ARCHITECTURAL SYSTEMS TECHNICAL GUIDE

ALUMINUM COMPOSITE PANELS & INSTALLATION SYSTEMS

OMEGA PANEL PRODUCTS Ω
LAMINATORS INC.

Effective November 2015

Tech Support: 800.523.2347 LaminatorsInc.com

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Denotes Additional Required Downloadable Content

Meeting your unique needs today and well into the future

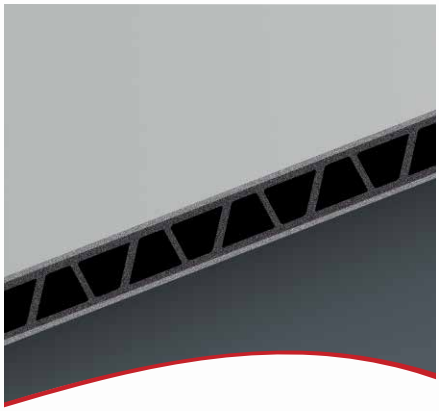
Laminators Incorporated manufactures aluminum composite panels and installation systems designed to maintain a consistent and long-lasting professional look. With a variety of standard colors and finishes, coupled with the ability to meet any custom color requirement, design options are limited only by your imagination. We pride ourselves on delivering innovative, high-quality installation systems and superior customer service. Discover for yourself why building owners, architects, general contractors, distributors, fabricators, and installers turn to Laminators Incorporated for their architectural panel needs. Call us today to learn more at ***800.523.2347*** *or visit* ***LaminatorsInc.com****.*

OMEGA PANEL PRODUCTS Ω
LAMINATORS INC.

OMEGA-LITE®

When you're looking for a highly decorative yet durable solution for exterior wall surfaces, choose Omega-Lite ACM panels—they will not rot, swell, corrode, or delaminate. Best of all, with our installation systems they make total installed costs extremely competitive.

- Composed of a polypropolyene corrugated core between two finished aluminum sheets
- Non-absorbent, water-resistant, and easy to maintain
- Custom color panels and caulks available to meet any corporate need
- Class A fire rating and NFPA 285 approved for various installation systems
- Towering, freeform, and curved structures are possible with the combination of Omega-Lite and Omega-Flex™ panels which provide the ability to wrap a 10' to 17' radius



Panels feature a corrugated polypropolyene core for the highest strength-to-weight ratio of any competitive ACM panel. Painted aluminum sheets cover a black, plastic, water-resistant core.

Typical Applications

- Corporate ID Projects
- Storefronts
- Soffits
- Spandrels
- Opaque Glazing
- Equipment Enclosures
- Sunrooms
- Balcony Railings
- Canopies
- Fascias
- In-Fill Panels
- Clean Rooms

Top-side horizontal applications are not recommended.

Unlike other ACM manufacturers, Laminators Incorporated offers five engineered and tested systems using our Omega-Lite ACM panels. Our proprietary systems can easily be combined with other systems, masonry and glass for instance, to provide a variety of design options. Refer to pages 10-12 for more information.

OMEGA-LITE® TECHNICAL DATA

Construction of Standard Omega-Lite

Sizes*	Core	Backer	Face Thickness	Surface Face Finish	Colors
4 ft. x 8 ft. 4 ft. x 10 ft. 4 ft. x 12 ft.	Corrugated Polypropolyene	Mill finish 0.013 in. aluminum backer, or same as face for 2-sided construction	0.021 to 0.032 in.	Smooth and/or embossed aluminum	PVDF/Kynar 500®, Designer Series, and custom colors
			0.024 in.	Smooth and/or stucco-embossed aluminum	Standard and Natural Series+
			0.013 in.	Stucco-embossed aluminum only	Standard

**5 ft. widths also available in select colors.* *+Smooth only.* *Refer to Architectural Color Chart for specific size and finish availability.*

References & Testing

AAMA 501.1	Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure
AAMA 508	Voluntary Test Method and Specification for Pressure Equalized Rain Screen Wall Cladding Systems
AAMA 2605	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM D635	Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
ASTM D1654	Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
ASTM D1781	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM D1929	Standard Test Method for Determining Ignition Temperature of Plastics
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E90	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
ASTM E283	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E330	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E331	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

OMEGA-LITE® TECHNICAL DATA

Specifications (Based on 6mm panel with 0.032 in. face and 0.013 in. backer.)

Thickness	Width	Length	Weight	Tolerances	R-Value	Stability
6mm (Special order thicknesses available upon request)	48 in. (also 60 in. in select colors)	96 in. 120 in. 144 in.	0.99 lb./ft.^{2}	**Length and Width:** ±1/16 in. **Squareness:** Diagonals equal within 1/8 in. **Thickness:** ±1/64 in.	R-0.50 hr. ft.^{2} °F/BTU	**Temp:** 13.1 x 10^{-6} in./in. °F

Fire Rating: Based on ASTM E84: Class A, Flame Spread Index = 15, Smoke Developed Index = 90

Bond Test: Based on ASTM D1781

Approvals/Compliance

Miami-Dade County Product Control Approved

- Miami-Dade County, Florida, NOA No. 15-0409.11 Expiration 08/2020
- +/- 120 psf design wind load
- Approval pertains only to Omega-Lite panels installed in the following systems:
  - 1-Piece, Tight-Fit Molding Installation System
  - Clip & Caulk Installation System
  - Rout & Return Installation System
  - Dry Seal Installation System
    - Large missile impact approved over exterior gypsum wallboard (Dry Seal only)

Florida Product Approval No. FL17652

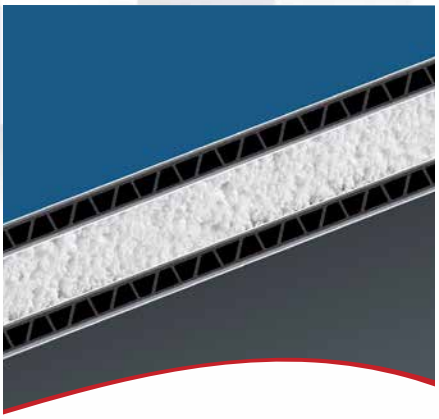
- +/- 120 psf design wind load
- Approved for use in high-velocity hurricane zones
- Approval pertains only to Omega-Lite panels installed in the following systems:
  - 1-Piece, Tight-Fit Molding Installation System
  - Clip & Caulk Installation System
  - Rout & Return Installation System
  - Dry Seal Installation System

NFPA 285 (National Fire Protection Association) Compliant

- Compliance pertains only to Omega-Lite panels when installed in the following systems under specific requirements*:
  - 1-Piece, Tight-Fit Molding Installation System
  - Clip & Caulk Installation System
  - Rout & Return Installation System
  - Dry Seal Installation System

* Contact Laminators technical support for additional information on specific wall construction requirements

THERMOLITE™



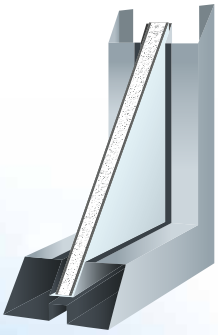
Panels are water-resistant, featuring an insulating core of Polypropolyene (ISO) or Expanded Polystyrene (EPS) foam. Corrugated polypropolyene stabilizers are designed for optimal strength with minimal weight. Prefinished aluminum panels can be ordered in a smooth or stucco-embossed finish in 3/4 in. to 3-1/2 in. overall thickness.

Energy-saving insulating properties and a great look rolled into one—that's the magic of our Thermolite panels used for exterior wall applications.

- Constructed of an insulating foam core sandwiched between two corrugated polypropolyene stabilizers and finished aluminum sheets
- Water-resistant, virtually maintenance-free for up to 20 years
- Available in smooth or stucco-embossed finishes
- Fits into standard 1 in. insulating glass and glazing pockets and storefront extrusions
- Panels can be fabricated on-site using standard carpentry tools or factory-cut to meet your exact specifications

Typical Applications

- Curtain Walls
- Storefronts
- Spandrels
- Partitions
- Schools
- Opaque Glazing
- In-Fill Panels
- Soffits
- Sunrooms



THERMOLITE™ TECHNICAL DATA

Construction of Thermolite Panels

Sizes*	Core	Backer	Face	Surface Face Finish	Colors
4 ft. x 8 ft. 4 ft. x 10 ft. 4 ft. x 12 ft.	Stabilizers: Corrugated Polypropolyene Insulating Core: EPS or ISO Foam	Mill finish 0.013 in. aluminum sheet or same surface as face depending on application	0.028 or 0.032 in.	Smooth and/or embossed aluminum	PVDF/Kynar 500®, Designer Series, and custom colors
			0.024 in.	Smooth and/or stucco-embossed aluminum	Standard and Natural Series+
			0.013 in.	Stucco-embossed aluminum only	Standard

**5 ft. widths also available in select colors.* *+Smooth only.* *Refer to Architectural Color Chart for specific size and finish availability.*

Specifications (Based on 1 in. thick panel with 0.032 in. face and 0.013 in. backer.)

Thickness	Width	Length	Weight	Tolerances	Stability	Sound Transmission
Nominal: 1 in. fits 1 in. glass and glazing pockets Actual: 15/16 in. ±1/16 in. thick Thicknesses from 3/4 in. to 3-1/2 in. can be ordered	48 in. or cut-to-size 60 in. in select colors	96 in. 120 in. 144 in. or cut-to-size	1.40 lb./ft.^{2}	Length and Width: ±1/16 in. Squareness: Diagonals equal within 1/8 in. Thickness: ±5/64 in.	Thermal Expansion: 13.1 x 10^{-6} in./in.°F Max. Service Temp. EPS Core: 167°F (long-term) 180°F (intermittent)	EPS Core: STC: 26

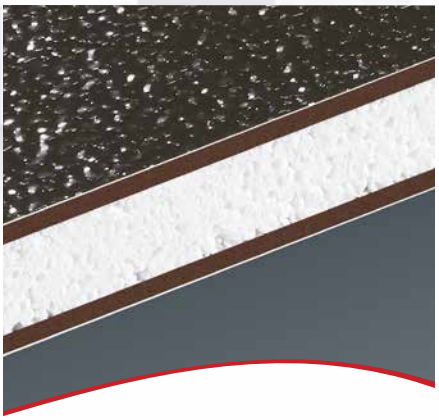
Fire Rating (EPS Only): Flame Spread Index = 0, Smoke Developed Index = 100

Bond Test: Based on ASTM D1781

References & Testing

AAMA 2605	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM D635	Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
ASTM D1781	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM D1929	Standard Test Method for Determining Ignition Temperature of Plastics
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E90	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

OMEGA FOAM-PLY®



Panels feature an insulating core of Polyisocyanurate (ISO) or Expanded Polystyrene (EPS) foam. Exterior-grade hardboard stabilizers provide an exceptionally strong surface. Finished aluminum panels can be ordered in a smooth or stucco-embossed finish in 5/8 in. to 3-1/2 in. thickness.

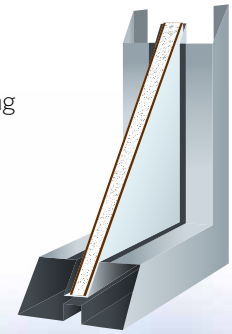
For budget-conscious applications in energy-saving retrofits, storefronts, and opaque glazing, Omega Foam-Ply is the ideal choice. Get a decorative yet exceptionally strong surface with excellent wind and impact resistance.

- Features an insulating foam core sandwiched between two layers of exterior-grade hardboard and finished aluminum sheets
- Can be cut onsite with standard carpentry tools, very low-cost installation
- Available in a variety of colors and surface finishes

Omega Foam-Ply panels may be damaged by water intrusion. For long-lasting performance, prevent water intrusion with proper caulking. Hardboard stabilizers as well as some foams will absorb water causing unsightly swelling, corroding of face metals, and a loss in R-value. Panels must be properly sealed to prevent damage. Dissimilar metals in contact cause electrolysis. Provide adequate separation between aluminum panel faces and backs and other metals.

Typical Applications

- Storefronts
- In-Fill Panels
- Sunrooms
- Opaque Glazing
- Spandrels
- Partitions



OMEGA FOAM-PLY® TECHNICAL DATA

Construction of Omega Foam-Ply Panels

Sizes*	Core	Backer	Face Thickness	Surface Face Finish	Colors
4 ft. x 8 ft. 4 ft. x 10 ft. 4 ft. x 12 ft.	Stabilizers: Exterior Hardboard Insulating Core: EPS or ISO Foam	Mill finish 0.013 in. aluminum sheet or same surface as face depending on application	0.028 or 0.032 in.	Smooth and/or embossed aluminum	PVDF/Kynar 500®, Designer Series, and custom colors
			0.024 in.	Smooth and/or stucco-embossed aluminum	Standard and Natural Series+
			0.013 in.	Stucco-embossed aluminum only	Standard

**5 ft. widths also available in select colors.* *+Smooth only.* *Refer to Architectural Color Chart for specific size and finish availability.*

Specifications (Based on 1 in. panel with 0.013 in. face and 0.013 in. backer.)

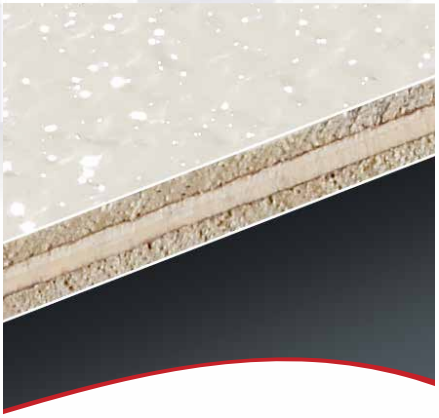
Thickness	Width	Length	Weight	Tolerances	Stability
Nominal: 1 in. fits 1 in. glass and glazing pockets Actual: 15/16 in. ±1/16 in. Custom thicknesses available	48 in. or cut-to-size 60 in. in select colors	96 in. 120 in. 144 in. or cut-to-size	1.81 lb./ft.^{2}	Length and Width: ±1/16 in. Squareness: Diagonals equal within 1/8 in. Thickness: ±5/64 in.	Thermal Expansion: 13.1 x 10^{-6} in./in. °F

Bond Test: Based on ASTM D1781

References & Testing

AAMA 2605	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM C518	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM D1781	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials

OMEGA-PLY®



A painted aluminum face bonded to an exterior-grade plywood core to provide an exceptionally strong surface. An aluminum backer completes the panel.

Add decorative flair and a very strong and durable surface to fascias, soffits, and storefronts with Omega-Ply architectural panels.

- Highly impact-resistant plywood core provides exceptional strength and rigidity
- Install at a very low cost using extruded moldings (for 1/4" plywood only)
- Available in smooth or stucco-embossed finishes

Typical Applications

- Fascias
- Canopies
- Spandrels
- In-Fill Panels
- Storefronts
- Sunrooms
- Soffits
- Opaque Glazing

Top-side horizontal applications are not recommended.

OMEGA-PLY® TECHNICAL DATA

Construction of Omega-Ply Panels

Sizes	Core	Backer	Face Thickness	Surface Face Finish	Colors
4 ft. x 8 ft. 4 ft. x 10 ft.	Exterior-grade plywood	Mill finish 0.013 in. aluminum sheet or same surface as face depending on application	0.028 or 0.032 in.	Smooth and/or embossed aluminum	PVDF/Kynar 500®, Designer Series, and custom colors
			0.024 in.	Smooth and/or stucco-embossed aluminum	Standard and Natural Series+
			0.013 in.	Stucco-embossed aluminum only	Standard

+*Smooth only.* *Refer to Architectural Color Chart for specific size and finish availability.*

Specifications

Thickness	Width	Length	Weight	Tolerances	Stability
1/4 in. or 1/2 in. plywood	48 in.	96 in. 120 in.	1.21 lb./ft.^{2}	Length and Width: ±1/16 in. Squareness: Diagonals equal within 1/8 in. Thickness: ±1/32in.	Thermal Expansion: 13.1 x 10^{-6} in./in. °F

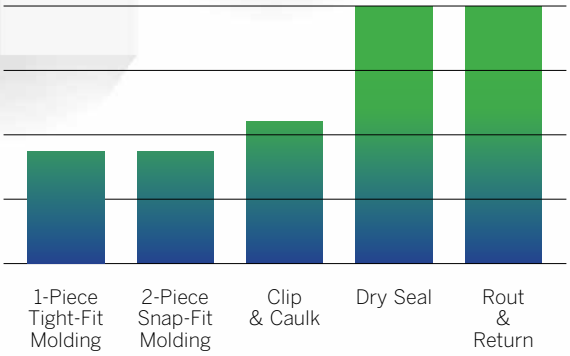
Bond Test: Based on ASTM D1781

References & Testing

AAMA 2605	Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM D1781	Standard Test Method for Climbing Drum Peel for Adhesives
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials

INSTALLATION SYSTEMS

Installation System Cost Comparison



Unlike other ACM manufacturers, Laminators Incorporated offers five engineered and tested systems using our Omega-Lite ACM panels. Our proprietary systems can easily be combined with other systems, masonry and glass for instance, to provide a variety of design options.

Omega-Lite 6mm panel was tested and passed the requirements of the National Fire Protection Association (NFPA) 285 standard when installed in four of our installation systems. Unlike similar products in the industry, Laminators did not have to alter our standard product or installation methods in order to pass the test! Our standard 6mm core and installation systems pass NFPA 285 without the need for a special, fire-retardant core.*

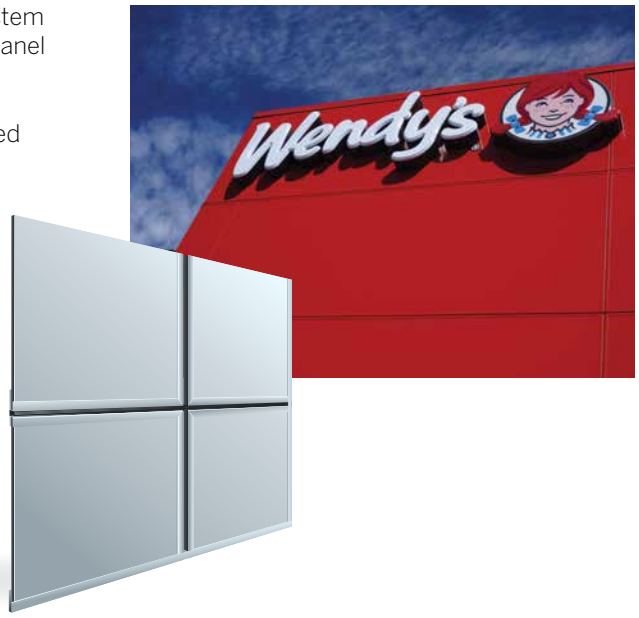
Omega-Lite panels can be measured and cut at the job site—no prefabrication or comprehensive shop drawings are necessary. Special panel lengths can be ordered to minimize waste and reduce labor and materials expenses.

With outstanding features such as exceptional strength and durability, ease of installation, and the flexibility of custom colors, Omega-Lite ACM is the premier choice in aluminum composite material for a variety of architectural projects across the United States and Canada. Get the look you need at the budgeted cost you require.

1-Piece, Tight-Fit Molding*

Laminators Incorporated's 1-Piece, Tight-Fit Molding installation system makes panel installation easy using our durable 1-piece moldings. Panel installation time is greatly reduced since Omega-Lite ACM can be erected immediately after the sheathing crew has finished prepping the wall. An attachment system can also accommodate sophisticated pressure-equalized rainscreen walls or retail retrofits.

The option of choosing color-matched or contrasted aluminum moldings is offered to achieve various desired looks. Both "H" and "Reveal H" moldings are available providing two different design choices for the panel joints. The extrusions are designed to encapsulate sealant, which means there are no exposed sealants and no required maintenance.



*Omega-Lite and installation system meet NFPA 285, Miami-Dade County Product Control and Florida Product Approval requreiments. Our standard 6mm core and installation systems passed NFPA 285 tests without the need for a special, fire-retardant core.

INSTALLATION SYSTEMS

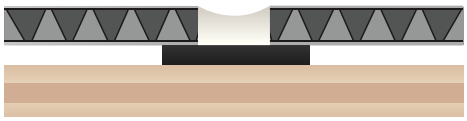
2-Piece, Snap-Fit Molding

Laminators Incorporated's 2-Piece, Snap-Fit Molding installation system achieves a contemporary look with the ease of a snap-fit installation—both flat and reveal effects are easily obtainable. Molding receptors are fastened before panel installation making this a non-progressive system installed in a grid- like fashion. Use "J", "H" and/or "Reveal" moldings where the faceplate snaps into the receptor, overlapping the panel and hiding the joints and fasteners.

Clip & Caulk™*

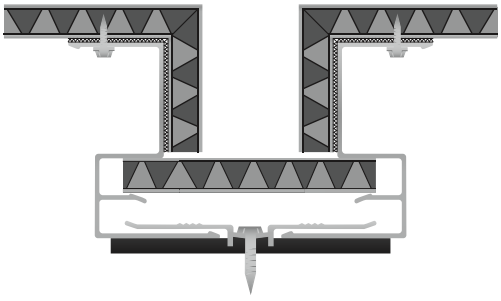
Laminators Incorporated's Clip & Caulk installation system achieves the Rout and Return "look" without the hassle of prefabricating the panels—greatly reducing the total installed cost. This easy, field-proven method attains a very flat look without visible fasteners.

No prefabrication required—panels can be cut on-site with few peripheral accessories needed for installation. Color-matched caulk gives a beautiful monochromatic look; contrasting caulk can be used with eye-pleasing results.



Dry Seal*

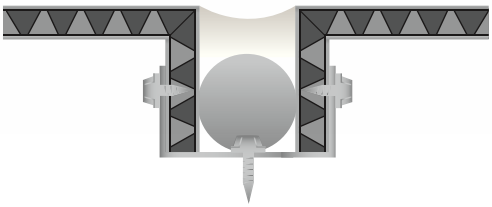
Laminators Incorporated's Dry Seal installation system features a deep reveal "look" without caulk at the joints creating a crisp, clean appearance. On or off-site fabrication provides flexibility during the installation. Ideal for constructing a high-performance, pressure-equalized rainscreen wall system that compartmentalizes the air cavity and allows for drainage and ventilation—reducing moisture-related issues within the wall cavity.



INSTALLATION SYSTEMS

Rout & Return*

Laminators Incorporated's Rout & Return installation system gives a sophisticated yet high-tech look—generates a "deep-reveal" or flush monolithic appearance. Panels can be prefabricated in a shop or panned onsite using standard carpentry tools to give a solid, finished appearance. Color-matched caulk gives a beautiful monochromatic look; contrasting caulk can be used with eye-pleasing results.



Omega-Flex™ Curve Treatment

Typically, radial panel installations require costly engineering, shop fabrication, and difficult installation. Laminators Incorporated Omega-Flex ACM panels make such applications easy and inexpensive without sacrificing beauty; however, special panel configurations are required.

Omega-Flex panels will conform to the curved shape of the structural support system without costly off-site roll-forming. Panels fit correctly avoiding any installation delays caused by imprecise measurements. Omega-Flex panels must be installed with 1-piece moldings.

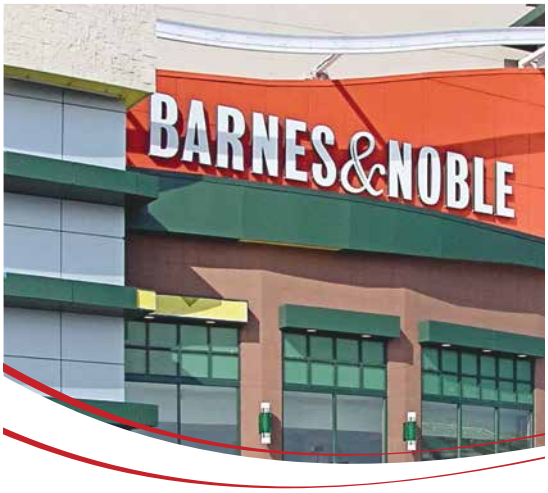
Download product information and installation instructions from LaminatorsInc.com

*Omega-Lite and installation system meet NFPA 285, Miami-Dade County Product Control and Florida Product Approval requreiments. Our standard 6mm core and installation systems passed NFPA 285 tests without the need for a special, fire-retardant core.

COLORS AND FINISHES

Vivid colors add new dimension to great architectural design. The right colors create visual interest, enhance beauty, and promote a sense of balance. Laminators Incorporated offers **more than 50 stunning color choices** to complement your design, covering a range of aesthetics and applications. We can also create or match custom colors to your specifications, making it easy to maintain consistency in corporate identity projects.

In addition to the wide range of color choices, aluminum composite architectural panels are now available in ten new finishes ranging from smooth wood grains to bright metallic hues. Metal color chips and samples are also available by request. ***Additional colors and patterns available by special order.***



Visit LaminatorsInc.com to view or download our Architectural Color Chart for a full list of colors and finishes. To speak with an architectural systems representative, please call 800.523.2347.

ARCHITECTURAL SERVICES

Unique in the industry, Laminators Incorporated is a full-service manufacturing company offering complete, innovative, turnkey solutions for your architectural cladding needs.

As manufacturers and fabricators of architectural panels, we understand all the nuances of performing take-offs, fabricating for time- and cost-efficiency, and more.

Whether your project is in the design, specification,production, or installation stage, our experienced staff can assist your team along the way, including:

- Engineering
- Fabrication
- Panned Edges
- Take-Offs
- Shop Drawings
- Field Training

Laminators Incorporated is committed to providing value through high-quality products, innovative application solutions and superior customer service.

Visit LaminatorsInc.com to see our full Architectural Project Portfolio.

OMEGA PANEL PRODUCTS Ω

LAMINATORS INC.

3255 Penn Street, Hatfield, PA 19440-1731

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