



# **TITE-LOC**

***Metal Roofing Panels***



## Tite-Loc Panels

Front Cover:  
 Pennsylvania Fish & Boat Commission  
 Headquarters  
 Harrisburg, PA  
 Owner: Pennsylvania Fish & Boat Commission  
 Architect: Maguire Group Inc.  
 General Contractor: Lobar Associates, Inc.  
 Roofing Contractor: Progressive Services Inc.  
 Color: Hemlock Green

### Product Features

- Architectural/structural panel
- Herr-Voss corrective leveled
- Factory applied sealant
- Mechanically seamed
- Striation available
- Factory swedged & notched

### Material

- .040 aluminum panel available
- 30 standard colors (24 gauge steel)
- 21 standard colors (aluminum)
- 11 standard colors (22 gauge steel)
- Smooth and stucco embossed available
- 20 year non-prorated finish warranty

**NEW** • Galvalume Plus available

### UL Tests

- UL-580 Class 90 wind uplift
- UL-790 Class A fire rated
- UL-263 fire resistance rated
- UL-2218 impact resistance

### ASTM Tests

- ASTM E1592 tested
- ASTM E283/1680 tested
- ASTM E331/1646 tested

TITE-LOC Panels feature architectural panel aesthetics as well as structural panel performance. TITE-LOC Panels, produced in continuous lengths, are corrective leveled to provide superior flatness and feature an factory-applied sealant bead for improved weather resistance. **Minimum panel length is 4 feet.**

TITE-LOC Panels feature a 2" leg height and are mechanically seamed for improved structural performance and wind resistance. A concealed fastener clip system has been designed to allow for thermal expansion/contraction while providing extraordinary hold-down strength. Three types of clips are available: utility, fixed and floating. One or more of these clips may be used depending on your application. For further details, please contact PAC.

### UL 90 Rating

TITE-LOC Panels carry a UL 90 rating over a wide variety of substrates and assemblies including 5/8" plywood, purlins, nailbase and rigid insulation in conjunction with bearing plates. See chart on page 4 for UL Construction codes. For further details, contact Petersen Aluminum Corp.

### Air and Water Infiltration

TITE-LOC Panels meet the full performance requirements of the ASTM E283/1680 air infiltration test and the ASTM E331/1646 water penetration test. Please contact Petersen Aluminum Corporation for complete test results.

### Materials

- 24 ga. G-90 hot-dipped galvanized steel
- 22 ga. G-90 hot-dipped galvanized steel
- .032 3105-H14 aluminum
- .040 3105-H14 aluminum (Tite-Loc Panel only)

### Trim

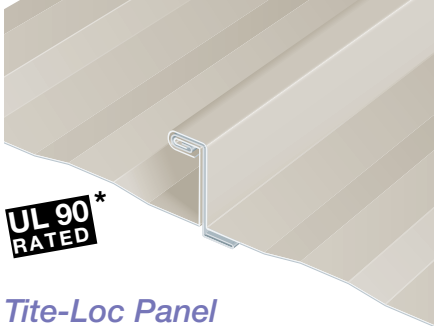
All flashing and trim will be fabricated by manufacturer or qualified fabricator. Flashing shall be PAC-CLAD aluminum (.032-.063 gauge as specified) or PAC-CLAD steel (24 ga. or 22 ga. as specified). A 20 year, non-prorated finish warranty shall be supplied covering finish performance.

### Installation

TITE-LOC Panels are intended for use in architectural and structural roofing. Substrates may include 5/8" (min.) plywood, nailboard insulation or equal with an underlayment of 30# (min.) roofing felt applied horizontally from eave to ridge. Other substrates may include metal decking, purlins or rigid insulation in conjunction with bearing plates. **A minimum of 1/2:12 roof pitch is required.** Consult a local architect/engineer for compliance with local codes and conditions.

Service Net - Water Tower Square  
 Jeffersonville, IN  
 Roofing Contractor: Brasch-Berry Co., Inc.  
 Color: Interstate Blue

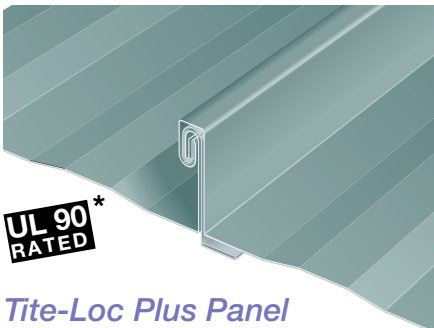
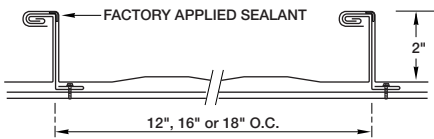




### Tite-Loc Panel

12", 16" or 18" O.C.  
2" high

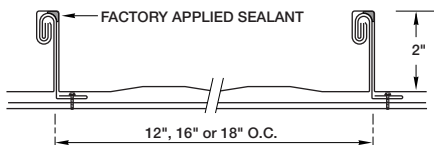
.032 aluminum  
.040 aluminum  
**24 gauge steel**  
**22 gauge steel**



### Tite-Loc Plus Panel

12", 16" or 18" O.C.  
2" high

.032 aluminum  
**24 gauge steel**  
**22 gauge steel**



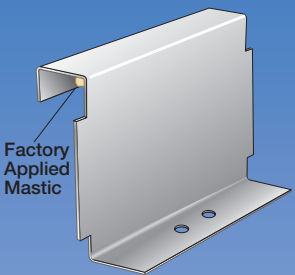
\*24 ga. and 22 ga. panels listed in bold print are UL-90 rated over solid substrate.

### Tite-Loc Panels

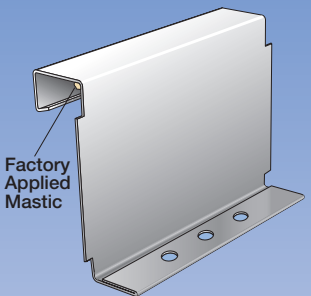
Tite-Loc Panels are factory-formed to length and field seamed to a 90° lock. Tite-Loc panels have been designed for application on roof slopes as low as 1/2:12 pitch. As an additional labor-saver, **the Tite-Loc seamer has been designed to travel both up and down slope during installation.** Tite-Loc panels are available in 12, 16 and 18" widths. Materials available include 22 and 24 gauge steel; .032 and .040 aluminum.

### Tite-Loc Plus Panels

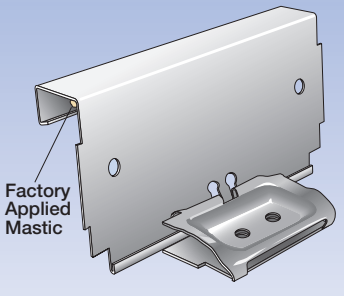
Tite-Loc Plus Panels are factory-formed to length and designed to be field-seamed to 180°. The panel combines an attractive thin-rib profile with superior structural performance. Tite-Loc Plus panels are designed for application over a wide variety of substrates in slopes as low as 1/2: 12 pitch. Tite-Loc Plus panels are available in 12, 16 and 18" widths. Materials available include 22 and 24 gauge steel; .032 aluminum.



**Utility Clip**  
Utility clip, 24 gauge, with factory applied mastic.



**Fixed Clip**  
One piece fixed clip, 22 gauge, with factory applied mastic (#UL-90 rated - Underwriters Laboratories).



**Floating Clip**  
Two piece floating clip, 18 gauge base, 24 gauge top, with factory applied mastic (#UL-90 rated - Underwriters Laboratories).



## UL-Rated Assemblies

### Tite-Loc & Tite-Loc Plus

Construction Number	Panel Width (In.)	Gauge	Clip Type	Clip Spacing	Substrate	UL-2218 Impact Resistance	UL-263 Fire Rating	UL-580 Rating
90	16" or 12"	24 min.	*	5'-0 1/16"	Open Framing	Class 4	Class A	Class 90
176	16" or 12"	24 min.	N/A	5'-0 1/4"	Open Framing	Class 4	Class A	Class 90
180	16" or 12"	24 min.	**	5'-0 1/4"	Open Framing	Class 4	Class A	Class 90
238B	16" or 12"	24 min.	**	2'-6"	Composite System	Class 4	Class A	Class 90
437	16" or 12"	24 min.	**	5'-0"	Plywood	Class 4	Class A	Class 90
449	16" or 12"	24 min.	*	5'-0"	Open Framing	Class 4	Class A	Class 90
451	16" or 12"	24 min.	*	2'-0"	Composite System	Class 4	Class A	Class 90
452	16" or 12"	24 min.	*	2'-0"	Composite System	Class 4	Class A	Class 90
487	16" or 12"	24 min.	**	4'-0"	Composite System	Class 4	Class A	Class 90

\*Fixed or Floating (high or low)

\*\*Fixed or Floating (high, low, or utility)

#### Notes

1. Tests procedures are in accordance with Underwriters Laboratories Standard UL-580 under "Tests For Uplift Resistance of Roof Assemblies".
2. A detailed installation method is available for each Construction Number above and can be found in the UL Roofing Materials and Systems Directory. The panels must be installed in a certain manner to achieve the published results.
3. The panel qualifies for a Class A fire rating in compliance with Underwriters Laboratories Standard UL-263.
4. The panel system qualifies under the following Fire Resistance Design Numbers: P224, P225, P227, P230, P233, P237, P265, P268, P508, P512, P701, P711, P801, P803.  
Refer to the UL Fire Resistance Directory for specific construction methods and hourly ratings.

### Architect/Engineer Information

1. Tite-Loc is a mechanically seamed roof system. Tite-Loc Panels are 18", 16" and 12" wide. Factory applied mastic inside of female leg of panel is standard.
2. Tite-Loc is a structural roofing panel. This panel can be installed directly over purlins or bar joints. It does not require a solid substrate for support.
3. Tite-Loc System is recommended for roof slopes of 1/2:12 or greater.
4. Weathertight and aesthetically pleasing endlaps may be accomplished through the use of swedged and prepunched panels. PAC provides a prepunched back-up plate at the endlap for weathertightness. Prepunching of the panel is available for the endlap condition on 16" widths only. Swaged endlaps require the roof erection to proceed from left to right as viewed from the eave looking toward the ridge. Roofs with no endlaps and less than 6:12 may be erected from either direction. For panel lengths over 50', please inquire.
5. Heavier gauges, striations, embossing and installation over a solid deck minimize oil canning. Industry standard is a minimum 24 gauge material. Oil canning is not a cause for rejection.
6. Substructure must be on an even plane from eave to ridge to avoid panel distortion (1/4" in 20', 3/8" in 40' tolerance).
7. A vapor retarder may be necessary to protect roofing components when high interior humidity is a factor. The need for a vapor retarder, as well as the type, placement and location should be determined by an architect or engineer.



# Specifications

## Metal Roof & Wall Panels 07410

### Part 1: General Requirements

#### 1.01 Description of Work

A. Furnish and install metal roofing (fascia and/or mansard) and accessories in accordance with Petersen Aluminum Corporation specifications and all applicable drawings. Roof support (structural) systems and counterflashings are not included in the section.

#### 1.02 Products

Metal roofing (Fascia and /or mansard) shall be as manufactured by Petersen Aluminum Corporation and shall consist of one of the following profiles: Tite-Loc or Tite-Loc Plus Panels (12", 16" or 18" O.C.)

### Part 2: Products

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" may cause ambiguity in the specifications. Such phrases require verification – procedural, legal, regulatory and responsibility – for determining equivalence of products.

#### 2.01 Sheet Metal Roofing

A. Manufacturer: Petersen Aluminum Corporation

Specifier Note: Paragraph below is a supplement to CSI Masterformat and an addition to MANU-SPEC. Retain or Delete paragraph below to suit project requirements and specifier's practice.

1. Contact: 1005 Tonne Road, Elk Grove Village, IL 60007; Telephone (800) 323-1960, (847) 228-7150; Fax (800) 722-7150

Specifier Note: Paragraphs below list proprietary roof panels offered by Petersen Aluminum Corporation. Select roof panels appropriate to project. Manufacturer's roll-forming equipment produces panels that have been Herr-Voss corrective leveled. Panels are factory formed in lengths up to 50' (12.2 m). Consult the factory for longer lengths. Matching flashing and trim may be factory formed or field formed from PAC-CLAD material. Consult with manufacturer regarding product options. Selection product characteristics required; delete characteristics not required. Refer to manufacturer's SPEC-DATA product sheet.

Specifier Note: Below (Tite-Loc) or (Tite-Loc Plus) panels are factory formed and tension leveled with a factory applied sealant bead for improved weather resistance. Panels feature a 2" (50.2 mm) leg height and a continuous inter-lock for structural performance and wind resistance. A concealed fastener system allows for thermal expansion/contraction while providing holddown strength. Three types of clips are available: utility, fixed and floating. One or more of these clips may be used depending on your application. For further details, please contact PAC. Panels carry a UL 90 rating over designated substrates and assemblies including 5/8" (16 mm) plywood, purlins and rigid insulation in conjunction with bearing plates (UL Construction No. 90, 176, 180, 238B, 437, 449, 451, 452, and 487. Panel features smooth or striations.

UL 790 Class A fire rated, UL 263 fire resistance rated, UL-2218 Impact Resistance rated and meet performance requirements of ASTM E1680 air infiltration test, ASTM E1646 water penetration test and ASTM E1592 air bag test. Consult with Petersen Aluminum Corporation.

B. PAC-CLAD (TITE-LOC) or (TITE-LOC PLUS) panels and trim:

1. Seam Height: 2" (50.2 mm) minimum seam height.
2. Material: ( 24 ga ) ( 22 ga ) G-90 hot-dipped galvanized steel panel.
3. Material: .032" ga (.8 mm) .040" ga (.1mm) alloy 3105-H14 aluminum panel. (Tite-Loc Panel only)
4. Panel Dimension: 12" (305 mm), 16" (406 mm), 18" (457 mm) o.c.
5. Clip: (# choose one) Tite-Loc or Tite-Loc Plus
  - a. One piece fixed clip, 22 gauge, with factory applied mastic (#UL-90 rated-Underwriters Laboratories).
  - b. Two piece floating clip, 18 gauge base, 24 gauge top, with factory applied mastic (# UL-90 rated - Underwriters Laboratories).
  - c. Utility clip, 24 gauge, with factory applied mastic.

Specifier Note: Below eave notching is an option with manufacturer. Retain or delete as applicable.

6. Eave Notching: Factory produced eave notching for trimmed eave panels.
7. Texture: (Smooth texture ) (Stucco embossed texture) (Striations).
8. Rating: UL 90 rating (wind uplift) panel assembly.
9. Flashing and Trim: (Aluminum, (.032", .040, .050, .063, .080" (.8, .1, .13, .16, 1 mm) ga.) (Steel, (24) (22) ga.).
10. Sealant Bead: Factory applied hot-melt mastic bead.

C. PAC-CLAD Flashing and Trim:

Manufacturer's standard flashing and trim profiles, factory formed, gauge as recommended by manufacturer, color and finish to match metal roofing panels.

Specifier Note: Edit paragraph below to suit project requirements, if substitutions are permitted, edit text below. Add text to refer to Division 1 Product Requirements, Product Substitution Procedures Section.

D. Substitutions: No substitutions permitted.

#### 2.02 Materials

- A. Aluminum Sheet: ASTM B209, aluminum alloy 3105 with H14 temper in accord with manufacturer's standard to suit forming operations and finish specified.
  1. Thickness: .032"(.8 mm), .040"(.1mm). (Tite-Loc Panel only)
- B. Galvanized Steel Sheet: ASTM A653, G90 steel sheet, zinc coated (galvanized) by hot dip process, structural quality.
  1. Thickness: 24 ga. and 22 ga. as indicated.

#### 2:03 Related Materials

A. General: Coordinate use of related materials:

1. Underlayment: ASTM D226, Type II No. 30 asphalt saturated organic roofing felt. Refer to Division 7 Roofing Sections.
2. Plywood Deck: 5/8" (16 mm) nominal thickness. Refer to Division 6 Rough Carpentry Section.
3. Nailable Insulation: 1" (25 mm) minimum to 4-1/2" (114 mm) maximum nominal thickness classified polyisocyanurate foamed plastic, 2 pctdensity, with factory laminated 7/16" (11 mm) thick APA rated Oriented Strand Board (OSB). Refer to Division Insulation Sections or Division 6 Rough Carpentry Section.
4. Sealants: Elastomeric joint sealants. Refer to Division 7 Joint Sealers Sections.
5. Bituminous Coating: Cold-applied asphaltic mastic. Provide compound free of asbestos fibers, sulfur impurities and other harmful impurities. Refer to Division 7 Damp proofing Section.

#### 2:04 Fabrication

A. General:

1. Continuous Length: Fabricate panels 50' (15.2 m) and less in one continuous length. Consult Factory for longer lengths.
2. Trim and Flashings: Fabricate trim and flashings from same material as roof system material.
3. Portable Roll Former: Panels fabricated by portable roll former shall not be approved.

Specifier Note: Coordinate article below with finishes specified in sheet metal roofing article above.

#### 2:05 Finishes

A. PAC-CLAD Factory Applied Finish:

1. Topside: Full-strength fluoropolymer (70% Kynar 500 or Hylar 5000 resin) system of 1.0 mil (.025 mm) total dry film thickness.
2. Underside: Wash coat of 0.3 – 0.4 mil dry film thickness.
3. Texture: ( Smooth texture, dull matte specular gloss 25 – 35% at 60°) (Standard E-5 stucco embossed pattern) (Striations).
4. Protective film: Strippable vinyl film applied during panel fabrication and finishing.



# PAC-CLAD® Availability

## Materials

PAC-CLAD is available in prime quality aluminum, 24 gauge and 22 gauge G-90 galvanized steel finished with a PAC-CLAD Kynar 500®/Hylar 5000® finish (top side) and a polyester washcoat (bottom side). Other metals available include mill finish aluminum, copper, galvanized steel, terne-coated stainless steel, stainless and Galvalume Plus.

A strippable vinyl film can be applied for protection during fabrication and installation, if desired. Vinyl masking is recommended on all applications requiring extra handling. **The vinyl must be removed immediately after installation.**

## Textures

PAC-CLAD is available with a smooth texture or a standard E-5 stucco embossed pattern, available at extra cost.

## Warranty

Life expectancy is 20 years plus. A 20-year, non-prorated warranty covering color fade, chalking, and film integrity is available at no extra charge. Warranty terms vary slightly for Cardinal Red, metallic and embossed finishes.

## Technical Data for Kynar 500® or Hylar 5000® Coating

- Life Expectancy—20 years exposure—Chalk: rating of 8 or better. Color: ≤5ΔE (Hunter Units) change.
- Accelerated Weathering—(ASTM G-23 Type EH) 5,000 hours - Chalk: rating of 8 or better. Color: ≤5ΔE (Hunter Units) color change.
- Humidity Resistance—(ASTM 2247) 1,000 hours - No change in pencil hardness.
- Salt Spray Resistance—(ASTM B 117) - 2,000 hours for Aluminum, creepage at scribe ≤1/32, no blisters. 1,000 hours for hot dipped Galvanized, creepage at scribe ≤1/8, few #8 blisters.
- Chemical/Acid Pollution Resistance—(ASTM D 1808) - Pass.
- Solvent Resistance—(NCCA procedure 11-18, no comparable ASTM test) - Pass.
- Formability—(ASTM D 3281 and ASTM D 1737) - Can be formed without film fracture using normal metal shop practices to a 1 to 2-T bend radius
- Hardness—(ASTM D 3363) - ≥F pencil hardness.
- Gloss—30 ± 5 at 60° (low gloss/sheen available).
- Abrasion Resistance—(ASTM D 968) - Coefficient of 65 ± 10.
- Adhesion—(ASTM D 3359 and NCCA Technical Bulletin No. 11-5) - Pass.
- Impact Resistance—(ASTM D 2794 and NCCA Technical Bulletin No. 11-6) - 70 inch/lbs., no tape pick-off.

## PAC-CLAD Availability

Standard	Steel		Aluminum	
	24 ga.	22 ga.	.032	.040
Almond	●		●	●
Arcadia Green	●		●	
Berkshire Blue	●*			
Bone White	●	●	●	●
Burgundy	●			
Cardinal Red	●		●	
Charcoal	●			
Colonial Red	●		●	
Dark Bronze	●	●	●	●
Forest Green	●	●	●	●
Granite	●*		●*	
Hartford Green	●		●	●
Hemlock Green	●	●	●	
Interstate Blue	●		●	
Mansard Brown	●	●	●	●
Matte Black	●		●	●
Medium Bronze	●	●	●	●
Military Blue	●		●	
Musket Gray	●	●	●	
Sandstone	●	●	●	●
Sierra Tan	●		●	●
Slate Gray	●	●	●	
Stone White	●	●	●	●
Teal	●	●	●	
Terra Cotta	●			
<b>Metallic</b>				
Aged Copper	●			
Champagne	●			
Copper Penny	●			
Silver	●		●	
Zinc	●			

● Denotes available from stock. \* Indicates low gloss/low sheen formulation. PAC-CLAD® Metallic finishes are available from stock at a moderate extra cost. PAC-CLAD® Copper Penny is a Non-Weathering finish.

## PAC-CLAD Metallics

Due to new technology, Petersen Aluminum can now supply metallic finishes with the economy of a one-pass, two-coat system. These colors are ideal for curtain-wall and roofing applications. A PAC-CLAD Metallic 20 year, non-prorated finish warranty applies. **This is a directional finish.**

# PAC-CLAD® Color Chart

## Standard Colors

			
<i>Arcadia Green</i>	<i>Military Blue</i>	<i>Colonial Red</i>	<i>Dark Bronze</i>
			
<i>Sandstone</i>	<i>Burgundy</i>	<i>Musket Gray</i>	<i>Sierra Tan</i>
			
<i>Terra Cotta</i>	<i>Mansard Brown</i>	<i>Medium Bronze</i>	<i>Cardinal Red</i>
			
<i>Interstate Blue</i>	<i>Forest Green</i>	<i>Stone White</i>	<i>Teal</i>
			
<i>Hemlock Green</i>	<i>Slate Gray</i>	<i>Matte Black</i>	<i>Bone White</i>
			
<i>Hartford Green</i>	<i>Almond</i>	<i>Berkshire Blue</i>	<i>Charcoal</i>
			
<i>Granite</i>	<i>Galvalume Plus</i>		
<b>PAC-CLAD Metallic Colors</b>			
			
<i>Zinc</i>	<i>Silver</i>	<i>Copper Penny</i>	<i>Aged Copper</i>
			
<i>Champagne</i>			

## Color Matching

If you need a non-standard color, we provide full color matching services. We can provide a color match off of virtually any building material, paint swatch or color chip. Color matched samples can generally be provided free of charge. Custom color projects usually carry a moderate premium cost.

## Custom Colors

PAC-CLAD is available in custom colors. We work with all architectural paint manufacturers (Valspar, PPG, Akzo, BASF) and can provide full custom paint-matching services. Several of our new standard colors were originally specified as a custom color requirement. If the shading or tint of a standard PAC-CLAD color is not right for your project, we can match your request.

Standard PAC-CLAD colors are available from stock for immediate shipment. A lead time of approximately five to six weeks is required for custom color production and processing. Custom steel projects larger than 10,000 square feet, and aluminum projects larger than 20,000 square feet are coil coated with our 20 year finish. Smaller projects may be fabricated, then spray-coated with a pre-approved custom finish. A five year finish warranty applies to all spray coated PAC-CLAD applications.

## Some Recent PAC-CLAD Custom Color Projects:

<b>Illinois Maximum Security Correctional Center</b> Thompson, IL	Prison Gray
<b>Fenway Park</b> Boston, MA	Fenway Green
<b>McCormick Place</b> Chicago, IL	McCormick Gray
<b>Milwaukee Road Depot</b> Minneapolis, MN	Diplomat Gray
<b>Nordstrom's Dept. Store</b> Minneapolis, MN	Charcoal Gray
<b>B-2 Support Facility</b> Whiteman AFB	Stealth Brown
<b>Cingular Wireless Customer Service Center</b> Cedartown, GA	Raisin
<b>Harold Washington Library</b> Chicago, IL	Patina Green
<b>Fleet Center</b> Boston, MS	Gray Metallic
<b>Tower City Center</b> Cleveland, Ohio	Cinder Block Gray
<b>Marriot at Society Center</b> Cleveland, Ohio	Blush Beige
<b>Disney Old Key West Resort</b> Lake Buena Vista, FL	Dawn Pink & Silver



***Specify Petersen ... you have our assurance of QUALITY***

- PAC-CLAD Aluminum
- PAC-CLAD Steel
- Tite-Loc Panels
- Integral Panels
- Snap-on Panels
- Flush Panels
- SNAP-CLAD™
- Redi-Roof®
- Soffit Panels
- Framing Systems
- Flashing and Trim
- Coping and Gravel Stops
- Anodized Aluminum
- Copper and Stainless Steel



Top Photo:  
 Bell-Graham School  
 St. Charles, IL  
 Owner: St. Charles School District  
 Architect: Hestrup & Associates  
 General Contractor: Gilbane Construction  
 Roofing Contractor: Bennett & Brosseau Roofing  
 Color: Hemlock Green



Bottom Photo:  
 Cingular Wireless Customer Service Center  
 Cedartown, GA  
 Distributor: CRS - Atlanta  
 Architect: Rosser International  
 Roofing Contractor: West Georgia Roofing  
 Custom Color: Raisin

*In presenting this catalog, we serve only in an advisory capacity and can undertake no liability. Consideration should be given on local conditions in selecting materials and panel profiles. The photographs appearing in this catalog show typical PAC-CLAD applications.*

*Kynar 500® is a registered trademark of Atochem Inc. and Hylar 5000® is a trademark of Ausimont USA Inc.*

***Petersen Aluminum Corporation***

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[WWW.PAC-CLAD.COM](http://WWW.PAC-CLAD.COM)