



# Armourwall 100 WaterMaster CMU Stucco Assembly Specifications

## CSI SECTION 09 24 00

### CSI SECTION 09 24 00 – PORTLAND CEMENT PLASTER

*Fiber Reinforced One-Coat Stucco with Enhanced Water-Resistive Barrier over Masonry or Concrete*

#### SYSTEM OVERVIEW

*The Armourwall 100 WaterMaster Stucco Assembly, when installed over CMU, can be either direct applied using Parex USA WeatherDry as per this specification over the brown coat or installed with lath.*

*For installation with lath, see Armourwall 100 Stucco Assembly Specification. Additional information is also provided in Technical Bulletin, Stucco over metal lath attached to CMU PUSA 66-12.pdf*

*The Armourwall 100 WaterMaster System is qualified on fire rated and non-combustible construction. Specifics for these wall assemblies and allowable continuous insulation thickness are listed in the ICC Evaluation Report ESR 2564.*

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Supply and installation of fiber reinforced, one-coat stucco assembly.

##### 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 25 00 - Weather Barriers
- E. Section 07 62 00 - Sheet Metal Flashing and Trim
- F. Section 07 90 00 - Joint Protection
- G. Section 08 50 00 - Windows
- H. Section 09 21 16 - Gypsum Board Assemblies

##### 1.3 REFERENCES

- A. ASTM C144 Standard Specification for Aggregate for Masonry Mortar
- B. ASTM C578 Specification for Preformed, Cellular Polystyrene Thermal Insulation
- C. ASTM C847 Standard Specification for Metal Lath
- D. ASTM C897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster
- E. ASTM C926 Standard Specification for Application of Portland Cement-Based Plaster
- F. ASTM C1396 Standard Specification for Gypsum Board
- G. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials
- H. ASTM E119 Method for Fire Tests of Building Construction and Materials
- I. ASTM E330 Test Method for Structural Performance of Windows, Curtain Walls, and Doors by Uniform Static air Pressure Difference
- J. ASTM G153 Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
- K. ICC AC 11 Acceptance Criteria for Cementitious Exterior Wall Coating
- L. ICC AC 219 Acceptance Criteria for Exterior Insulation And Finish Systems

## 1.4 ASSEMBLY DESCRIPTION

- A. One-Coat Stucco Assembly with Enhanced Water-Resistive Barrier: pre-mixed stucco Basecoat, waterproof Basecoat and either an acrylic or elastomeric based finish coat.
- B. Stucco Functional Criteria:
1. General: Stucco application shall be to vertical substrates or to substrates sloped for positive drainage. Substrates sloped for drainage shall have additional protection from weather exposure that might be harmful to coating performance.
  2. Testing to meet International Code Council Acceptance Criteria AC11.
  3. Performance Requirements of Stucco Assembly Warranty indicating Single:

Test	Method	ICC AC 11 Criteria	Results
Accelerated Weathering	ASTM G153	2000 Hours	No deleterious effect
Freeze-Thaw Resistance	ICC AC 11	10 cycles	Pass
Transverse Wind Load Resistance	ASTM E330	Meet Design Loads	Refer to ICC-ES ESR-2564
Fire Resistance	ASTM E119	One hour fire	Refer to ICC-ES ESR-2564
Drainage	ICC AC 11	90 %	Refer to ICC-ES ESR-2564

4. Substrate materials and construction shall conform to the building code having jurisdiction.
  5. Performance Requirements of Coatings applied to Expanded Polystyrene features: Must comply with ASTM E 2568 or ICC Acceptance Criteria AC 219 for EIFS.
  6. Substrates shall be sound, dry and free of dust, dirt, laitance, efflorescence and other harmful contaminants.
  7. Substrate Dimensional Tolerances: Flat with 1/4 in (6.4 mm) within any 10 ft (3 m) radius.
  8. Maximum deflection of substrate system under positive or negative design loads shall not exceed L/360 of span.
- C. Expansion and Control Joints: Continuous expansion and control joints shall be installed at locations in accordance with ASTM C1063 and ASTM C926.
1. Substrate movement, and expansion and contraction of stucco 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 specified by the designer or shown on the project drawings.
  2. For direct application to concrete or masonry, stucco joints are required only at control/expansion joints in the underlying concrete or masonry.

## 1.5 SUBMITTALS

- A. General: Submit Samples, Evaluation Reports and manufacturer's product data sheets in accordance with Division 1 General Requirements Submittal Section.
- B. Samples: Submit samples for approval. Samples shall be of materials specified and of suitable size as required to accurately represent each color and texture used on project. Prepare each sample using same tools and techniques for actual project application. Maintain and make available, at job site, approved samples.
- C. Manufacturer's Warranty: Submit sample copies of Manufacturer's Source Responsibility for stucco assembly materials.

## 1.6 QUALITY ASSURANCE

- A. Qualifications:
1. Manufacturer: Shall have marketed stucco assemblies in United States for at least ten years and shall have completed projects of same general scope and complexity.

2. Applicator: Shall be experienced and competent in installation of stucco materials, and shall provide evidence of a minimum of five years experience in work similar to that required by this section.
3. Products manufactured under ISO 9001:2000 Quality System.

### **1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Deliver stucco assembly materials in original packaging with manufacturer's identification.
- B. Storage: Store stucco assembly materials in a dry location, out of direct sunlight, off the ground, and protected from moisture.

### **1.8 SITE / ENVIRONMENTAL CONDITIONS**

- A. Substrate Temperature: Do not apply stucco assembly materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- B. Inclement Weather: Do not apply stucco assembly materials during inclement weather, unless appropriate protection is employed.
- C. Sunlight Exposure: Avoid, when possible, installation of the stucco assembly materials in direct sunlight. Application of finishes in direct sunlight in hot weather may adversely affect aesthetics.
- D. Do not apply stucco Basecoats or finishes if ambient temperature falls below 40°F (4°C) within 24 hours of application. Protect stucco materials from uneven and excessive evaporation during dry weather and strong blasts of dry air.
- E. Prior to installation, the substrate shall be inspected for surface contamination, or other conditions that may adversely affect the performance of the stucco assembly materials, and shall be free of residual moisture.

### **1.9 COORDINATION AND SCHEDULING**

- A. Coordination: Coordinate stucco assembly installation with other construction operations.

### **1.10 WARRANTY**

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

EDITOR NOTE: SEE MANUFACTURER'S WARRANTY SCHEDULE FOR AVAILABLE STUCCO ASSEMBLY WARRANTIES.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Manufacturer, Basis of Design: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807 Contact: Architectural Sales (866.516.0061) or Technical Support (800.226.2424).
- B. Components: Obtain components manufactured by Parex USA of Parex Armourwall 100 WaterMaster Stucco Assembly from authorized distributors. No substitutions or additions of other materials are permitted without prior written permission from Parex USA for this project.

### **2.2 MATERIALS**

- A. Stucco Basecoat (3/8 in – 1/2 in per coat):
  1. Parex 210 Armourwall Stucco Base Concentrate: Proprietary mixture of portland cement and proprietary ingredients mixed with clean, cool, potable water, and ASTM C897 or ASTM C144 sand added in the field.  
-OR-
  2. Parex 202 Armourwall Stucco Base Sanded: Proprietary mixture of portland cement, and proprietary ingredients mixed with clean, cool, and potable water in the field.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE OPTIONAL ACRYLIC EMULSION FOR ENHANCED PERFORMANCE.

B. Water-Resistive Barrier:

1. Parex USA WeatherDry Basecoat & Adhesive is applied over stucco materials.
2. Parex USA 355 Standard Mesh: Weight 4.5 oz/yard<sup>2</sup> (153 g/m<sup>2</sup>) reinforcing mesh.

C. Stucco Admix

1. Parex USA Adacryl Admix & Bonder: 100% acrylic emulsion additive for portland cement based products to enhance curing, adhesion, freeze-thaw resistance and workability and as an acrylic polymer bonding agent.

EDITOR NOTE: STUCCO LEVEL COAT MUST NOT BE USED AS AN ADHESIVE OR Basecoat FOR EXPANDED POLYSTYRENE INSULATION BOARD SHAPES OR FEATURES.

D. Expanded Polystyrene Features over Stucco:

1. Adhesive and Basecoat

- a. Parex 121 Basecoat & Adhesive: 100% acrylic polymer base, requiring the addition of portland cement.
- b. Parex 121 Dry Basecoat & Adhesive: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.

2. Insulation Board:

- a. In compliance with manufacturer's requirements for Parex EIFS.
- b. Produced and labeled under a third party quality program as required by applicable building code; and produced by a manufacturer approved by Parex USA.
- c. Shall conform to ASTM C578, ASTM E2430 Type I, and the Parex USA specification for Molded Expanded Polystyrene Insulation board.

3. Reinforcing Mesh:

- a. Parex USA 355 Standard Mesh: Weight 4.5 oz/yd<sup>2</sup> (153 g/m<sup>2</sup>) reinforcing mesh.
- b. Parex USA 356 Short Detail Mesh: Reinforcing mesh used for backwrapping and details.

EDITOR NOTE: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE PRIMER FOR MAXIMUM FINISH MATERIAL COVERAGE, AESTHETICS, AND EXTENDED WARRANTY.

E. Primer:

1. Parex USA Primer: 100% acrylic based primer to prepare surfaces for acrylic or elastomeric finishes.
2. Parex USA PrimeShield: 100% acrylic based primer to prepare surfaces for acrylic or elastomeric finishes.
3. Parex USA QuikCure: 100% acrylic based primer to prepare surfaces for acrylic or elastomeric finishes.
4. Variance VariPrime Sanded: 100% acrylic based primer to prepare surface for exposed aggregate specialty finishes.

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

F. 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.

2. Parex DPR Optimum Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Project Designer.
3. Parex DPR Standard Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Project Designer.
4. Parex E-Lastic® Finish: Factory blended, 100% acrylic polymer based elastomeric textured finish, integrally colored. 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: MODIFY BELOW TO SUIT REQUIREMENTS. CHOOSE ONE FINISH TYPE, TEXTURE, & COLOR WITH ACCESSORY MATERIALS TO CREATE DESIRED EFFECT.

5. Variance Finish [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.
  - b. Variance VariSeal is a 100% acrylic, water based sealer. Improves scratch and scuff resistance and adds depth of color.

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

6. Parex USA Clear Sealer: 100% acrylic, transparent, permeable, dirt resistant sealer for use as a protective coating over acrylic finishes. Use Parex USA 600 Clear or 610 Matte Clear as detailed on drawings.

G. Water: Clean, cool, potable water.

## 2.3 RELATED MATERIALS AND ACCESSORIES

- A. General: Stucco assembly materials and related materials shall conform to the requirements of ICC-ES Evaluation Report No. 2564 and shall conform to this specification.
- B. Substrate Materials:
  1. Concrete Masonry Construction: Non-painted (uncoated). Shall be in conformance with the building code.
  2. Other Approved by stucco assembly manufacturer in writing prior to the project.

EDITOR NOTE: THE SELECTION AND USE OF AN APPROPRIATE TYPE OF SEALANT SHALL BE DETERMINED BY APPLICABLE SURROUNDING CLIMATIC AND ENVIRONMENTAL CONDITIONS SPECIFIC TO THE PROJECT LOCATION.

- C. Seals, Sealants and Bond Breakers: Sealants shall conform to ASTM C 920, Grade NS, Class 25, Use NT. Backer rod shall be closed-cell polyethylene foam.

## 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 of stucco assembly materials.

WALL PERFORMANCE IS DEPENDENT UPON, AMONG OTHER FACTORS, PROPER FLASHING AND JOINT SEALING, AND ATTENTION TO PROPER FLASHING AND JOINT SEALANT DETAILS INDICATED ON DRAWINGS.

- C. Substrate Examination: Examine prior to stucco base installation as follows:
  - 1. Substrate shall be of a type approved by stucco assembly manufacturer and the building code having jurisdiction.
  - 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.
- D. Advise Contractor of discrepancies preventing proper installation of stucco assembly. Do not proceed with the stucco assembly work until unsatisfactory conditions are corrected.

### **3.2 PREPARATION**

- A. Concrete (Cast-in-Place): Provide a surface that is slightly scarified, water absorbent, straight and true to line and plane. Remove form ties and trim projecting concrete so it is even with the plane of the wall. Remove form release agents.
- B. Concrete Masonry Units: Remove projecting joint mortar so it is even with the plane of the wall. Remove surface contaminants such as efflorescence, existing paint or any other bond inhibiting material by sandblasting, waterblasting, wire brushing, chipping or other appropriate means. Pre-moisten the surface with water just prior to placement of stucco, or apply manufacturer's acrylic admix and bonding agent.
- C. Ensure that metal flashing has been installed per Specification Section 07 60 00 - Flashing and Sheet Metal.

### **3.3 MIXING**

- A. Mix proprietary products in accordance with manufacturer's instructions, including the applicable stucco assembly product data sheets and application guidelines.
- B. Admix: Parex USA Adacryl
  - 1. Mix up to 1 gal (3.8 L) per 1 bag of Parex 210 Armourwall Stucco Base Concentrate. Mix up to 1 qt (1 L) per bag of Parex 202 Armourwall Stucco Base Sanded. Add after dry components and the majority of the water has been mixed. Mix no longer than required to provide a uniform mixture. DO NOT OVER-MIX. Overmixing entrains excessive amounts of air which weaken the material. Do not re-temper mixes over 20 minutes old.

### **3.4 APPLICATION**

- A. General: Stucco assembly and its related materials shall conform to the requirements of ICC-ES Evaluation Report No. 2564 and shall conform to this specification. Follow Parex USA's current Stucco Application Guide.
- B. Stucco Base:
  - 1. Either Parex Armourwall Stucco mixtures shall be applied in one or two coats to a minimum thickness of 3/8 in (9.5 mm) per coat by hand troweling or machine spraying the mixture to the wire lath in accordance with manufacturer's product data sheets and application guidelines. The maximum thickness applied in one pass is 1/2 in (17 mm).
  - 2. Rod surface to true plane and float to densify.
  - 3. Trowel to smooth and uniform surface to receive acrylic or elastomeric polymer finish coat.
- C. Water Resistive Barrier:
  - 1. After Moist Curing, allow stucco Basecoat to air dry a minimum of 24 hours before applying the Parex USA WeatherDry in accordance with Product Data Sheet.
- D. Optional Reinforcing Coat for Gauging thickness:
  - 1. Fully embed reinforcing mesh, 355 Standard Mesh into wet Parex USA WeatherDry, including diagonal strips at corners of openings and trowel smooth, seams are overlapped 2-1/2 in (63 mm);

- E. Expanded Polystyrene Featured over Stucco Basecoat:
  - 1. Install back-wrap mesh at EPS terminations.
  - 2. Apply adhesive to backs of insulation boards with a notched trowel. Allow to dry a minimum of 12 hours.
  - 3. Apply Basecoat material to the entire foam shape and pull the backwrap mesh around the foam shapes and fully embed it into the Basecoat.
  - 4. Immediately embed the reinforcing mesh in the wet Basecoat.
- F. Primer and Finish:
  - 1. Remove surface contaminants such as dust or dirt without damaging the substrate.
  - 2. Ambient and surface temperature must be 40°F (4°C) or higher during application and drying time. Supplemental heat and protection from precipitation must be provided as needed.
  - 3. Apply primer as directed in manufacturer's product data sheet and application guide.
  - 4. Apply exterior wall finish in number of coats thickness recommended by manufacturer to achieve texture indicated, using sufficient trowel pressure or spray velocity to bond finish to Basecoat.
  - 5. Protect finish coats from inclement weather until completely dry.
- G. Curing:
  - 1. Keep stucco Basecoat moist for at least 48 hours (longer in dry weather) by lightly fogging walls. Start light fogging after initial set of 1–2 hours. Follow cure times set on Armourwall datasheet, depending on primer and finish.
  - 2. Air dry acrylic based and elastomeric finish coats only, do not wet cure.

### **3.5 CLEAN-UP**

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

### **3.6 PROTECTION**

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed stucco from dust, dirt, precipitation, and freezing during installation.
- C. Provide protection of installed finish from dust, dirt, precipitation, freezing, and continuous high humidity until fully dry.
- D. 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 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).*



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