeal Spray & 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.
  - [3. Parex USA WeatherFLash: Liquid flashing and joint filler used to prepare and seal exterior wall rough openings and detail joints.
  - [4. Parex USA 365 Flashing Membrane: Self-sealing, Polyester faced, rubberized asphalt membrane, 30 mils (0.76 mm) thick.
- B. Adhesives
  - [1. Parex 121™ Optimum Base Coat & Adhesive: 100% acrylic polymer based, requiring the addition of Portland cement; used as an adhesive to laminate EPS Insulation Board to the Weatherseal Spray & Roll-on water-resistive barrier.
  - [2. Parex 121 Optimum Dry Base Coat & Adhesive: Copolymer based, factory blend of cement and proprietary ingredients; requiring the addition of water only, used as an adhesive to laminate EPS Insulation Board to the Weatherseal Spray & Roll-on water-resistive barrier.
  - [3. 121 Dry HI: High Impact basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water.
- 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: ¾ in, minimum (19 mm) after rasping.
- D. Base Coats:
  - [1. 121Optimum Base Coat: 100% acrylic polymer base, requiring the addition of Portland cement.
  - [2. 121 Optimum Dry Base Coat: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.
  - [3. 121 Dry HI: High Impact basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water. See data sheet for improved impact performance when 121 Dry HI is used with Parex USA mesh.

**EDITOR NOTE: RETAIN BELOW STANDARD MESH FOR STANDARD SYSTEM FOR STANDARD IMPACT RESISTANCE CLASSIFICATION.**

- E. Reinforcing Mesh:
  - [1. 355 Standard Mesh: Weight 4.5 oz. per sq. yd. (153 g/sq m); coated for protection against alkali. Standard reinforcement of Parex CI system or for use with High Impact 358.14 Mesh, or Ultra High Impact 358.20 Mesh.
  - [2. 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.
  - [3. 352 Self Adhesive Detail Mesh: Reinforcing mesh used for complex details.

**EDITOR NOTE: RETAIN BELOW MESH REQUIREMENTS AFTER DETERMINATION OF IMPACT RESISTANCE CLASSIFICATION.**

- [4. 358.10 Intermediate Impact 10 Mesh: Weight 12 oz per sq. yd. (407 g/sq m) Reinforcing mesh used with a Standard System, to achieve ASTM E2486 intermediate impact strength.
- [5. 358.14 High Impact 14 Mesh: Weight 15 oz. per sq. yd. (509 g/sq m) Reinforcing mesh used with a Standard System; to achieve ASTM E2486 high impact strength.
- [6. 358.20 Ultra High Impact 20 Mesh: Weight 20 oz. per sq. yd. (678 g/sq m) Reinforcing mesh used with a Standard System; to achieve ultra-high impact strength.

**EDITOR NOTE: RETAIN BELOW AND SPECIFY LOCATIONS TO RECEIVE EIFS WITH HIGHER THAN STANDARD IMPACT RESISTANCE CLASSIFICATION.**

Locations: \_\_\_\_\_; ASTM E2486 Impact Classification: \_\_\_\_\_

**F. Primer:**

- [1. Parex USA Primer: 100% acrylic based coating to prepare surfaces for acrylic or elastomeric finishes.
- [2. Variance VariPrime Sanded: 100% acrylic based coating to prepare surface for exposed aggregated specialty finishes.

**EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE ONE FINISH TYPE, TEXTURE, & COLOR**

**G. Finish**

- [1. Parex AquaSol: 100% acrylic polymer based finish, enhanced DPR acrylic finish with hydrophobic and photocatalytic properties, repels water, reflects UV rays, and reduces smog particles near the finish surface. Finish type, texture and color as selected by Project Designer

**EDITOR NOTE: ADD COLORFAST PIGMENTS TO ANY PRE-TINTED ACRYLIC OR ELASTOMERIC FINISH SELECTION ABOVE FOR SATURATED/BRIGHTER AND INCREASED FADE RESISTANCE AND TO QUALIFY FOR A COLOR FADE WARRANTY.**

- [a. Parex USA ColorFast Pigments System: Fade resistant pigment system offering superior fade resistance; factory tinted only; used-with any Parex USA acrylic or elastomeric finish or coating.

**EDITOR NOTE: ADD CLEAR SEALER WHERE ENHANCED CLEANABILITY IS DESIRED FOR HIGH SOLING EXPOSURES.**

[3.

- H. Parex USA 369 DrainEdge™: Pre-punched strip of non-woven fabric to allow for drainage at the head of system penetrations.
- I. Water: Clean, cool, potable water
- J. Portland Cement: ASTM C150, Type I or Type I-II.

**2.3 RELATED MATERIALS AND ACCESSORIES**

**A. Substrate Materials:**

- [1. Glass mat gypsum sheathing conforming to ASTM C1177.
- [2. Cement Fiber Sheathing conforming to ASTM C1325
- [3. Gypsum Sheathing: Minimum 1/2 in (13 mm) thick, core-treated, weather-resistant, exterior gypsum sheathing complying with ASTM C1396.
- [4. Plywood: Minimum 7/16 in (8 mm) thick exterior grade or PS 1, Exposure 1, minimum 7/16 in thick, C veneer facing out, panels gapped 1/8 in at all edges.
- [5. Oriented Strand Board (OSB): 7/16 in - 1/2 in Wall-16 or Wall-24, approved by the APA, TECO, or PSI/PTL. Stamped as Exposure 1 or Exterior Sheathing with a PS2 or PRP-108 rating.
- [6. Concrete Masonry Units (CMU): Non-painted (uncoated).

- [7. Concrete (poured or pre-cast).
- [8. Other approved by manufacturer writing prior to the project.
- B. Flashing: Refer to Division 07 Flashing Section for flashing materials.
- C. Sealant System:
  - [1. Sealant for expansion joints between panelized 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 C 920, Grade NS.
  - [4. Expansion joints between sections of EIFS shall have a minimum width of 3/4 in (19 mm).
  - [5. Perimeter seal joints shall be a minimum width of 1/2 in (12.7 mm).
  - [6. Sealant backer rod shall be closed-cell polyethylene foam.
  - [7. Apply sealant to tracks or base coat of EIFS.
  - [8. Refer to EIFS manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS materials.
  - [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 CI system assembly 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, 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.
  - 5. Maximum deflection of the substrate shall be limited to L/240.
- 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 proper installation of the CI system materials. 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. Plywood and OSB substrates cut edges (non-factory edges) must be sealed with a water-resistive coating.
  2. Install drainage tracks (limited to terminations at foundations), back-wrap mesh, or edge-wrap mesh at system terminations. Treat all glass mat gypsum sheathing, cement board sheathing, OSB and plywood joints with Weatherseal Spray & Roll-on water-resistive barrier and embed Parex USA 396 Sheathing Tape.
  3. Flash all rough openings with Parex USA WeatherSeal Spray & Roll-on water-resistive barrier and embedded Parex USA 396 Sheathing Tape or Parex Flashing Membrane.
  4. Apply Parex USA WeatherSeal Spray & Roll-on Water-resistive barrier to the surface of the appropriate substrate (in accordance with product data sheet).
  5. Treat the heads of all window, door and similar openings with Parex USA DrainEdge and back-wrap mesh to allow for drainage at these locations.
- C. Insulation Board
  1. Apply Parex adhesive to backs of insulation boards with a Parex drainage notched trowel, with ribbons of adhesive oriented in a vertical direction (parallel to the 2 ft (61 mm)) dimension of the EPS board). Apply a 1 in (25.4 mm) wide horizontal ribbon of adhesive on the back at the lower edge of insulation boards installed over Parex USA DrainEdge.
  2. Install insulation board without gaps in a running bond pattern and interlocked at corners.
  3. Rasp irregularities off insulation board.
- D. Apply base coat and fully embed mesh in base coat; include diagonal mesh patches at corners of openings and reinforcing mesh patches at joints of track sections. Apply multiple layers of base coat and mesh where required for specified impact resistance classification.
- E. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's product data sheets for the specified finish coat or otherwise specified for the project.
- F. Finish Coat: Apply finish coat to match specified finish type, texture, and color. Do not apply finish coat to surfaces to receive sealant. Keep finish out of sealant joint gaps.

### **3.5 CLEAN-UP**

- A. Removal: Remove and legally dispose of CI system materials from job site.
- B. Clean surfaces and work area of foreign materials resulting from material installation.

### **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

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*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 (800-226-2424).*

## Product Performance Sheet | Page 1

*Optimum WaterMaster EIFS Assembly – Class PB*

| 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<br>Smoke Developed: 0 to 15 |
| Fire Resistance                          | ASTM E119                    | Maintain fire resistance of existing rated assembly                                 | See Current ICC Report                            |
| 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, See Current ICC Report                      |

| EIFS Strength         | Method     | ICC or ASTM Criteria                                    | Results                         |
|-----------------------|------------|---|---------------------------------|
| Transverse Wind Load  | ASTM E330  | Withstand positive and negative wind loads as specified | See Current ICC Report          |
| Impact Load           | ASTM E695  | No Current Requirement                                  | 30 lb. Impact mass; no cracking |
| Tensile Bond Strength | ASTM E2134 | Minimum 15 psi (103kPa)                                 | Pass                            |

| EIFS Environmental Durability | Method                           | ICC or ASTM Criteria   | Results                                    |
|-------------------------------|----------------------------------|--|--|
| Abrasion Resistance           | ASTM D 968                       | No cracking or loss of film integrity at 528 quarts (500 L) of sand  | Pass @ 1000 Liters                         |
| Accelerated Weathering        | ASTM G153<br>(Formally ASTM G23) | No deleterious effects* at 2000 hours when viewed under 5x magnification   | Pass @ 5512 Hours                          |
| Drainage Efficiency           | ASTM E2273                       | Min. 90%   | Pass                                       |
| Freeze/Thaw Resistance        | ASTM E 2485                      | No deleterious effects* at 10 cycles when viewed under 5x magnification  | Pass @ 60 cycles                           |
| Mildew Resistance             | ASTM D 3273                      | No growth supported during 28 day exposure period  | Pass @ 60 days                             |
| 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 at 12.0 psf (575 Pa) after 45 minutes |
| Moisture Resistance           | ASTM D2247                       | No deleterious effects at 14 day exposure  | Pass 28 days                               |
| Salt Fog Resistance           | ASTM B117                        | No deleterious effects* at 300 hours   | Pass @ 600 hours                           |

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

## Product Performance Sheet | Page 2

Optimum WaterMaster EIFS Assembly – Class PB

| 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 facing side of the substrate.              | Pass: no water penetration   |
| Air Infiltration                      | ASTM E2178                 | Calculated flow Rate at 75 Pa (1.57 lb/ft <sup>2</sup> , 0.3 in H <sub>2</sub> O) = < 0.02 L/m <sup>2</sup> *s (< 0.004 cfm/ft <sup>2</sup> ) | < .00001 L/m <sup>2</sup> *s (0.00001 cfm/ft <sup>2</sup> ) at 75 Pa (1.57 lb/ft <sup>2</sup> , 0.3 in H <sub>2</sub> O) |
| Air Leakage of Air Barrier Assemblies | ASTM E2357                 | Pass < 0.2 L / s·m <sup>2</sup> at 75 Pa) (< 0.04 cfm / ft <sup>2</sup> at 1.57 psf)  | Pass   |
| Air Leakage                           | ASTM E283                  | No Criteria   | < 0.004 cfm/ft <sup>2</sup>  |
| Elongation                            | ASTM D412                  | No Criteria   | 360%   |
| Flexibility                           | ASTM D522                  | No Criteria   | No Cracking at 1/8" (3 mm)   |
| 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   |
| Pull off Strength                     | ASTM D 4541                | No Water Penetration  | Pass - no water penetration  |
| 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<br>Flame Spread <25<br>Smoke Developed <450  | Flame Spread =0<br>Smoke Developed =0  |
| Tensile Bond Strength                 | ASTM E 2134/<br>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 and Restrained Environmental Cycling at 2.86 psf (137 Pa) for 15 minutes                             | No Water Penetration   |

Optimum WaterMaster EIFS Assembly – Class PB

| Parex USA Weatherseal Spray & Roll-on | Method                       | ICC and ASTM E2570 Criteria  | Results                    |
|---------------------------------------|------------------------------|--|----------------------------|
| 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 weatherin, 21.6 in (549 mm) 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     |
| 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 facing side of the substrate. | Pass: no water penetration |

| Reinforcing Mesh Impact Resistance              | Classification | Impact Range (in-lbs) |
|---|----------------|-----------------------|
| 355 Standard Mesh                               | Standard       | 25-49                 |
| 358.10 Intermediate Impact 10 Mesh              | Intermediate   | 50-89                 |
| 358.14 High Impact 15 Mesh (Plus Standard Mesh) | High           | 90-150                |
| 358.20 Ultra High Impact 20 Mesh /Standard Mesh | Ultra High     | >150                  |

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.