

NEW & IMPROVED!

FIELD-FABRICATED INSTALLATION SYSTEMS



1-Piece,
Tight-Fit Molding



Effective May 2019

Tech Support: 800.523.2347 LaminatorsInc.com

Laminators' new and improved field-fabricated installation systems provide designers and installers the optimal solution for the challenges associated with achieving a code-compliant exterior wall envelope. Before we present the details of the solution, let's examine the complexity of these code challenges:

Aluminum Composite Material (ACM) panels are commonly used as the aesthetic covering for the exterior wall portion of a building envelope. The exterior wall envelope plays a multifunctional role in the performance of the overall building envelope and must accomplish the following:

- Manage moisture flow (liquid water and water vapor) through the exterior wall
- Minimize the impact of exterior air temperature on interior conditioned space
- Retain the majority of building-generated heat or conditioned air
- Control the spread of fire across the exterior
- Provide structural support for an aesthetic veneer system



The International Building Code (IBC) has established performance requirements for water management, thermal performance, and fire resistance for exterior wall envelopes. Unfortunately, complying with these building code performance requirements forces designers and installers into a complex balancing act. Meeting any one performance requirement in isolation of the others can lead to a conflict or unbuildable condition. Achieving a code-compliant ACM veneer assembly often requires the use of proprietary solutions that involve complex detailing and planning, thereby increasing labor and material costs while reducing the flexibility for making adjustments during construction.

UNDERSTANDING CODE REQUIREMENTS

WATER MANAGEMENT & VENTILATION

Section 1403 of the IBC requires that exterior walls provide a weather-resistant exterior envelope that prevents the accumulation of water within the wall assembly and provides a means for draining water to the exterior of the wall assembly.



What the code does not explicitly state is that there must be a means to promote drying of excess water that primary water controls (i.e., flashings) are not able to completely manage out of the wall assembly. Drying of excess water is achieved through the introduction of ventilation to promote air flow within the cavity behind the exterior veneer system.

The term **“Back-Drained and Ventilated”** is derived from the requirements that exterior walls must allow for drainage behind the exterior veneer system to prevent bulk water accumulation and provide ventilation as a means to keep the wall assembly dry.

UNDERSTANDING CODE REQUIREMENTS

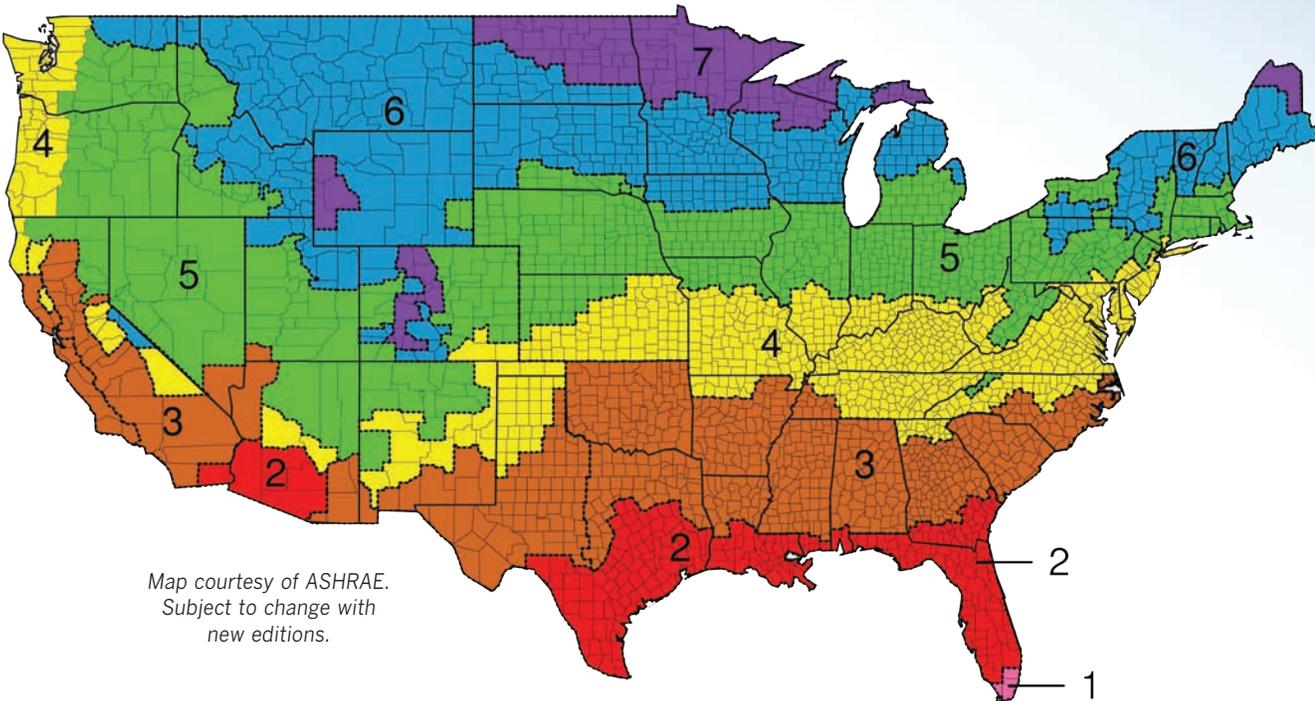
THERMAL PERFORMANCE



Chapter 13 of the IBC requires that buildings be designed and constructed in accordance with the International Energy Conservation Code (IECC). While the IECC offers its own compliance criteria for commercial energy efficiency, it recognizes ANSI/ASHRAE/IES Standard 90.1 “Energy Standard for Buildings Except Low-Rise Residential Buildings.”

- Both the IECC and ASHRAE 90.1 are formally adopted as code once a state or other authority having jurisdiction (AHJ) adopts the latest version of IBC
- The IECC and ASHRAE 90.1 define prescriptive R-value minimums for continuous insulation in the building envelope for various types of building construction based on geographic climate zones
- R-value measures the resistance of a material to the flow of heat; the higher the R-value, the more effective a material is at resisting the flow of heat

The most recently adopted versions of ASHRAE 90.1 and IECC are now requiring continuous insulation in above-grade, steel-framed wall construction across the majority of the United States. The IECC and ASHRAE 90.1 each publish a climate zone map of the United States dividing the country into eight distinct Climate Zones. Depending on which version of IECC or ASHRAE has been adopted by a state or local AHJ, only Climate Zones 1 and 2 exclude continuous insulation requirements (newer versions of IECC and ASHRAE now have continuous insulation requirements in Climate Zone 2).



Map courtesy of ASHRAE.
Subject to change with
new editions.

FIRE RESISTANCE

ACM is classified as a combustible material and is therefore subject to limitations when installed on buildings other than Type V construction. Per Section 1407 of the IBC, unless specific exemption criteria are met, all ACM systems must be tested for compliance with NFPA 285 “Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.”

Foam plastic is one of the products commonly used to provide the now requisite layer of continuous insulation in exterior wall assemblies. Foam plastic insulation is a petroleum-based product that will combust with sufficient heat, therefore triggering the requirement for exterior wall assemblies with foam plastic insulation to be compliant with NFPA 285 regardless of whether the ACM veneer portion of the assembly meets the Section 1407 exemption criteria.



THE OPTIMAL SOLUTION: BACK-DRAINED & VENTILATED + OMEGA CI®

Back-Drained & Ventilated

Laminators' new and improved Back-Drained and Ventilated, Field-Fabricated installation systems (1-Piece, Tight-Fit Molding; Clip & Caulk™) use aluminum extrusions as sub-framing members to create a 7/8"-deep cavity behind the panel veneer. This provides a number of benefits:

- Additional cavity space improves air flow
- A drainage path is easily achieved through gaps in the aluminum sub-framing members
- Maintains the aesthetic familiarity of Laminators' legacy systems while refining system performance through improved moisture management and the allowance for air exchange

Omega CI®

Omega CI is a continuously insulated structural system comprising polyisocyanurate ("polyiso") foam bonded to 5/8" fire-treated plywood.

- The plywood layer provides a dimensionally stable substrate by normalizing attachment loads (avoiding deformation of the rigid foam insulation) and is also fire-treated to allow for NFPA 285 compliance
- The foam insulation layer provides thermal resistance to achieve the desired R-value for the wall assembly without causing thermal bridging

Back-Drained & Ventilated + Omega CI

Combining Laminators' Back-Drained and Ventilated, Field-Fabricated installation systems with Omega CI and an air and water barrier offers a simple design solution for installations requiring continuous insulation while maintaining code-mandated performance requirements for water control and fire resistance.

- Systems install directly to the plywood sheathing layer of Omega CI
 - Removes complex detailing and extensive planning associated with most proprietary solutions for installation of ACM veneer systems over continuous insulation
 - Members can easily be relocated during construction providing installers with the flexibility necessary to accommodate changing field conditions
- Gives designers and installers the freedom to choose any air and water barrier product that can be installed over plywood sheathing (NFPA 285 requirements were met using Barritech VP)
 - Panel adhesive interfaces directly with sub-framing members; removes the potential for product incompatibility with air and water barrier



OMEGA CI: A CLOSER LOOK

Omega CI is a rigid insulation panel comprising a closed-cell polyiso foam core bonded to a premium performance coated glass backer and a 5/8" fire-treated plywood face. Omega CI is available in 4' x 8' sheets in 2.1" thickness (contact Laminators technical support for alternative thickness availability).

Benefits

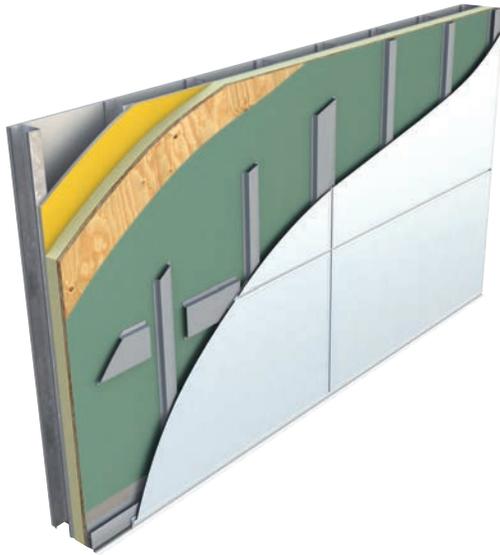
- Ease of installation: product is installed in a similar manner to traditional plywood sheathing
- Labor savings: combines the installation of continuous insulation and structural sheathing into one component
- Single-source responsibility for product delivery
- Simplifies attachment of ACM veneer systems by providing a continuous structural substrate
- 2.1" thickness provides R-9.6 for IECC/ASHRAE 90.1 prescriptive continuous insulation requirement
- NFPA 285 compliant for installations on Type I, II, III, and IV construction

Testing & Approvals

- Class A fire rating and NFPA 285 compliant with 1-Piece, Tight-Fit Molding and Clip & Caulk installation systems

THE OPTIMAL SOLUTION: BACK-DRAINED & VENTILATED + OMEGA CI® (cont'd)

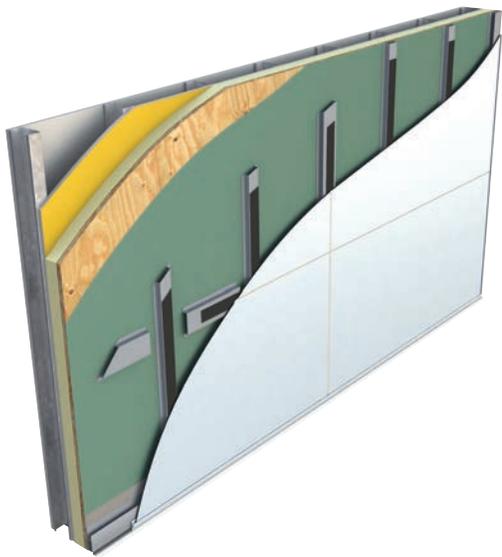
BACK-DRAINED & VENTILATED, FIELD-FABRICATED INSTALLATION SYSTEMS



1-Piece, Tight-Fit Molding

Laminators' 1-Piece, Tight-Fit Molding installation system achieves a traditional yet high-tech appearance at an affordable cost. This easy-to-install progressive installation system uses aluminum moldings to encapsulate panel edges.

- Both flat and reveal moldings are available providing two different design options for panel joints
- No exposed sealant joints to maintain
- Option to provide mitered joint intersections
- Can be fully field-fabricated at the jobsite leading to faster install times and greater flexibility for adjustments during construction (not offered with traditional shop-fabricated ACM)
- NFPA 285 compliant for multi-story buildings



Clip & Caulk™

Laminators' Clip & Caulk installation system provides the traditional Rout & Return "look" without the hassle and cost of fabricating panels.

- Cost-effective yet attractive finish
- Color-matched joint sealants available
- Can be fully field-fabricated at the jobsite leading to faster install times and greater flexibility for adjustments during construction (not offered with traditional shop-fabricated ACM)
- NFPA 285 compliant for multi-story buildings

For more information on Laminators' Back-Drained and Ventilated installation systems and the Omega CI continuously insulated structural system, visit LaminatorsInc.com or call 800.523.2347.



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