

CSI SECTION 07 24 00 – Exterior Insulation & Finish System - Class PB  
**07 25 19- Water-Drainage Exterior Insulation and Finish System**

**SYSTEM OVERVIEW**

This Overview is informational and does not form part of the specification.

Parex Standard WaterMaster - XPS is an exterior wall cladding system featuring continuous Extruded Polystyrene (XPS) insulation covered by a reinforced base coat and finish and adhered to an air and water-resistive barrier coating. Water drainage is accomplished by means of channels formed by vertical ribbons of the adhesive that bond the XPS to the air and water resistive barrier coating

Standard WaterMaster - XPS is qualified for use in combustible and noncombustible construction, fire resistance rated walls and residential and non-residential construction.

Sheathing is limited to glass mat gypsum sheathing, cement board, and Exposure 1 plywood. Plywood requires 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 requires 2 coats of WeatherSeal Spray & Roll-on.

For installation on OSB in other regions refer to Parex 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 wind loads 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.

*Notes in italics, such as this one, are explanatory and intended to guide the design/construction professional and user in the proper selection and use of materials. This specification should be modified where necessary to accommodate individual project conditions.*

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Manufacturer's requirements for the proper design, use, and installation of a Continuous Insulation Wall 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 C297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
- C. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal insulation
- D. ASTM C1135 Test Method for Determining Tensile Adhesion Properties of Structural Sealants
- E. ASTM D968 Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- F. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity
- G. ASTM D2294 Standard Test Method for Creep Properties of Adhesives in Shear by Tension Loading (Metal-to-Metal).
- H. ASTM D2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- I. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- J. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials.
- K. ASTM E119 Standard Test Method for Fire Tests of Building Construction and Materials.
- L. ASTM E283 Standard Test Method for Determining rate of Air Leakage Through Exterior Windows, Curtains Walls, and Doors Under Specified Pressure Difference Across the Specimen
- M. ASTM E330 Test Method for Structural Performance by Uniform Static Air Pressure Difference.
- N. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference.
- O. ASTM E2178 Standard Test Method for Air Permeance of Building Materials
- P. ASTM E2273 Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies
- Q. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
- R. ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
- S. ASTM E2568 Standard Specification for PB Exterior Insulation and Finish Systems
- T. ASTM E2570 Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
- U. ASTM G155/  
G153 Accelerated Weathering for Exposure of Nonmetallic Materials.
- V. MIL STD 810B Military Standard, Environmental Test Methods
- W. NFPA 259 Test Method for Potential Heat of Building Materials.
- X. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source.
- Y. NFPA 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 SYSTEM DESCRIPTION

- A. Standard WaterMaster - XPS: Parex Adhesive, Dow™ Panel Core 20 XPS Board, Parex Base Coat with embedded fiberglass Reinforcing Mesh, Parex Primer (Optional) and Finish Coat. This insulation board is installed over a water-resistive barrier coating consisting of Parex USA Weatherseal Spray & Roll-On and Parex USA Flashing Membrane and/or WeatherFlash. The WeatherSeal and/or WeatherFlash is applied over glass mat gypsum sheathing, cement board sheathing, Exposure 1 plywood or, OSB, concrete or concrete masonry. 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 terminations, completely encapsulate insulation board edges by mesh reinforced base coat, substrate or drainage track (Track is 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. 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.
- e. 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. 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 CONTINUOUS INSULATION (CI) SYSTEMS*

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 EIFS 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. EIFS 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.
- 8. Where a fire-resistance rating is required by code use the CI system over a rated concrete or concrete masonry assembly. Limit use over rated frame assemblies to non-load bearing assemblies (the CI system is considered not to add or detract from the fire-resistance of the rated assembly). Maximum allowable XPS thickness: 2 1/2 inches (63.5 mm).

## **1.5 SUBMITTALS**

- A. General: Submit Samples, , manufacturer's product data and certifications, and sample warranties in accordance with Division 01 General Requirements Submittal Section.

## **1.6 QUALITY ASSURANCE**

- A. Products manufactured under an ICC Evaluation Service approved and audited 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 substrate 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**

### **2.1 MANUFACTURERS**

- A. Manufacturer, Basis of Design: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807 Contact: 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 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 365 Flashing Membrane: Self-sealing, polyester mat- faced, rubberized asphalt membrane, 30 mils (0.76 mm) thick.
  - 4. Parex USA WeatherFlash: liquid flashing and joint filler is used to prepare and seal exterior wall rough openings and detail joints as part of the WeatherTech air and water barrier system.
- 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 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 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; used as an adhesive to laminate Insulation Board to the WeatherSeal Spray & Roll-on water-resistive barrier.
  - 4. 121 Cool Base: White basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water; used as an adhesive to laminate Insulation Board to the WeatherSeal Spray & Roll-on water-resistive barrier.
- C. Insulation Board:
  - 1. Dow STYROFOAM™ Panel Core 20 Insulation – Type X extruded polystyrene (XPS) rigid foam plastic insulation board as listed in ICC ESR 2142
    - a. Minimum XPS insulation thickness is 1 inch (25 mm).
    - b. Maximum XPS insulation thickness is 3 inches (77 mm), except as noted below for fire-resistance rated wall assemblies.
    - c. Maximum XPS Board Size is 2' x 4"

2. Fire Protection: Do not use XPS foam plastic in excess of 2 inches (51 mm) thick on fire-resistance rated walls of Types I, II, III, or IV construction.

D. Base Coats:

1. 121 Optimum and 121 Dry Optimum Base Coat: 100% acrylic polymer base, requiring the addition of Portland cement.
2. 121 Dry HI: High Impact basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water.
3. 121 Cool Base: White basecoat & adhesive. Copolymer based, blend of cement and proprietary ingredients, requires the addition of water

*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 EIFS, 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.
7. 357 Corner Mesh: Reinforcing mesh used as corner reinforcement; required when using Ultra-High Impact 20 Mesh.

*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 aggregate specialty finishes.

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

G. Finish

1. Parex DPR Optimum Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Project Designer

*EDITOR NOTE: ADD COLORFAST PIGMENTS TO ANY PRE-TINTED ACRYLIC 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.

*EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE ONE FINISH TYPE, TEXTURE, & COLOR WITH ACCESSORY MATERIALS TO CREATE DESIRED EFFECT*

3. Parex USA Variance [enter selected product]: Acrylic-based specialty finish. Finish type, texture and color as selected by Project Designer.
  - a. Variance Antiquing Gel: a water-based, tinted, semi-transparent, acrylic emulsion for

staining, sealing, and protecting concrete, masonry and other cementitious substrates. Use as required to achieve desired finish.

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

4. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealer for use as a protective coating over acrylic finishes. Use 600 Clear or 610 Matte Clear as detailed on drawings.
- H. Parex 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 C1325
  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 C79.
  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 CI system 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 CI system 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 CI system.
  8. Refer to CI system manufacturer's current bulletin for listing of sealants which have been tested and have been found to be compatible with CI system 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). Treat all sheathing, joints and back legs of track and flashing, with WeatherSeal Spray & Roll-on water-resistive barrier and embed Parex 396 Sheathing Tape or Parex USA WeatherFlash in accordance with product datasheet.
  - 3. Flash all rough openings with Weatherseal Spray & Roll-on water-resistive barrier and embedded Parex 396 Sheathing Tape, Parex Flashing Membrane or Parex USA WeatherFlash.
  - 4. Apply Weatherseal Spray & Roll-on Water-resistive barrier to the surface of the substrate (in accordance with product data sheet).
  - 5. Treat the heads of all window, door, and similar openings with Parex DrainEdge to allow for drainage at these locations.
  - 6. Install back-wrap or edge-wrap mesh at all System terminations.
- 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 XPS 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 DrainEdge.



2. Install insulation board without gaps in a running bond pattern with the long dimension horizontal and interlocked at corners.
  3. After adhesive has completely dried, 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 – XPS*

| CI System Fire Performance              | Method                  | ICC or ASTM Criteria  | Results   |
|---|-------------------------|---|---|
| Fire Resistance                         | ASTM E119               | IBC 703.3(4), 2603.5.1 & 2603.5.3   | 3" maximum XPS thickness                          |
| Radiant Heat Exposure                   | NFPA 268                | IBC 2603.5.3 & 2603.5.7   | NFPA 268 Compliance<br>3" XPS maximum thickness   |
| Intermediate Scale Multistory Fire Test | NFPA 285 (UBC Std 26-9) | Required for Noncombustible construction  | Meets flame propagation and temperature limits    |
| Potential Heat of Building Materials    | NFPA 259                | IBC 2603.5.3 & 2603.5.5   | NFPA 285 Compliance<br>3" XPS maximum thickness   |
| Surface Burning Characteristic          | 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 |

| CI System Strength    | Method     | ICC or ASTM Criteria                                    | Results                        |
|-----------------------|------------|---|--------------------------------|
| Gardner Impact Test   | ASTM D2794 | No Requirement  | 25 to 200 in-lbs (mesh weight) |
| Transverse Wind Load  | ASTM E330  | Withstand positive and negative wind loads as specified | See Current ICC Report         |
| Tensile Bond Strength | ASTM E2134 | Minimum 15 psi (103kPa)                                 | Pass                           |

| CI System Environmental Durability | Method                             | ICC or ASTM Criteria   | Results  |
|------------------------------------|------------------------------------|--|--|
| Abrasion Resistance                | ASTM D 968                         | No cracking or loss of film at 528 quarts (500 L) of sand                | Pass @ 500 Liters  |
| Accelerated Weathering             | ASTM G153 (ASTM G 23)<br>ASTM G154 | No deleterious effects* at 2000 hours when viewed under 5x magnification | 2000 Hours: no deleterious effect<br>2000 Hours: no deleterious effect |
| Drainage Efficiency                | ASTM E2273                         |  | Pass   |
| Fungus Resistance                  | MIL STD 810B                       |  | 28 days: no growth   |

## Product Performance Sheet | Page 2

*Optimum WaterMaster – XPS*

| Environmental Durability | Method         | ICC or ASTM Criteria  | Results                           |
|--------------------------|----------------|---|-----------------------------------|
| Freeze/Thaw Resistance   | ASTM E 2485    | No deleterious effects* at 10 cycles when viewed under 5x magnification   | Pass                              |
| Mildew Resistance        | ASTM D 3273    | No growth supported during 28 day exposure period   | Pass                              |
| Water Penetration        | ASTM E 331     | No water penetration beyond the plane of the base coat/CI 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       |
| Wind-Driven Rain         | F.S. TT-C-555B |   | 24 hours: no penetration of water |

*\*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 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)  | After Loading: 0.0002 cfm/ft <sup>2</sup> (0.0008 L/s·m <sup>2</sup> )   |
| 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) @-30°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 <sup>2</sup> .   |
| Pull off Strength                     | ASTM D 4541              | No Water Penetration  | Pass - no water penetration  |

| <b>Parex USA Weatherseal Spray &amp; Roll-on</b> | <b>Method</b>                | <b>ICC and ASTM E2570 Criteria</b>  | <b>Results</b>  |
|--|------------------------------|---|---|
| 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                                      |
| 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  |
| VOC  | EPA Reference Test Method 24 | US EPA, South Coast AQMD and Greenseal Standard   | 10 g/L  |

| <b>REINFORCING MESH IMPACT RESISTANCE</b>       | <b>Classification</b> | <b>Impact Range (in-lbs)</b> |
|---|-----------------------|------------------------------|
| 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.*