

Wall Panel SYSTEMS

PAC-CLAD.COM



PAC-CLAD

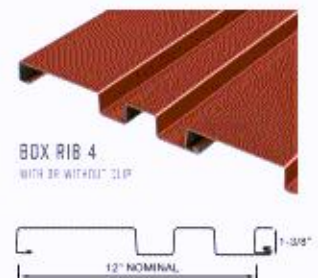
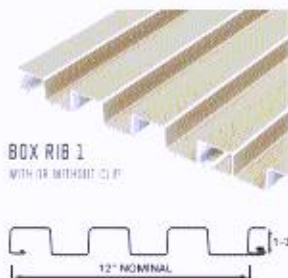
PETERSEN

AN ORNUE COMPANY



DEL VALLE CAREER & TECHNICAL EDUCATION, DEL VALLE, TX
 Contractor: Texas Roofing Co.
 Architect: Pfleger Architects
 GC: American Constructors
 Photo: Alan Blakely
 Profile: Highline S-1
 Colors: Cardinal Red, Custom
 Ter Red, Custom Ron Red

Precision Series HWP, Highline and Box Rib



Note: Line drawings are not to scale.



PAC-CLAD®

P E T E R S E N

A **CARLISLE** COMPANY



FOREST GREEN



HARTFORD CREEK



▲ ★ MILITARY BLUE



BERKSHIRE BLUE



▲ ★ SLATE BLUE



AWARD BLUE



▲ AGED BRONZE



▲ ★ MEDIUM BRONZE



▲ ★ CARDINAL RED



▲ ★ COLONIAL RED



▲ ★ SANDSTONE



▲ ★ ALMOND



▲ ★ STONE WHITE



▲ ★ BONE WHITE

Color Guide

PAC-CLAD.COM

Premium Colors



ANODIC CLEAR



SILVERSMITH



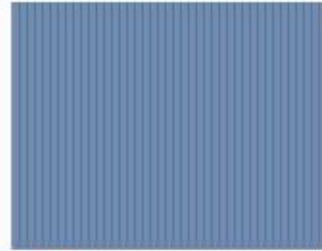
SILVER



CHAMPAGNE



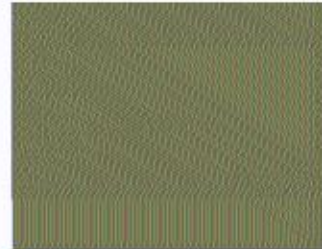
ZINC



WEATHERED ZINC



COPPER PENNY



AGED COPPER



WEATHERED STEEL



WEATHERED COPPER

Kynar 500® or Hylar 5000® pre-finished steel and aluminum
for roofing, curtainwall and storefront applications.



● Metallic Colors

★ ENERGY STAR® Colors \$ Pricing

▲ Cool Colors

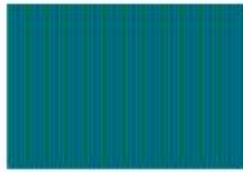
★ Premium Colors

See back for color availability chart.

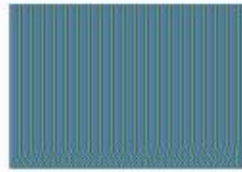
Standard Colors



▲ ★ PATINA GREEN



▲ ★ TEAL



▲ ★ HEMLOCK GREEN



FOREST GREEN



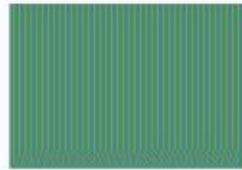
HARTFORD GREEN



▲ ★ EVERGREEN



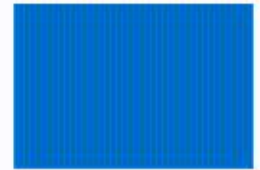
▲ ★ HUNTER GREEN



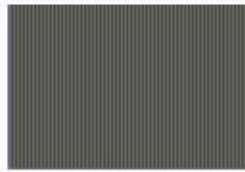
▲ ★ ARCADIA GREEN



▲ ★ MILITARY BLUE



BERKSHIRE BLUE



▲ GRAPHITE



▲ ★ CHARCOAL



INTERSTATE BLUE



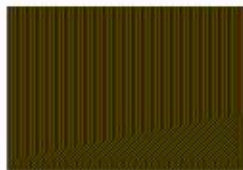
▲ ★ SLATE BLUE



AWARD BLUE



▲ ★ MATTE BLACK STEEL



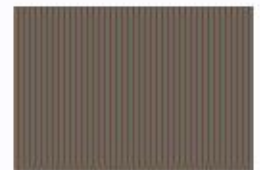
▲ ★ DARK BRONZE



▲ BURNISHED SLATE



▲ AGED BRONZE



▲ ★ MEDIUM BRONZE



▲ ★ MANSARD BROWN



BURGUNDY



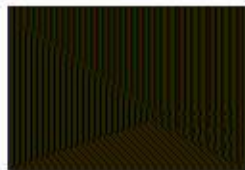
▲ ★ TERRA COTTA



▲ ★ CARDINAL RED



▲ ★ COLONIAL RED



MIDNIGHT BRONZE



▲ ★ MUSKLI GRAY



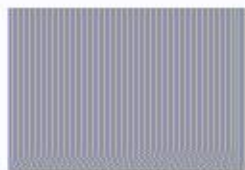
▲ ★ SIERRA TAN



▲ ★ SANDSTONE



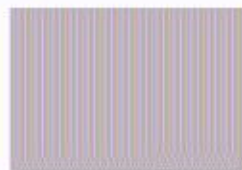
▲ ★ ALMOND



▲ ★ SLATE GRAY



▲ ★ CITYSCAPE



▲ ★ GRANITE



▲ ★ STONEWHITE



▲ ★ BONEWHITE



PAC-CLAD.COM

IL: 800 PAC-CLAD TX: 800 441 8881 MD: 800 341 1400
AZ: 833 750 1935 GA: 800 272 4482 MN: 877 671 2025

PAC-CLAD® Color Availability

PAC-CLAD STANDARD COLORS	REFLECTIVITY	EMISSIONITY	3 YEAR EXPOSURE	SRI	STEEL		ALUMINUM				20-IN. COIL		ENERGY STAR
					24 GA.	22 GA.	.032	.040	.050	.063	24 GA.	.032	
AGED BRONZE	0.29	0.87	0.27	29	✓								
ALMOND	0.56	0.86	0.55	65	✓	✓	✓	✓	✓		✓		✖
ARCADIA GREEN	0.29	0.87	0.29	29	✓		✓						✖
AWARD BLUE***	0.24	0.86	0.23	22	✓		✓		✓				
BERKSHIRE BLUE*	0.30	0.87	0.27	31	✓								
BLACK ALUMINUM**	0.04	0.89	0.04	-2			✓	✓	✓	✓			
BONE WHITE	0.70	0.86	0.69	85	✓	✓	✓	✓	✓	✓	✓	✓	✖
BURGUNDY	0.14	0.85	0.13	9	✓		✓		✓				
BURNISHED SLATE	0.32	0.87	0.31	33	✓								
CARDINAL RED***	0.44	0.86	0.44	49	✓		✓		✓				✖
CHARCOAL	0.30	0.86	0.30	30	✓		✓	✓	✓		✓	✓	✖
CITYSCAPE	0.49	0.86	0.50	56	✓	✓	✓	✓	✓		✓	✓	✖
COLONIAL RED	0.31	0.86	0.31	31	✓		✓	✓	✓				✖
DARK BRONZE	0.29	0.86	0.29	29	✓	✓	✓	✓	✓	✓	✓	✓	✖
EVERGREEN	0.28	0.86	0.26	27	✓		✓						✖
FOREST GREEN	0.10	0.86	0.10	4	✓	✓	✓	✓	✓				
GRANITE*	0.33	0.87	0.33	34	✓	✓	✓	✓	✓				✖
GRAPHITE	0.29	0.87	0.28	29	✓								
HARTFORD GREEN	0.08	0.88	0.08	3	✓		✓	✓	✓				
HEMLOCK GREEN	0.31	0.87	0.30	32	✓		✓		✓				✖
HUNTER GREEN	0.28	0.86	0.27	27	✓		✓						✖
INTERSTATE BLUE	0.16	0.87	0.15	12	✓		✓		✓				
MANSARD BROWN	0.31	0.86	0.31	31	✓	✓	✓	✓	✓				✖
MATTE BLACK STEEL**	0.26	0.86	0.25	25	✓	✓					✓		
MEDIUM BRONZE	0.30	0.87	0.29	31	✓	✓	✓	✓	✓	✓	✓	✓	✖
MIDNIGHT BRONZE	0.06	0.87	0.06	0	✓			✓					
MILITARY BLUE	0.31	0.86	0.30	31	✓		✓						✖
MUSKET GRAY	0.32	0.86	0.31	33	✓	✓	✓		✓				✖
PATINA GREEN	0.33	0.86	0.32	34	✓		✓						✖
SANDSTONE	0.48	0.86	0.48	54	✓	✓	✓	✓	✓	✓	✓	✓	✖
SIERRA TAN	0.32	0.82	0.31	31	✓	✓	✓	✓	✓		✓		✖
SLATE BLUE	0.28	0.86	0.27	27	✓		✓						✖
SLATE GRAY	0.38	0.86	0.37	41	✓	✓	✓	✓	✓		✓	✓	✖
STONE WHITE	0.69	0.86	0.67	84	✓	✓	✓	✓	✓	✓	✓	✓	✖
TEAL	0.32	0.86	0.32	33	✓		✓			✓			✖
TERRA COTTA	0.34	0.87	0.33	36	✓		✓		✓		✓	✓	✖
PAC-CLAD PREMIUM COLORS													
AGED COPPER	0.55	0.80	0.53	62	✓		✓						✖
ANODIC CLEAR	0.32	0.83	0.31	31				✓					
CHAMPAGNE	0.50	0.85	0.49	57	✓		✓	✓	✓				✖
COPPER PENNY	0.52	0.81	0.52	58	✓		✓	✓	✓		✓		✖
SILVER	0.47	0.87	0.46	53	✓	✓	✓	✓	✓		✓	✓	✖
SILVERSMITH	0.32	0.88	0.32	34	✓			✓					
WEATHERED COPPER	0.45	0.88	N/A	51	✓								
WEATHERED STEEL	0.32	0.89	N/A	34	✓								
WEATHERED ZINC	0.48	0.82	0.46	53	✓	✓	✓		✓				✖
ZINC	0.42	0.82	0.38	45	✓		✓	✓	✓				✖
CLEAR-COAT ACRYLIC FINISH (NON-KYNAR)													
GALVALUME PLUS	0.68	0.14	0.55	57	✓	✓					✓		✖

PAC-CLAD Premium finishes are available from stock at a moderate extra cost. PAC-CLAD Copper Penny is a Non-Weathering finish. Solar Reflectance Index calculated according to ASTM E-1989.

*Low Gloss/Low Sheen, 75% PVDF finish ** Appearance differs for Black Aluminum and Matte Black Steel *** 19-year finish warranty

ENERGY STAR PERFORMANCE CRITERIA

Emissivity uses ASTM G1571 Reflectivity uses ASTM G1549.

TECHNICAL DATA FOR KYNAR 500/KYNAR 5000 COATINGS

- South Florida Exposure: Color (ASTM D 2244) - No more than 5ΔE Hunter units at 20 years; Chalk (ASTM D 4214) - Rating no less than 8 at 20 years; Film Integrity - 20 years.
- Accelerated Weathering (ASTM D 4587, ASTM G 1549, 5000 Hours: Chalk, per ASTM D 4214, rating of 8 or better; Color, per ASTM D 2244, < 5ΔE (Hunter Units) color change.

- Humidity Resistance (ASTM D 2247): Galvalume or HDG, 100% RH, 2000 hours - No field blisters; Aluminum, 100% RH, 2000 hours - No field blisters
- Salt Spray Resistance (ASTM B 117): Aluminum, 2000 hours, Galvalume or HDG, 1000 hours - Creep from scribe no more than 1/16", no field blisters
- Chemical/Acid Pollution Resistance (ASTM D 1308): Pass
- T-Bend (ASTM D 4145): 1T - 3T with no loss of adhesion
- Pencil Hardness (ASTM D 3363): HB - 2H
- Specular Gloss (ASTM D 523) @ 60 degrees: Typical - 20 - 35

- Abrasion Resistance (ASTM D 688): 67 +/- 10 liters
- Cross Hatch Adhesion (ASTM D 3359): No loss of adhesion
- Reverse Impact (ASTM D 2794): Galvalume or HDG, 2x metal thickness inch-pounds; no loss of adhesion; Aluminum, 1.5x metal thickness inch-pounds; no loss of adhesion
- Flame Test (ASTM E 84): Class A Coating

PAC-CLAD® 30 Year Limited Warranty

Owner:
Address:
Contractor: _____ of _____
Customer:
Invoice Num. & Date:
Date Warranty Begins: _____ Date Warranty Ends: _____
Job Name: _____

PART I

PETERSEN ALUMINUM CORPORATION (hereinafter referred to as "PAC") hereby issues the following limited warranty to the above referenced owner (hereinafter referred to as OWNER) exclusively. Subject to the terms and conditions listed below, PAC warrants that upon delivery its standard color Fluoropon® coating (hereinafter referred to as the "COATING") applied to aluminum, G-90 hot-dipped galvanized steel or AZ50 zinc-aluminum alloy steel sheet and coil that has been fabricated, roll-formed or otherwise manufactured, within one year from the date of shipment thereof by PAC, and sold for use as painted roofing panels, fascia, mansard, soffit or other building components, will for a period of thirty (30) years [ten (10) years in the case of Award Blue and Cardinal Red.] from the project completion date listed above (hereinafter referred to as the "WARRANTY PERIOD"), meet the following quality standards:

- A. WILL NOT chalk in excess of ASTM D-4214 number eight (8) rating.
- B. WILL NOT change color more than five (5.0) Hunter ΔE units [(7.0) Hunter ΔE units in the case of Award Blue and Cardinal Red.] as determined by ASTM method D-2244-02 after removal of external deposits and chalk. It is understood by all the parties herein named, that fading or color change may not be uniform in appearance between surfaces not equally exposed to the sun and other weathering elements. This paragraph is not applicable in its entirety for all PAC-CLAD® metallic colors or custom Fluoropon® Classic or Fluoropon® Classic II colors.
- C. WILL NOT crack, check, peel or otherwise lose adhesion. The terms, crack, check and peel, used herein shall not include minute fracturing of the COATING incurred during proper fabrication. In addition loss of adhesion of the COATING as a result of substrate corrosion, however caused, and either from the front side or the backside of the substrate is specifically excluded from this warranty.

The following additional terms, conditions and other limitations are also included as part of this warranty:

PART II

- 1.) This warranty and all terms, conditions and exclusions contained herein apply to PAC's COATING only. In regards to either the aluminum, G-90 hot-dipped galvanized steel or AZ50 zinc-aluminum alloy steel substrates to which the COATING has been applied or any solar panels/solar film applied to the COATING, PAC makes no representations or other warranties whatsoever. ALL BASE METAL SUBSTRATES AND SOLAR PANEL/FILMS ARE SOLD AS IS. In addition, PAC makes no representations or otherwise warrants the weather tightness of the roofing panels, fascia, mansard, soffit or other building components referred to in Part I. Further, PAC is expressly to be held harmless for failures, leaks or consequential damages caused by the roofing panels, fascia, mansard, soffit or other building components.
- 2.) This warranty applies to the COATING installed on structures within the continental United States that have been exposed to normal weather and atmospheric conditions only. Failure of the COATING caused by exposure to harmful fumes, cement dust, falling sand, animal waste or its decomposition by-products, dust particles and other foreign substances in the air, chemical fumes, chemical sprays and installations with a proximity of less than a one-half mile radius from a seacoast, saltwater or other brackish water environment are all excluded from this warranty. In addition, this warranty does not apply to failure of the COATING caused by or as a result of fire, other accident or casualty, vandalism, radiation, falling objects, explosions, riots or acts of God. Also, the warranty is void for areas where materials / items such as snow guards, solar panels or solar films are attached to the COATING. In addition, the warranty is void if the COATING is perforated. Finally, this warranty does not apply to failure of the COATING caused by the following: damage incurred during shipment, improper storage, improper fabrication or improper installation, improper seaming techniques, surface scratches or other abrasions however caused, damage caused by contact with areas subject to water run-off from lead, copper or other incompatible flashings or areas in metallic contact with lead, copper or other dissimilar metals, damage caused by failure to provide free drainage of water, including internal condensation from overlaps, and all other surfaces of the roofing panels, fascia, mansard, soffit or other building components, damage caused by failure to remove debris or other accumulations of foreign substances from the surface of the roofing panels, fascia, mansard, soffit or other building components, damage caused by contact with green or wet lumber, damage caused by contact with or close proximity to damp underlayment, insulation, soil, vegetation or other corrosive materials and/or damage caused by use of unsuitable fasteners or flashings. Selection of suitable long-lasting fasteners as well as appropriate flashings rests solely with the OWNER.
- 3.) This warranty does not apply to failure of the COATING in the following additional circumstances: forming where the bend is tighter than 2T, forming which involves severe reverse bending, or which subjects the COATING to alternate compression and tension, roofing applications where the slope of the roof, or sections of the roof, are flatter than ½": 12", applications where the COATING is sheltered from periodic washing by natural rainfall such as underside eaves and soffits, or discoloration or damage to the COATING caused by failure to remove factory applied protective stripable film (where applicable).

PART III

- 1.) All claims filed under the provisions of this warranty must be presented by the OWNER to PAC, in writing, during the WARRANTY PERIOD and not more than thirty (30) days after discovery of any apparent defects, delivered by Registered or Certified mail to the following address:

Petersen Aluminum Corp.
1005 Tonne Rd.
Elk Grove Village, IL 60007
ATTN: Warranty Claims

In submitting a claim under the provisions of this warranty, it is the responsibility of the OWNER to provide adequate documentation of the COATING involved in the claim, including date of installation, name of installer and contractor (if different), PAC order number, PAC invoice number and proof of payment to PAC for all such materials included as part of the claim. In no event will any claims be honored under the provisions of this warranty if invoices from PAC have not been previously satisfied in full within PAC's standard credit terms. OWNER further agrees to allow PAC to inspect all such documentation.

- 2.) After receipt of claim from owner, PAC will be given a reasonable opportunity to examine or cause to be examined, the COATING claimed to be non-conforming. OWNER shall further use reasonable care to protect any disputed material until PAC has had time to conduct its own inspection and make disposition.
- 3.) If after inspection it is determined by PAC that the claim is valid under the terms of this warranty, then PAC agrees, at its option, to refinish, repair or replace the defective COATING on the following basis:
 - a. If the COATING is to be refinished then PAC shall bear the cost of materials and labor reasonably necessary to repaint those areas showing failure. Further, PAC shall use normal painting practices to apply a Kynar 500® or Hylar 5000® coating system or other suitable alternative. The choice of appropriate coating system to use rests exclusively with PAC.
 - b. In the case of repair or replacement of the defective COATING, PAC shall at its option, and F.O.B. PAC plant, furnish either replacement components or sufficient sheet to fabricate replacement components, for those areas of the building where the COATING is determined to be defective. However, in no event shall PAC be liable for the cost of labor expended by others on any nonconforming material or for any special, indirect or consequential damages to anyone by reason of the fact that such material may have been nonconforming.

This warranty shall apply to the part or parts of the COATING refinished, repaired or replaced by PAC, but only for the unexpired portion of the WARRANTY PERIOD applicable to the original COATING only. It will be at the discretion of PAC what appropriate measure shall be taken; that is whether the COATING should be refinished, repaired or replaced. However, in lieu of any of the foregoing alternatives PAC also reserves the right to refund to the OWNER a cash amount equal to PAC's original invoiced price of the nonconforming material as satisfaction in full for all claims under this warranty. In addition, should repair or replacement of the nonconforming materials necessitate the removal of solar panels/solar films PAC assumes no responsibility for either the original, replacement or reinstallation costs of these solar panels/solar films. At no time does this warranty confer upon the OWNER the right to refinish, repair or replace those areas of COATING under dispute without written notice and agreement by a duly authorized officer of PAC. Any unauthorized refinish, repair or replacement of the COATING shall result in this warranty becoming null and void.

PART IV

- 1.) Except as provided herein, PAC makes no warranty or guarantee, express or implied, including without limitation, WARRANTIES OF FITNESS AND MERCHANTABILITY. Further, OWNER acknowledges that PAC shall have no other liability to any other person, firm, or corporation with respect thereto, including, without limitations, any liability for indirect, consequential or resultant damages, whether based upon breach of warranty or negligence.
- 2.) PAC extends this warranty solely to the OWNER listed herein. This warranty is non-transferable and non-assignable.
- 3.) This warranty shall be subject to and shall be enforced and construed according to the laws of the State of Illinois. Any legal action to enforce or construe any portion of this warranty shall be brought in a Court of competent jurisdiction in Cook County, Illinois.
- 4.) If any provision of this warranty shall be held by any Court of competent jurisdiction to be invalid or unenforceable in whole or in part, the remaining provisions of this warranty shall be effective to the same extent as if such invalid or unenforceable provision had never been contained herein.
- 5.) PAC reserves the right to terminate this warranty at any time upon thirty (30) day written notice. However termination shall not affect the rights accruing to the OWNER prior to such termination.
- 6.) Both the supplier of the PAC COATING and the applicator thereof have made certain warranties to PAC which are similar to the warranties made by PAC to the OWNER under this limited warranty. In the event that the supplier and/or applicator (or its successors or assigns) of the coating can no longer perform, or is not willing to perform, its obligations to PAC, then the limited warranty contained herein shall be of no further force or effect.
- 7.) The terms hereof shall constitute the entire agreement and understanding of the parties hereto respecting the subject matter hereof and no provision or statement contained at any time in any other writing, including without limitation, OWNERS, customers and/or contractors purchase orders, architects specifications or PAC's acceptance forms shall be effective to change the provisions hereof, unless contained in a subsequent agreement, in writing, signed by both the OWNER and PAC expressly stating that it is intended thereby to modify or supplement this instrument.

PETERSEN ALUMINUM CORPORATION

By: _____

*** Not valid without Authorized Signature***

Date: _____

Fluoropon® is a registered trademark of The Valspar Corporation
Hylar 5000® is a registered trademark of Ausimont USA, Inc.

Kynar 500® is a registered trademark of Atochem N. A.
PAC-CL 10® is a registered trademark of Petersen Aluminum Corporation

SPECIFICATION GUIDELINE

Environmental StoneWorks specification guideline should be used to assist design professionals in the preparation of projects. Edit and delete items that may not be applicable. Verify all referenced section numbers / titles.

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Manufactured Stone Veneer and Trim
 - 2. Manufactured Brick Veneer and Trim
- B. Related Sections:
 - 1. Division 07 Sections for Water-resistive Barriers, Sealants and Flashings.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM); Philadelphia, PA. (215) 299-5420,
 - 1. ASTM C 39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 2. ASTM C 67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 - 3. ASTM C 140 - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
 - 4. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
 - 5. ASTM C 150 - Standard Specification for Portland cement.
 - 6. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
 - 7. ASTM C 270 - Standard Specification for Mortar for Unit Masonry.
 - 8. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 9. ASTM C 778 - Standard Specification for Standard Sand.
 - 10. ASTM C 847 - Standard Specification for Metal Lath.
 - 11. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete.
 - 12. ASTM C 1059-Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
 - 13. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - 14. ASTM C 1032 - Standard Specification for Woven Wire Plaster Base.
 - 15. ASTM C 932 - Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering.
 - 16. ASTM C 482 - Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement.
 - 17. ASTM C 348 - Standard test Method for Flexural Strength of Hydraulic-Cement Mortars.
 - 18. ASTM F 1667 - Standard Specification for Driven Fasteners, Nails, Spikes & Staples.



SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

1.3 REFERENCES (con'd)

- B. American National Standards Institute (ANSI); New York, (212) 642-4900.
 - I. ANSI A118.4 Specification for Latex-Portland Cement Mortar.
- C. Building Code Compliance:
 - I. The International Association of Plumbing and Mechanical Officials (IAPMO)
- D. Masonry Veneer Manufacturers Association (MVMA)

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Indicate layout, show profiles and product components, including anchorage, accessories, finish colors, patterns, and textures.
- C. Qualification Data: Environmental StoneWorks manufacturing and installing qualifications, safety and quality documents.
- D. Test Reports: Certified test reports showing compliance with specified performance requirements and physical properties.
- E. Samples: Board containing sample including mortar.
- F. Manufacturer's Instructions: Environmental StoneWorks Installation Procedures.
- G. Certificates: IAPMO - ER-386.
- H. Minutes of pre-installation conference.
- I. Maintenance Data: Environmental StoneWorks Installation Procedures.
- J. Warranty: Environmental StoneWorks product and installation warranties.

1.5 QUALITY ASSURANCE

- A. IAPMO Certification: Environmental StoneWorks current IAPMO report - ER-386, which include AC-51 testing data.
- B. Single Source Responsibility: Obtain primary manufactured stone/brick veneer and trim from a single manufacturer with not less than thirty-five years of successful experience in manufacturing and five years of successful experience in installing principal materials described in this section. Manufacturer and Installer shall have completed at least ten projects of similar size and complexity. Provide secondary materials only of type and from source recommended by manufacturer of primary materials.



SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

1.5 QUALITY ASSURANCE (con'd)

- C. Manufacturer Qualifications:
Environmental StoneWorks...
 - 1. has over 30 years experience in producing simulated masonry.
 - 2. provides field service representative.
 - 3. has IAMPO certification.
 - 4. has a 50 year product warranty.
 - 5. is in good standing with the MVMA.
- D. Installer Qualifications:
Environmental StoneWorks...
 - 1. provides installers with a minimum of 15 years experience installing simulated masonry.
 - 2. has documented installation procedures and field quality control program.
 - 3. provides OSHA 10/30 Hour trained project management.
 - 4. provides extensive jobsite safety programs including scaffold safety, fall protection and personal protective equipment.
- E. Product Compatibility: Manufacturers of products and systems certify in writing that products are compatible.
- F. Pre-Installation Conference:
 - 1. General contractor shall arrange a meeting not less than thirty days prior to starting work.
 - 2. Attendance:
 - a. General Contractor
 - b. Architect/Owner's Representative
 - c. Environmental StoneWorks Representative
- G. Warranty: Single Source Warranty.
 - 1. Environmental StoneWorks Fifty (50) year product warranty.
 - 2. Environmental StoneWorks One (1) year installation warranty.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in Environmental StoneWorks original, unopened, undamaged containers with identification labels intact.
- B. Storage and Protection: Store materials to comply with Environmental StoneWorks written instructions to prevent deterioration from moisture, temperature or other detrimental effects.



SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

1.7 SITE CONDITIONS

- A. Environmental Site Conditions: Comply with Environmental StoneWorks Installation Procedures for environmental conditions.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Environmental StoneWorks stone veneer is engineered from Portland cement, light weight aggregates, mineral oxide and chemical additives. The product is engineered to achieve a specified strength, color, and texture and resistance to effects of weathering. Environmental StoneWorks manufactured stone veneers is engineered in various shapes and patterns to simulate natural stone and are installed in a non- load bearing veneer and trim capacity e.g., drip ledge and quoins, caps, etc.

- A. Manufactured Stone & Brick Veneer Properties:
 - 1. Stone Thickness: 1 1/8" to 2 1/2"
 - a. Thin Brick Thickness: 5/8" to 1" (2 1/2" wide x 8" length)
 - 2. Weight: maximum of 15 lbs./sq.ft.
 - 3. Density to be determined under ASTM C 567
 - 4. Compressive Strength: Minimum of 1,800 PSI when tested in accordance with ASTM C 192
 - 5. Water absorption: less than 18% when tested in accordance with ASTM C 140 or UBC standard 15-5
 - 6. Freeze-thaw: less than 3% mass loss when tested in accordance with ASTM C 67
 - 7. Shear Bond Strength: minimum of 50 PSI when conducted in accordance with ASTM C 482
 - 8. Thermal Resistance: $R \geq .865$ when tested at a thickness of 1.0" (25.4 mm) in accordance with ASTM C 518
 - 9. Smoke and fuel contribution: UL listed 0/0
 - 10. Flexural strength: tested in accordance with ASTM C 348, Section 4.4
 - 11. Tensile strength: tested in accordance with ASTM C 190, Section 4.5
 - 12. Weather resistance: Mix design proven by test results to be resistant to degradation by weather.
- B. Architectural Trim:
 - 1. Products: Single source from Environmental StoneWorks.
 - 2. Wall Capstones:
 - a. Texture: As selected by Architect from manufacturer's full range.
 - b. Color: As selected by Architect from manufacturer's full range.
 - c. Size: As selected by Architect from manufacturer's full range.
 - 3. Pier Capstones:
 - a. Texture: Chiseled
 - b. Color: As selected by Architect from manufacturer's full range.
 - c. Size: As selected by Architect from manufacturer's full range.



SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

2.1 MANUFACTURER (con'd)

B. Architectural Trim (con'd):

4. Watertable/sill:

- a. Color: As selected by Architect from manufacturer's full range.
- b. Size: As selected from manufactured full range.
- c. Provide sloped top surface and drip edge.

5. Light Fixture Stones:

- a. Color: As selected by Architect from manufacturer's full range.
- b. Size: As necessary for light fixture indicated.
- c. UL approved metal extension box may be provided.

6. Receptacle Stones:

- a. Color: As selected by Architect from manufacturer's full range.
- b. Size: As necessary for light electrical outlet.
- c. UL approved metal extension box may be provided.

- C. Water Resistant Barrier: ASTM D 226, 2 layers of No. 15 non-perforated asphalt-saturated organic felt paper or 1 layer and a house-wrap product supported by a current evaluation report showing equivalency to Grade D building paper. Install weather resistive barrier (per manufacturer's instructions) over all exterior surfaces designated to receive stone veneer and require waterproofing. WRB shall be applied horizontally with the upper layer lapped over the lower layer at not less than 2". Lap weather-resistive barrier not less than 6" at the vertical joints. In the case of applications with two layers, start with two horizontal layers at the bottom of exterior wall or structure.
- D. Reinforcing (Lath): Corrosion resistant minimum 2.5 lbs. per square yard expanded metal lath that complies with ASTM C 847, or, corrosion resistant minimum 18 gauge woven wire mesh that complies with ASTM C 1032. For open studs and non-solid sheathing (e.g. rigid insulation board) use corrosion resistant minimum 3.4 lbs. per square yard, $\frac{3}{8}$ " paper backed lath (paper backing shall meet the requirements of ASTM D 226 to be considered a substitute for Weather Resistive Barrier). Any alternative lath material shall carry an evaluation report that rates the lath as an acceptable substitute to the above listed materials. Lap lath not less than 2" all around vertically and horizontally. Terminate lath a minimum of 2" on the foundation and/or flange of the weep screed or as directed by project specifications and or local building codes. Metal lath can be installed with the small cups pointing upward to better capture mortar scratch coat.
- E. Fasteners: Galvanized steel fasteners (nails, staples or screws), for wood stud applications (open, rigid sheathing, rigid foam insulation) should penetrate the stud a minimum of $\frac{3}{4}$ ". Spacing of these fasteners should be a maximum of 6" vertical and should be 16" horizontal (on the studs). These fasteners should be a minimum of 1 $\frac{1}{2}$ " long, 11 gauge nails having a $\frac{7}{16}$ " head or $\frac{7}{8}$ " long, 16 gauge staples. Corrosion resistant screws should have a $\frac{7}{16}$ " head and should penetrate the metal stud a minimum of $\frac{3}{8}$ ". Refer to governing building code for information on specific fastener penetration depth.

SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

2.1 MANUFACTURER (con'd)

- E. Fasteners (con'd): In the case of rigid sheathing, care should be taken to avoid excessive fasteners applied between wall framing. In the case of exterior gypsum sheathing, fasteners should only be applied into wall framing unless additional fasteners are approved by the design professional.
- F. Weep Screed: Foundation Weep Screed shall be corrosion resistant and a minimum 0.019" (No. 26 galvanized sheet gauge, fabricated plastic or vinyl material) with a minimum vertical attachment of 3½". Weep screed should have holes with a minimum diameter of 3/16" spaced at a maximum of 33" on center. Install Foundation Weep Screed per manufacturer's instructions and integrate with WRB and metal lath. Weep screed shall have a minimum of 3½" attachment flange at or below the foundation plate line on exterior walls in accordance with ASTM C 926. The exterior lath shall cover and terminate on the attachment flange of the weep screed. Weep holes should not be covered during installation.
- G. Clearances: Weep Screed and/or stone should be held a minimum of 4" above finished grade or per local code and building practices. Weep screed and/or stone shall be held at a clearance above hard surfaces a minimum of 2" or as per local code and building practices. Weep screed terminations that meet concrete surfaces that are supported by a footing shall be held at a clearance above the concrete a minimum of ½".
- H. Mortar: To be mixed with potable water clean and free from injurious amounts of oils, acids, alkalis, salts, organic minerals or other deleterious substances.

Parts by Volume					
	Portland or Blended Cement ASTM C150	Masonry Cement Type N ASTM C91	Masonry Cement Type S ASTM C91	Lime ASTM C207	Sand ASTM C144
Mix 1	1	1			2.25-3
Mix 2	1			1	4.5
Mix 3			1		2.25-3
Mix 4		1			2.25-3
Mix 5	Mix 1 part Type S Mortar Mix with volume of water indicated on instructions				

SPECIFICATION GUIDELINE

SECTION 04700 - SIMULATED MASONRY (MANUFACTURED STONE VENEER AND TRIM)

PART 3 - EXECUTION

- A. Environmental StoneWorks Installation Procedures:
 - 1. Comply with Environmental StoneWorks product data, including but not limited to: product technical bulletins, manufacturer's installation procedures and product carton procedures for installation.
- B. Examination:
 - 1. Examine substrates, with Installer present, for conditions affecting performance and proceed with application only after unsatisfactory conditions have been corrected.
- C. Preparation:
 - 1. General: Prepare and clean substrate according to Environmental StoneWorks Installation Procedures.
- D. Application:
 - 1. General: Comply with Environmental StoneWorks Installation Procedures.
 - 2. Corners: Provide Environmental StoneWorks pre-manufactured corner units. Field built corners are not recommended.
- E. Cleaning:
 - 1. Clean stone veneer in accordance with Environmental StoneWorks Installation Procedures.