

# **PAREX<sup>®</sup> Water Master<sup>™</sup> Commercial-DB System Specification**

Expanded language

**CSI SECTION 07 24 00**

Parex Exterior Insulation & Finish System—EIFS Water Master<sup>™</sup> Commercial-DB System—Jan 07 Edition

**CSI SECTION 07 24 00 – Exterior Insulation & Finish System (EIFS)—Class PB**

**CSI SECTION 07 24 19 – Water Drainage System—Exterior Insulation & Finish System (EIFS)—Class PB**

**(Parex EIFS Water Master<sup>™</sup> Commercial-DB System, Class PB)**

## **SYSTEM OVERVIEW**

The Water Master Commercial - DB System is a Class PB EIF System distinguished by installation with drainage. Drainage is accomplished by means of vertical grooves that are cut into the back of the EPS insulation board. The board is then pressed onto the wet Parex KeyCoat weather barrier coating.

Parex Water Master Commercial - DB System is qualified for use on combustible and non-combustible construction, residential and non-residential construction.

This system is not qualified for use on wood sheathed walls. Sheathing is limited to glass fiber mat-faced gypsum sheathing such as Georgia Pacific Dens-Glass<sup>™</sup> Gold and cement board. (Refer to Parex Water Master with StuccoWrap<sup>™</sup> and Grade D building paper for wood sheathed residential construction.)

- The system is not qualified for application to OSB (oriented strand board) sheathing.
- Some jurisdictions may require special inspections.
- 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 terminations of the system must be made weather-tight, typically by sealants and/or flashings.

## **PART 1—GENERAL**

### **1.01 SUMMARY**

A. Section Description: Section includes Exterior Insulation and Finish System (EIFS—Class PB).

B. Products Installed But Not Supplied Under This Section:

1. EIFS Joint Sealant: Refer to Division 7 Joint Treatment (Sealant) section. Installation of EIFS joint sealant shall be by EIFS applicator or a separate installer under direct supervision and control of EIFS applicator. EIFS Joint Sealant installer shall be experienced and competent in the installation of elastomeric construction sealants.

C. Related Sections:

1. Division 3—Concrete
2. Division 4—Unit Masonry
3. Division 5—Light Gauge Cold-Formed Steel Framing
4. Division 6—Carpentry for Sheathing
5. Division 7—Flashing
6. Division 7—Joint Sealant
7. Division 9—Portland Cement Plaster
8. Specialty Coatings

## 1.02 DEFINITIONS

### A. Definitions:

1. Backwrapping: Continuation of base coat and fiberglass reinforcing fabric around the edge of insulation board and onto the substrate in back of the insulation.
2. Edgewrapping: Continuation of base-coated fiberglass reinforcing fabric around the edge of the insulation board and onto the rough opening wall framing or masonry.
3. Expansion joint: Sealant, back-up material, and primer manufactured by others, forming a moveable juncture between adjacent materials.

## 1.03 SYSTEM DESCRIPTION

### A. Description of Parex EIFS Water Master™ Commercial-DB System:

1. Parex EIFS Water Master™ Commercial-DB System with Cementitious Base Coat: An Exterior Insulation and Finish System (EIFS) consisting of channeled, expanded polystyrene insulation (EPS) board, non-cementitious adhesive, vented track, cementitious base coat with embedded reinforcing fabric mesh, primer (optional), and finish coat. This system is installed over a secondary weather barrier consisting of Parex KeyCoat Liquid Membrane & Adhesive applied over Georgia Pacific Dens Glass® Gold sheathing to form a water-draining assembly. Water Master™ Commercial-DB complies with code requirements for non-combustible types of construction.

### B. Parex EIF System Functional Criteria:

#### 1. General:

- a. Insulation board: At vertical system termination, completely encapsulate insulation board edges by mesh-reinforced base coat. At terminations at system lower edges, enclose insulation board edges with Parex Vented Track. The use and thickness of insulation board shall be in accordance with applicable building codes and Parex requirements.
- b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration behind the secondary weather barrier. Refer to Division 7 Flashing section for specified flashing materials.
- c. Design-negative windload shall not exceed 50 psf. (2394 Pa). Contact Parex for higher design-negative windload.
- d. Inclined surfaces shall follow the guidelines listed below:
  1. Minimum slope: 6 in. (152mm) of vertical rise in 12 in. (305mm) of horizontal run.
  2. For sloped surfaces, run of slope shall be a maximum of 12 in. (305mm).
- e. The building interior shall be separated from the insulation board by 1/2 in. (12.7mm) of gypsum board or equivalent 15-minute thermal barrier.

#### 2. Substrate Systems:

- a. Shall be engineered to withstand applicable design loads.
- b. Maximum deflection of substrate system under positive or negative design loads shall not exceed 1/240 of span except as otherwise approved in writing by Parex prior to installation.
- c. Substrate dimensional tolerance: Flat within 1/4 in. (6.4mm) in any 4-ft. (122cm) radius.

EDITOR NOTE: COORDINATE BELOW IMPACT RESISTANCE CLASSIFICATION REQUIREMENTS RECOMMENDED BY EIMA INDUSTRY MEMBERS ASSOCIATION TEST METHOD AND STANDARD 101.86—"STANDARD TEST METHOD FOR RESISTANCE OF EXTERIOR INSULATION FINISH SYSTEMS TO THE EFFECTS OF RAPID DEFORMATION (IMPACT)."

3. Impact Resistance Classification: Parex EIFS Commercial-DB Water Master™ System shall be classified in accordance with EIMA EIFS classification and impact ranges as follows:
  - a. Standard Impact Resistance, 25–49 in. lb. (2.8–5.6 J) Impact Range.
4. Expansion Joints: Continuous expansion joints shall be installed at the following locations:
  - a. Building expansion joints
  - b. Substrate expansion joints
  - c. Floor lines in wood frame construction
  - d. Where Parex EIF System panels abut one another
  - e. Where Parex EIF 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

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- g. Where substrate changes (For exceptions to joints at substrate changes, contact ParexLaHabra Technical department.)

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.

- h. Substrate movement and expansion and contraction of Parex EIF 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. (12.7mm) where EIFS abuts other materials
- 2) 3/4 in. (19mm) where EIFS abuts the EIFS
- 3) Larger width where indicated on drawings

#### 5. Manufacturer's Details:

- a. Parex EIFS System latest published information shall be followed for standard detail treatments.
- b. Non-standard detail treatments shall be as recommended by Parex approved by architect and, be part of the contract documents.

6. Building Code Conformance: Parex EIF System shall be acceptable for use on this project under building code having jurisdiction.

## 1.04 SUBMITTALS

- A. General: Submit samples, reports, certificates, and manufacturer's warranty in accordance with Division 1 General Requirements Submittal section.

## 1.05 QUALITY ASSURANCE

### A. Qualifications:

#### 1. EIFS Manufacturer:

- a. Shall have marketed Exterior Insulation and Finish Systems in United States for at least ten years.
- b. Shall have completed projects of same building size and type as these project.
- c. Must be a member of EIMA and AWCI.
- d. Must be ISO 9001 certified.

#### 2. EIFS Applicator:

- a. Shall have attended a Parex Educational Seminar for installation of system.
- b. Shall possess a current certificate of education.
- c. Shall be experienced and competent in installation of plaster-like materials and shall have completed at least five (5) projects of similar size and type of current project.

### B. Regulatory Requirements:

1. Insulation Board: Shall be produced and labeled under a third-party quality program as required by applicable building code.

## 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver EIFS materials supplied by Parex to site location in original unopened containers with labels intact. Upon arrival, materials shall be inspected for damage, and manufacturer notified of any discrepancies. Unsatisfactory materials shall not be used.

- B. Storage: Store EIFS materials supplied by Parex 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. Store insulation board flat.

## 1.07 PROJECT SITE CONDITIONS

- A. General: Provide access to electric power and clean potable water at area where Parex EIFS System materials are installed.

### B. Environmental Conditions: In accordance with manufacturer's requirements, comply with:

1. Ambient air temperature: Minimum 40°F (4°C) and rising, and remaining so for 24 hours thereafter.
2. Do not apply Parex EIFS materials to substrates whose temperature is below 40°F (4°C).
3. Do not apply Parex EIFS during inclement weather unless appropriate protection is employed.
4. Protect Parex EIFS materials from weather and other damage.



**1.08 WARRANTY**

A. Warranty: Upon request, at completion of installation, provide Parex Water Master™ Commercial Limited Warranty.

**1.09 MAINTENANCE**

- A. Maintenance Instructions: At completion of EIF System installation, provide manufacturer's maintenance instructions for EIF System installed.
  - 1. Refer to Division 1 General Requirements for requirements for submitting maintenance documentation.

**PART 2—PRODUCTS**

**2.01 MANUFACTURERS**

A. Manufacturer: Parex, P.O. Box 189, Redan, GA 30074

- 1. System: Parex Exterior Insulation & Finish System (EIFS) Water Master™ Commercial-DB System.
  - a. Secondary Weather-Resistive Barrier:
    - 1) Parex KeyCoat Liquid Membrane Adhesive 395A, trowel-applied liquid membrane weather barrier.
    - 2) Parex Sheathing Tape 396.
    - 3) Parex Flashing Membrane 365.
  - b. Adhesive: Parex KeyCoat Liquid Membrane & Adhesive or manufacturer’s specified adhesive for the system.
  - c. Insulation Board: In compliance with manufacturer’s requirements for the system.
  - d. Base Coat: Base Coat & Adhesive 121, 121 Dry, or 121 XL (Cementitious), or ABC-N1 Base Coat & Adhesive 302.

EDITOR NOTE: COORDINATE BELOW WITH PROJECT REQUIREMENTS.

- e. Mesh Reinforcement: Locations to achieve impact strength shall be as follows:
  - 1) Locations (not otherwise noted): EIMA Impact Classification: Standard.

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

2) Locations:	EIMA Impact Classification:
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EDITOR NOTE: CONSULT WITH PAREX AND COORDINATE BELOW TRACKS, AND BACKWRAPPING WITH REQUIREMENTS FOR PROJECT CONDITIONS.

- f. Track: Vented Track 363 as required for EIFS.
- 2. Parex System Finish:

EDITOR NOTE: SPECIFY BELOW TYPES FROM MANUFACTURER'S TEXTURE FINISHES AND COLORS. REFER TO PAREX PRODUCT BINDER, FOR FINISH TYPE, TEXTURE, AND COLOR SELECTION.

- a. Type: \_\_\_\_\_
- b. Texture: \_\_\_\_\_
- c. Color: \_\_\_\_\_

3. Product Performance Requirements: Refer to Product Performance Sheet as attached herein.

**B. MATERIALS:**

- 1. Secondary Weather Barrier:
  - a. Parex KeyCoat Liquid Membrane Adhesive 395A: Vapor-permeable, fluid-applied flexible coating for Georgia Pacific Dens Glass® Gold sheathing to provide a secondary weather barrier.
  - b. Parex Sheathing Tape 396: Non-woven synthetic fiber tape to reinforce liquid membrane at sheathing board joints.
  - c. Parex Water Master™ Flashing Membrane 365: Self-sealing, non-woven, mat-backed, rubberized asphalt membrane, 30 mils (0.76mm) thick.
- 2. Water Master™ Insulation Board:
  - a. Shall be produced by a manufacturer approved by Parex.
  - b. Shall conform to ASTM C-578, Type I and the Parex specification for molded Expanded Polystyrene insulation board.
  - c. Maximum size shall be 2 ft. x 4 ft. (610mm x 1219mm).
  - d. Nominal thickness shall be 1-1/2 in. (38mm) minimum.
  - e. Back of insulation board shall be configured with channels per Parex Water Master™ design.

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## 3. Adhesive:

- a. Parex KeyCoat Liquid Membrane Adhesive 395A: Full acrylic weather-resistive membrane and adhesive for bonding Parex Water Master™ insulation board to Dens Glass® Gold or cement fiber board.
- b. Sheathing Adhesive 303: 100 percent acrylic polymer-based; ready to use, applied without the addition of cement; used as an adhesive to laminate EPS insulation board to appropriate substrates.

EDITOR NOTE: RETAIN BELOW STANDARD MESH FOR PAREX WATER MASTER™ COMMERCIAL EIF SYSTEM FOR STANDARD IMPACT RESISTANCE CLASSIFICATION.

## 4. Parex Reinforcing Mesh:

- a. Standard Mesh 355: Weight 4.5 oz. per yd.<sup>2</sup> (153g/m<sup>2</sup>); coated for protection against alkali. Standard reinforcement of Parex EIFS, or for use with High Impact 14 Mesh, or Ultra High Impact 20 Mesh.
- b. Short Detail Mesh 356: Reinforcing mesh used for backwrapping and details.
- c. Self-Adhesive Detail Mesh 352: Reinforcing mesh used for complex details.

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

- d. Intermediate Impact 10 Mesh 358.10: Weight 12 oz per yd.<sup>2</sup> (407g/m<sup>2</sup>) reinforcing mesh used with Parex EIFS Water Master™ Commercial-DB System to achieve EIMA intermediate impact strength.
- e. High Impact 14 Mesh 358.14: Weight 15 oz. per yd.<sup>2</sup> (509g/m<sup>2</sup>) reinforcing mesh used with Parex EIFS Water Master™ Commercial-DB System to achieve EIMA high impact strength.
- f. Ultra High Impact 20 Mesh 358.20: Weight 20 oz. per yd.<sup>2</sup> (678g/m<sup>2</sup>) reinforcing mesh used with Parex EIFS Water Master™ Commercial-DB System to achieve ultra-high impact strength.
- g. Corner Mesh 357: Reinforcing mesh used as a corner reinforcement; required with Ultra-High Impact 20 Mesh.

## 5. Parex Base Coat:

- a. Base Coat & Adhesive 121: 100 percent acrylic polymer base, requiring the addition of portland cement.
- b. Base Coat & Adhesive 121 Dry: Copolymer-based, factory blend of cement and proprietary ingredients.
- c. Base Coat & Adhesive 121 XL: Copolymer-based, factory blend of cement and proprietary ingredients.
- d. ABC-N1 Base Coat & Adhesive 302: 100 percent acrylic polymer base, ready to use.

## 6. Parex Primers:

- a. Primer 310: 100 percent acrylic-based coating to prepare surfaces for Parex finishes.
- b. Sanded Primer 313: 100 percent acrylic-based coating to prepare surface for Parex Cerastone finish.

## 7. Parex Finish Coat: Factory-blended, 100 percent acrylic polymer-based finish, integrally colored. Finish type, texture, and color as selected by architect.

## 8. Parex Vinyl Track: Exterior-grade PVC extrusion accessory used for base termination of Parex EIFS at grade; provides straight termination. Vented Track 363: Vent holes for drainage and perforated front flange to key base coat.

## 9. Mineral wool strips 4 pounds per ft.<sup>3</sup> (60kg/m<sup>3</sup>) actual density minimum, 4 in. (101mm) wide; same thickness as the EPS.

## 10. Water: Clean, potable water.

## 11. Portland Cement: ASTM C 150, Type I.

## 2.02 RELATED MATERIALS

### A. Sheathing:

1. Dens Glass® Gold glass mat-faced gypsum sheathing conforming to ASTM C1177, as manufactured by Georgia Pacific or equal.
2. Cement Fiber Sheathing conforming to ASTM C 1186.
3. CDX plywood, PS 1 Exposure 1, minimum 7/16" thick, C veneer facing out, panels gapped 1/8" at all edges.

### B. Poured or precast concrete and/or masonry.

### C. Fasteners for concrete, masonry or other irregular substrates:

1. Wind-Lock Wind Devil II Plate with Wind-Lock masonry screw or appropriate screw for other substrates.
2. Buildex Gridmaster Plate with Buildex Concrete Pin.

### D. Flashing: Refer to Division 7 Flashing section for flashing materials.

### E. Sealant System:

1. Sealant for expansion joints between panelized Parex EIFS sections shall be ultra-low modulus designed for minimum 100 percent elongation and minimum 50 percent compression and as selected by architect.

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2. Sealant for perimeter seals around window and door frames and other wall penetrations shall be low modulus, designed for minimum 50 percent elongation and minimum 25 percent compression, and as selected by architect.
3. Sealants shall conform to ASTM C 920, grade NS.
4. Expansion joints between sections of Parex EIF System shall have a minimum width of 3/4 in. (19mm).
5. Perimeter seal joints shall be a minimum width of 1/2 in. (12.7mm).
6. Sealant backer rod shall be closed-cell polyethylene foam.
7. Apply sealant to tracks or base coat of Parex EIF System.
8. Refer to Parex current bulletin for listing of sealants which have been tested and have been found to be compatible with Parex EIF Systems.
9. Color shall be as selected by architect.
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**

### **3.01 MANUFACTURER'S INSTRUCTIONS**

- A. Compliance: Comply with manufacturer's instructions for installation of exterior insulation & finish system.

REMINDER: PAREX WATER MASTER™ COMMERCIAL SYSTEM IS A DRAINABLE WEATHER BARRIER ASSEMBLY. SYSTEM PERFORMANCE, DEPENDENT UPON, AMONG OTHER FACTORS, PROPER FLASHING AND JOINT SEALING, AND ATTENTION TO PROPER FLASHING AND JOINT SEALANT DETAILS INDICATED ON DRAWINGS.

### **3.02 EXAMINATION**

- A. Examination of Substrate:

1. Prior to installation of Parex EIF System, examine substrate as follows:
  - a. Substrate shall be of a type approved by Parex.
  - b. Substrate shall be examined for soundness, such as tightness of connections, crumbling or looseness of surface, voids and projections, spacing of panels, and other conditions.
  - c. Substrate shall be examined for dimensional tolerances per this specification.
  - d. Substrate surface shall be free of foreign materials such as oil, dust, dirt, form release agents, paint, wax, water, frost, and other harmful materials.
  - e. Concrete and/or masonry substrates shall be free from any projections that would adversely affect the ability of the Water Master™ Insulation Board from laying flat on the substrate.
2. Advise contractor of discrepancies preventing installation of a manufacturer's warranty EIFS. Do not proceed with EIFS work until unsatisfactory conditions are corrected.
3. Correction of unsatisfactory conditions of substrates installed by other trades shall be responsibility of contractor.

### **3.03 PROTECTION AND COORDINATION**

- A. Protection: Protect surrounding material surfaces and areas during installation of Parex EIF System. Protect Parex EIF System from weather and other damage immediately after installation and until installation of sealants and flashing.

- B. Coordination:

1. Coordinate installation of Parex EIF System with other construction trades.
2. Ensure a continuous EIFS operation, free of cold joints, scaffolding lines, texture variations, and other non-complying installation procedures.
3. Promptly flash and/or seal system terminations to prevent water infiltration. Use temporary cover when permanent flashing or sealant installation is delayed.
4. Immediately cover tops of walls to prevent water infiltration.
5. Upon full cure of Parex EIF System, promptly install sealant to surfaces to be sealed.

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## 3.04 INSTALLATION

- A. General: Installation shall conform to this specification and Parex EIFS written instructions and drawing details.
1. Install tracks, back-wrap mesh, or edge-wrap mesh at system terminations.
  2. Apply Water Master™ Flashing Membrane at rough openings and tracks to provide continuity of water shedding.
  3. Where the building code requires the construction to be a non-combustible type, install mineral wool strips at the terminations of the system above wall openings such as windows, doors, louvers, etc.
  4. Treat all "Dens Glass® Gold, cement board sheathing and plywood joints with KeyCoat Liquid Membrane Adhesive 395A and embed Parex Sheathing Tape 396 to provide continuity of water shedding.
  5. Apply Parex KeyCoat Liquid Membrane Adhesive to entire surface of substrate to form a continuous, monolithic, weather-resistive barrier.
  6. Install Water Master™ insulation board into the wet KeyCoat Liquid Membrane Adhesive and press firmly into place. Make sure that the boards are butted tightly together. Rasp irregularities off insulation board.
  7. Concrete and/or masonry substrates may require leveling the surface with the Parex Base Coat/Adhesive 121 and/or supplemental mechanical attachment to ensure contact with the Parex KeyCoat Liquid Membrane Adhesive 395A. Minimum of six (6) fasteners per 2' x 4' sheet of Water Master™ Insulation Board are required to ensure continuous contact with the wet KeyCoat (consult fastener manufacturer for appropriate fastener pattern) and more may be required if the substrate is highly irregular.
  8. Rasp irregularities off insulation board after adhesive has dried.
  9. 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.
  10. Apply primer to base coat after drying. Primer may be omitted if it is not required by the manufacturer's primer and base coat product data sheets for the specified finish coat.
  11. Apply finish coat to match specified finish type, texture, and color. Apply finish except at base coat areas to receive sealant.
  12. Install sealant in accordance with Parex details and instructions. Apply sealant to base coat.

## 3.05 CLEANUP

- A. General: Remove excess and waste EIFS materials from job site.
1. Clean EIFS surfaces and work area of foreign materials resulting from EIFS operations.

## END OF SECTION

### Obligatory Disclaimer Statement

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

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## PRODUCT PERFORMANCE SHEET

### FIRE PERFORMANCE

TEST	METHOD	WATER MASTER™ Commercial-DB
Intermediate Scale Multistory Test Apparatus	UBC Standard 26-9	Pass
Radiant Heat Exposure	NFPA 268	Pass: 1-1/2–4 in. EPS
Surface Burning Characteristics of Coatings & Adhesives	ASTM E 84	Flame Spread: 0–15 Smoke Developed: 0–15

### STRENGTH

TEST	METHOD	WATER MASTER™ Commercial-DB
Transverse Wind Load Resistance	ASTM E 330	166 psf positive (7948 Pa), 150 psf negative (7182 Pa)
Gardner Impact Test EIMA 101.86	ASTM D 2794	25–200 in. lb. (2.8–22.6 J) (depends on mesh weight)
Tensile Bond	ASTM C 297	26 psi (179 kPa) to Dens Glass® Gold
Water Vapor Transmission	ASTM E 96	8.4 U.S. perms

### ENVIRONMENTAL DURABILITY

TEST	METHOD	WATER MASTER™ Commercial-DB
Accelerated Weathering	ASTM G 23 ASTM G 53	2000 hours: no deleterious effect 2000 hours: no deleterious effect
Wind-Driven Rain	F.S. TT-C-555B	24 hours: no penetration of water
Water Penetration EIMA 101.02	ASTM E 331/ ICBO ES AC 24	Pass
Freeze-Thaw Resistance EIMA 101.01	ASTM C 67/ ICBO ES AC 24	60 cycles: no deterioration 10 cycles: pass
Salt Fog Resistance	ASTM B 117	500 hours: no deterioration
Moisture Resistance	ASTM D 2247	14 days: no deleterious effect
Abrasion Resistance	ASTM D 968	500 liters: no deleterious effect
Fungus Resistance	MIL STD 810B	28 days: no growth
Mildew Resistance	ASTM D 3273	35 days: no growth

### DRAINAGE PERFORMANCE

TEST	METHOD	WATER MASTER™ Commercial-DB
Drainage Efficiency	ICBO ES AC 24	Pass: Efficiency > 90 percent

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. Parex will mail copies of original test reports at no charge by request. Please contact Parex if further information is required.

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