



## ACF for ICF Specification

### CSI SECTION 09 97 22

#### SECTION 09 97 22 – Exterior Wall Coatings for ICF *Architectural Coatings and Finishes for Insulating Concrete Forms*

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

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

- A. Supply and installation of base coat, reinforcing mesh and finish installed over Insulated Concrete Form systems.

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

- A. Section 03 00 00 - Concrete
- B. Section 07 90 00 - Joint Protection
- C. Section 08 50 00 - Windows

###### **1.3 REFERENCES**

- A. ASTM C578 Specification for Preformed, Cellular Polystyrene Thermal Insulation
- B. ASTM C897 Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plaster
- C. ASTM B117 Test Method for Salt Spray (Fog) Testing.
- D. ASTM D2247 Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity.
- E. ASTM E84 Test Method for Surface Burning Characteristics of Building Materials.
- F. ASTM E331 Test Method for Water Penetration by Uniform Static Air Pressure Difference.
- G. ASTM E695 Method for Measuring Relative Resistance to Impact Loading.
- H. ASTM E2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
- I. ASTM E2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
- J. ASTM G155 Accelerated Weathering for Exposure of Nonmetallic Materials.

###### **1.4 ASSEMBLY DESCRIPTION**

- A. An exterior coating system consisting of Base Coat with embedded Reinforcing Fabric Mesh, Primer (Optional), and Finish Coat.

###### **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 Warranty indicating Single 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.

### B. ICF Wall Systems:

1. Wall Dimensional Tolerances: Flat with ¼ in (6 mm) within any 4 ft (1218 mm) radius or as defined by ICF manufacturer
2. General:
  - a. 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).
  - b. Flashing: Flashing shall be continuous and watertight. Flashing shall be designed and installed to prevent water infiltration. Refer to Division 7 Flashing section for specified flashing materials.
  - c. Expansion joints: Continuous expansion joints shall be installed per the ICF Manufacturers instructions.
  - d. Building code conformance: The construction shall be acceptable for use under the building code in force in the jurisdiction of the project.
  - e. Provision for non-combustible construction: Coating system shall be approved for use over the foam plastic in multi-story non-combustible construction. Consult Parex USA Technical Department for test.
  - f. Provision for termite inspection: Where required by code or pest control, do not install Parex USA brand coatings on foam plastic that is less than 6 in. (152 mm) above grade. Consult ICF manufacturer for termite control ICF design
  - g. Building code conformance: The construction shall be acceptable for use under the building code in force in the jurisdiction of the project.
3. Performance Requirements: Shall meet the requirements of the Product Performance Sheet.

EDITOR NOTE: COORDINATE BELOW IMPACT RESISTANCE CLASSIFICATION REQUIREMENTS ACCORDING TO ASTM E 2486 - STANDARD TEST METHOD FOR IMPACT RESISTANCE OF CLASS PB AND PI EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

4. Impact Resistance Classification: For EPS trim installed in addition to Teifs Architectural Coatings and Finishes for Masonry shall be classified in accordance with EIMA classification and impact ranges as follows.
  - 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

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## 1.8 PROJECT / SITE CONDITIONS

- A. Substrate Temperature: Do not apply assembly materials to substrates whose temperature are below 40°F (4°C) or contain frost or ice.
- B. Inclement Weather: Do not apply assembly materials during inclement weather, unless appropriate protection is employed.
- C. Sunlight Exposure: Avoid, when possible, installation of the assembly materials in direct sunlight. Application of finishes in direct sunlight in hot weather may adversely affect aesthetics.
- D. Do not apply stucco base coats 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 Architectural Coatings and Finishes 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: Architectural Sales (866.516.0061) or Technical Support (800.226.2424).
- B. Components: Obtain components manufactured by Parex USA of LaHabra Fastwall 300 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. Basecoats:
  - [1. Parex USA WeatherDry: Waterproofing Base Coat. Acrylic co-polymer base. Requires the addition of portland cement.
  - [2. TeifsBase Basecoat: 100% acrylic polymer base, requiring the addition of portland cement.
  - [3. TeifsBase DB Base Coat: Copolymer based, factory blend of cement and proprietary ingredients requiring addition of water.

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

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

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

- [4. Parex USA 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. Parex USA 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. Parex USA 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. Parex USA 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: \_\_\_\_\_

[C. Primers

- [1. Parex USA Primer: 100% acrylic based coating to prepare surfaces for finishes.
- [2. Variance VariPrime Sanded: 100% acrylic based coating to prepare surface for Cerastone and Spraystone finishes.

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

D. Finish:

- [1. TeifsFlex Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Project Designer
- [2. Teifs DPR Standard Finish: Factory blended, 100% acrylic polymer based finish, integrally colored. Finish type, texture and color as selected by Project Designer
- [3. Teifs 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.
- [4. Parex USA 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.

- [5. 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.

E. Water: Clean, potable water

F. Portland Cement: ASTM C150, Type I or Type I-II.

## **2.3 RELATED MATERIALS AND ACCESSORIES**

- A. Flashing: Refer to Division 7 Flashing Section for flashing materials.
- B. Sealant System:
  - 1. Sealants shall conform to ASTM C 920, Grade NS.
  - 2. Sealant backer rod shall be closed-cell polyethylene foam.
  - 3. Apply sealant to tracks or base coat.
  - 4. Refer to Parex USA current bulletin for listing of sealants which have been tested and have been found to be compatible with EIFS.
  - 5. Color shall be as selected by Architect.
  - 6. 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 of coatings.
- C. ICF Examination: Examine prior to Base Coat installation as follows:
  - 1. Substrate shall be free of dust, dirt, laitance, efflorescence, and other harmful contaminants.
  - 2. Substrate construction in accordance with substrate material manufacturer's specifications and applicable building codes.
  - 3. Maximum deflection of the substrate shall be limited to L/240
- D. Advise Contractor of discrepancies preventing installation of the Teifs Architectural Coatings and Finishes. Do not proceed with the Teifs Architectural Coatings and Finishes 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 proprietary products in accordance with Manufacturer's instructions.

### 3.4 APPLICATION

- A. General: Installation shall conform to this specification and Parex USA written instructions and drawing details.
- B. Base coat
  - 1. Apply base coat and fully embed mesh in base coat; include diagonal mesh patches at corners of openings. Apply multiple layers of base coat and mesh where required for specified impact resistance classification.
- C. Bond supplemental EPS shapes as indicated on the drawings. Bond shapes to EPS or to dry reinforced base coat using any Teifs Base Coat & Adhesive as an adhesive. Allow 24 hours to dry. Refer to Teifs Standard System Specification for materials and installation of Base Coat and Mesh over EPS shapes.
- D. 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.
- E. 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 Teifs Architectural Coatings and Finishes for ICF component debris material from job site.
- B. Clean EIFS surfaces and work area of foreign materials resulting from EIFS operations.

### 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 cured and 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 Architect/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**  
*Architectural Coatings and Finishes*

Fire Performance	Method	ICC or ASTM Criteria	Results
Surface Burning Characteristic	ASTM E84	Individual components shall each have a flame spread <25, and smoke developed < 450	Flame Spread: 0 to 15 Smoke Developed: 0 to 15

EIFS Strength	Method	ICC or AASTM Criteria	Results
Flexural Strength	ASTM C203	No Requirement	60.6 psi (418 kPa)
Falling Ball Impact	ASTM D1037	No Requirement	92 to over 600 in-lbs
Creep Resistance of Adhesive	ASTM D2294	No Requirement	28 days 208 psf shear stress: no creep
Tensile Bond Strength	ASTM E2134	Minimum 15 psi (103kPa)	Pass

Environmental Durability	Method	ICC or ASTM Criteria	Results
Abrasion Resistance	ASTM D968	No cracking or loss of film at 528 quarts (500 L) of sand	Pass: 500 Liters
Accelerated Weathering	ASTM G153/ (ASTM G23) ASTM G154	No deleterious effects* at 2000 hours when viewed under 5x magnification	Pass: 2000 Hours
Freeze/Thaw Resistance	ASTM E 2485	No deleterious effects* at 10 cycles when viewed under 5x magnification	Pass: 60 cycles
Fungus Resistance	MIL STD 810B	No Requirement	Pass: 28 days- no growth
Mildew Resistance	ASTM D3273	No growth supported during 28 day exposure period	Pass
Water Penetration	ASTM E331	No water penetration beyond the plane of the base coat/EPS board interface after 15 minutes at 6.24 psf (299 Pa)	Pass
Moisture Resistance	ASTM D2247	No deleterious effects at 14 day exposure	Pass
Salt Fog Resistance	ASTM B117	No deleterious effects* at 300 hours	Pass: 500 hours
Wind Driven Rain	F.S. TT-C-555B	No Requirement	Pass: 24 hours

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

*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 USA 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.*

# TEIFS®

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**TEIFS**  
www.teifs.com

**Corporate Office**

Parex USA, Inc.  
4125 E. La Palma Ave., Suite 250  
Anaheim, CA 92807  
(866) 516-0061  
Tech Support: (800) 226-2424

**Teifs Sales Office**

220 Burleson St.  
San Antonio, TX 78202  
Phone: (210) 472-2935  
Fax: (210) 472-2946



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