

SPEC DATA®

Sheet Metal Roofing 07610

Petersen Aluminum Corporation

1 PRODUCT NAME

PAC-CLAD® - Prefinished Sheet Aluminum & Steel

2 MANUFACTURER

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3 PRODUCT DESCRIPTION

PAC-CLAD is a pre-finished specification grade aluminum sheet or a commercial quality extra-smooth galvanized steel sheet, primed and coated with Petersen's full strength fluoropolymer (PVDF) high-performance coating system of 1.0 mil (0.025 mm) total dry film thickness and, on the reverse side, a wash coat of 0.3 – 0.4 mil (0.008 – 0.01 mm) dry film thickness.

Basic Use: PAC-CLAD is for general sheet metal use in building applications. PAC-CLAD is frequently used in the following forms:

- Fascia and soffit panels
- Gravel stops and copings
- Store front components
- Roofing and mansard panels: flat, batten and standing seam types

Materials and Finishes: PAC-CLAD consists of either Aluminum Association specification ASTM B209 aluminum sheet, temper H14 or H34, or hot-dipped ASTM A 653 Grade A structural quality steel sheets, AISI G90 galvanized, commercial weight. PAC-CLAD sheets are coated with a 2-coat system using

a combination of 70% Kynar 500® polyvinylidene fluoride (PVDF), acrylic resins, pigments and solvents. The system consists of Fluoropon® top coat applied over a polyester primer. A wash coat is applied to the reverse side for additional protection.

Standard Sizes: Aluminum is available in .032" - .080" (0.8 – 2 mm) thickness in 48" (1219 mm) widths. Galvanized steel is available in 24 ga in 48" (1219 mm) widths.

Special Sizes: Aluminum is available in thickness to .125" (3.2 mm) and in widths to 60" (1524 mm) on special order. Minimum quantity is 20,000 lb (9080 kg). Galvanized steel is available in gauges from 26 – 18 and in widths up to 60" (1525 mm) on special order. Minimum quantity is 20,000 lb (9080 kg).

Colors: For standard colors, refer to Table 1. Custom match colors are available in minimum quantities of 10,000 lb (4540 kg).

Finish: Sheens available – Dull, matte and specular, gloss rating of 25 – 35% at 60° viewing angle. Textures available: Smooth; stucco embossed texture E-5.

Limitations: PAC-CLAD performance depends on the integrity of the coating film, and in galvanized steel, on the underlying coating of zinc. PAC-CLAD should not be used in areas of high abrasion or where it will be subject to mechanical damage.

4 TECHNICAL DATA

Applicable Standards: Aluminum Association – Specifications for

Aluminum Structures
American Iron and Steel Institute (AISI)

- AISI G90 - Hot Dipped Galvanized Steel Sheet, Commercial Weight
- Specifications for Cold-Formed Steel Design Manual

American Society for Testing & Materials (ASTM)

- ASTM A525 – Steel Sheet, Zinc-Coated by the Hot Dip Process
- ASTM A653/A653-97 – Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process, Structural Physical Quality
- ASTM B117-95 – Operating Salt Spray (Fog) Apparatus
- ASTM B209/B209M-97 – Aluminum and Aluminum Alloy Sheet and Plate
- ASTM D523-89(1994)e1 – Spectral Gloss
- ASTM D659 – Discontinued standard replaced by ASTM D4214
- ASTM D968-93 – Abrasion Resistance of Organic Coatings by Falling Abrasive
- ASTM D1737-97 – Discontinued standard, replaced by ASTM D522
- ASTM D1808 - Discontinued standard
- ASTM 2247-94 – Testing Water Resistance of Coatings in 100% Relative Humidity
- ASTM 2794-93 – Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- ASTM 3281 – Discontinued standard
- ASTM 3359-95a – Measuring Adhesion by Tape Test
- ASTM D3363-82e1 – Film Hardness by Pencil Test
- ASTM G23-96 – Operating Light-Exposure Apparatus (Carbon Arc Type) With and Without Water

Factory Mutual (FM) – Loss Prevention Data Sheets 1-7 and 1-49

National Coil Coaters Association (NCAA)

- NCAA Procedure No. 11-5
- NCCA Procedure No. 11-18
- NCCA Technical Bulletin No. 11-6

Sheet Metal & Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual

Physical Properties of Fluoropolymer Coating:

- Abrasion Resistance – ASTM D968, coefficient of sand abrasion 65 ± 10
- Accelerated Weathering, Chalk - ASTM G23, Type EH, 5000 hours, rating of 8 or better
- Accelerated Weathering, Color - ASTM G23. Type EH, 5000 hours, $\leq 5 \Delta E$ (Hunter Units) color change
- Adhesion – ASTM D3359/NCCA Procedure No. 11-5 cross-cut tape test, pass
- Chalk Resistance – ASTM D659, no chalk rating 9 – 10
- Color Change – 20 years, $\leq 5 \Delta E$ (Hunter Units) change, after removal of external deposits
- Chemical/Acid Pollution Resistance – ASTM D1808; pass, no color change
- Formability – ASTM D3281 and ASTM D1737, can be formed without film fracture using normal shop practices to a 1 to 2-T bend radius
- Gloss – ASTM D523 Specular gloss of $30^\circ + 5$ (low gloss/sheen available) at 60° ; 26 ga PAC-CLAD GLOSS 10 + 5 AT 60°
- Hardness – ASTM D3363 - $\geq F$ pencil hardness
- Humidity Resistance – ASTM D2247, 1000 hours, no change in hardness
- Impact Resistance – ASTM D2794 and NCCA Technical Bulletin No. 11-6, 70 lb-inch (7.9 Nom.), no tape pick-off

- Life Expectancy – ASTM G23. Type EM, weatherometer, 5000 hours, chalk rating of 8 or better
- Salt Spray Resistance, Aluminum – ASTM B117, 2000 hours, creepage at scribe $\leq 1/32''$ (0.8 mm), no blisters
- Salt Spray Resistance, Steel – ASTM B117, 1000 hours, creepage at scribe $\leq 1/8''$ (3.2 mm), few #8 blisters
- Solvent Resistance – NCCA procedure 11-18, (no comparable ASTM test), pass

5 INSTALLATION

Methods: Fabricate and install PAC-CLAD sheet metal in accordance with SMACNA sheet metal practices. PAC-CLAD can be cut, formed, nailed, screwed or riveted using conventional hand or power tools. PAC-CLAD coatings must be mechanically removed if soldering or welding are necessary. For best results, cutting edges should be kept sharp, clean, properly dressed and closely aligned.

A strippable vinyl film can be applied for protection during fabrication and installation is desired. Vinyl film may remain on the coating during fabrication and erection. Vinyl must be removed prior to or immediately after installation.

PAC-CLAD is a finished material; care must be taken during fabrication and erection to avoid damage to the surface. Proper bend radii must be used in fabrication.

6 AVAILABILITY & COST

Availability: PAC-CLAD panels are available nation-wide and are stocked in standard colors for rapid shipping within 72 hours. Special finishes require additional time for color matching and approvals.

There is a 20,000 lb (9080 kg) minimum for non-standard widths and

colors. Delivery time and price will be quoted upon inquiry.

Cost: Cost for PLAC-CLAD panels is generally 60% of copper roofing sheet, 25% to 50% less than hardcoat anodized finishes and approximately equal to shop or field painted galvanized steel. Contact the manufacturer for specific costs.

7 WARRANTY

A 20-year, non-prorated warranty covering color, fade, chalking and film integrity is available at no additional cost. The warranty is issued on a per project basis upon request.

8 MAINTENANCE

Maintenance is not required. The panel finish is a member of the Teflon® family and is self-cleaning. If cleaning is desired, panels can be washed with mild soap and water followed by a clean water rinse.

9 TECHNICAL SERVICES

Technical services are available from Petersen Aluminum Corporation and regional architectural representatives.

10 FILING SYSTEMS

- Architects' First Source for Products
- MANU-SPEC®
- Sweet's Catalog Files

PAC-CLAD Color Availability

PAC-CLAD Standard	Reflectivity	Emissivity	3 Year Exposure	SRI*	Steel		Aluminum			
					24ga.	22ga.	.032	.040	.050	.063
Almond	0.56	0.89	0.57	66	√	√	√	√	√	
Bone White	0.73	0.89	0.71	89	√	√	√	√	√	√
Cardinal Red	0.37	0.89	0.38	41	√		√		√	
Charcoal	0.28	0.89		29	√		√		√	
Colonial Red	0.32	0.89		34	√		√	√	√	
Dark Bronze	0.25	0.89		25	√	√	√	√	√	√
Evergreen	0.26	0.88		26	√		√			
Granite	0.36	0.89	0.35	40	√	√	√	√	√	
Hemlock Green	0.30	0.90		32	√	√	√		√	
Hunter Green	0.26	0.88		26	√		√			
Mansard Brown	0.25	0.88		25	√	√	√	√	√	
Medium Bronze	0.27	0.90		28	√	√	√	√	√	√
Military Blue	0.34	0.88		36	√		√			
Musket Gray	0.31	0.89		33	√	√	√		√	
Patina Green	0.34	0.89		37	√		√			
Sandstone	0.53	0.89	0.49	62	√	√	√	√	√	√
Sierra Tan	0.36	0.89	0.35	40	√	√	√	√	√	
Slate Blue	0.26	0.87		26	√		√			
Slate Gray	0.36	0.89		40	√	√	√	√	√	
Stone White	0.64	0.88	0.59	77	√	√	√	√	√	√
Teal	0.26	0.88		26	√		√			
Terra Cotta	0.36	0.89	0.37	40	√		√		√	
Matte Black**	0.25	0.85		23	√		√	√	√	√

PAC-CLAD Metallic

Aged Copper	0.28	0.89		29	√		√		√	
Champagne	0.41	0.80	0.40	43	√		√		√	
Copper Penny	0.49	0.87	0.47	56	√		√	√	√	
Silver	0.60	0.83	0.55	70	√		√	√	√	
Weathered Zinc	0.30	0.81		28	√		√		√	
Zinc	0.32	0.89	0.31	34	√		√		√	

PAC-CLAD Standard Colors (do not meet cool roof requirements)

Arcadia Green					√		√			
Award Blue					√		√		√	
Berkshire Blue					√					
Burgundy					√		√		√	
Forest Green					√	√	√	√	√	
Hartford Green					√		√	√	√	
Interstate Blue					√		√		√	