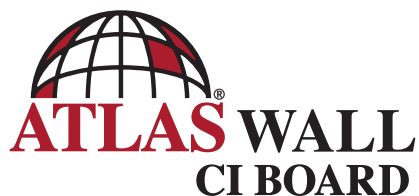


The Smarter Continuous Insulation Wall Board Solution



**RIGID POLYISO FOAM INSULATION FOR MULTIPLE APPLICATIONS
HIGH R-VALUE CONTINUOUS INSULATION FOR WALL ASSEMBLIES**

For Types I-V Commercial Construction

www.AtlasWallCI.com

TO MEET CODES AND ENSURE BEST PERFORMANCE...

Trust Atlas Wall CI Board!
The Multi-Use, High-Efficiency Polyiso Insulation.

Why CI? Why Today?

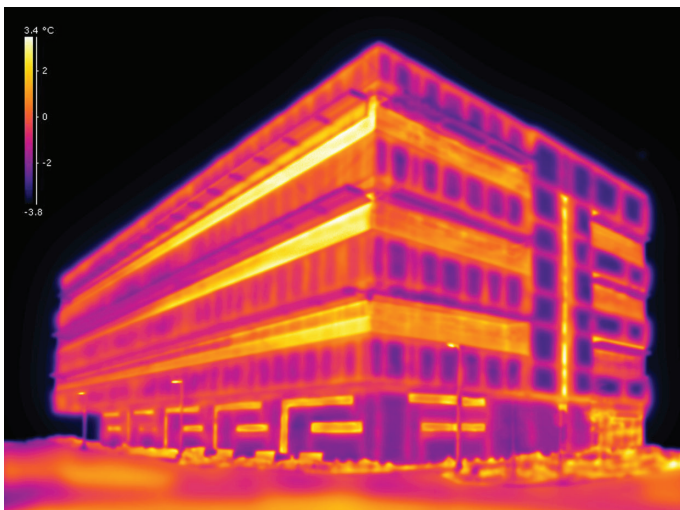
New, better ways to build exterior walls are prescribed by the U.S. model energy codes and standards including the International Energy Conservation Code (IECC) and ASHRAE's Standard 90.1-2010. What are the major changes? To start, the use of continuous insulation (CI), which provides an uninterrupted thermal barrier over an entire wall, not just in wall cavities between studs.

Continuous Insulation (CI): insulation that is continuous across all structural members without thermal bridges other than fasteners and service openings. It is installed on the interior, exterior, or is integral to any opaque surface of the building envelope.

—ANSI / ASHRAE / IES Standard 90.1-2010

Building science has proven conclusively that CI is the most effective way to insulate building envelopes for energy savings.

A continuous layer of insulation usually installed outboard of the structure eliminates thermal bridging through studs and structural steel. Without CI, heat or cold bypasses the batt insulation, draining energy through the “thermal shorts” of studs, purlins, and steel columns.



Thermal imagery shows heat loss through studs in walls with only traditional batt insulation (yellow areas reveal thermal bridging).

CI saves energy, money, and fuel. Codes are now prescriptively requiring CI because it's simply the smart thing to do, cutting HVAC costs dramatically and boosting interior comfort.

In fact, more than 90% of the U.S. jurisdictions prescribe the use of CI for steel-framed walls above grade, mass walls and in some areas, also wood frame.

CI is the key to energy-efficient, sustainable buildings. Closed-cell polyiso insulation is an efficient choice for continuous insulation (CI).

Why Is CI Important?

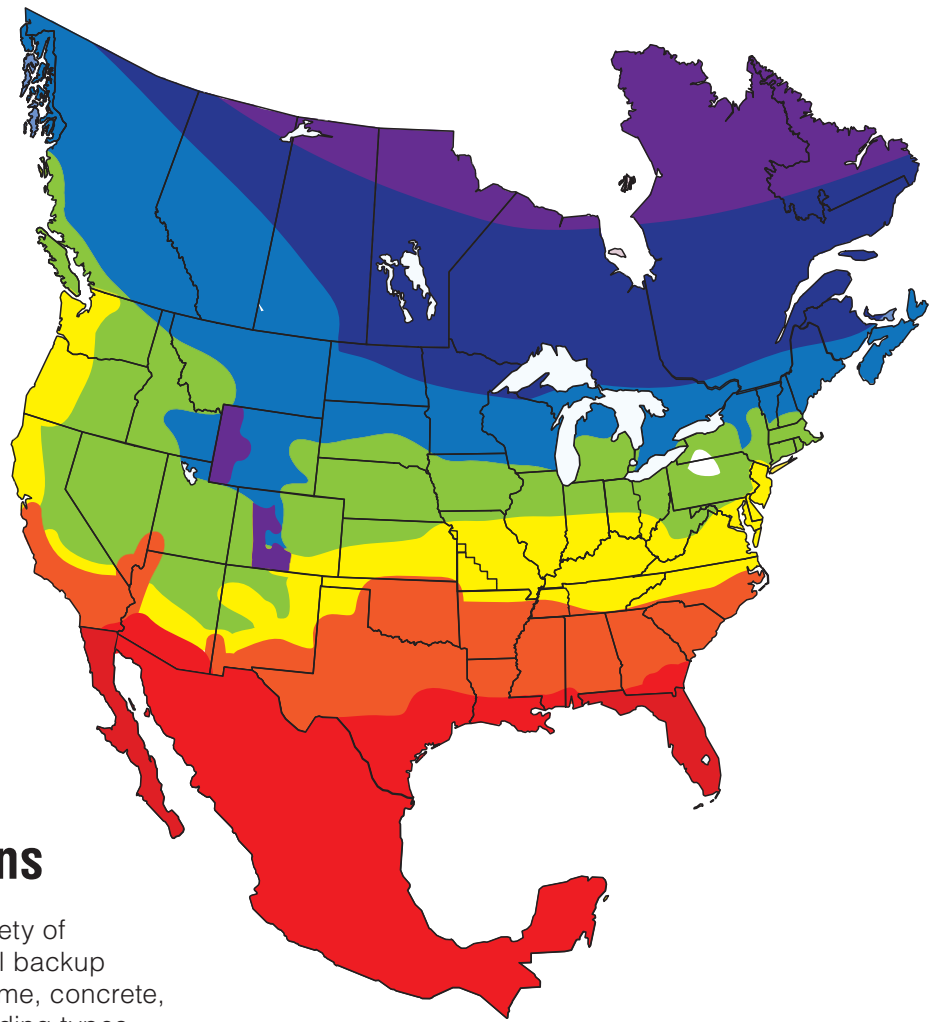
Thermal bridging can have a large impact and, depending on the framing material, can greatly reduce the actual realized R-value of a wall assembly.

Framing Spacing	Nominal Cavity Insulation	Wood Framing Effective R-value	Steel Framing Effective R-value
2x4 16" o.c.	R-11	R-9.0 82%	R-5.5 50%
	R-13	R-10.1 78%	R-6.0 46%
2x4 24" o.c.	R-11	R-9.4 85%	R-6.6 60%
	R-13	R-10.7 82%	R-7.2 55%
2x6 16" o.c.	R-19	R-15.1 79%	R-7.1 37%
	R-21	R-16.2 77%	R-7.4 35%
2x6 24" o.c.	R-19	R-16.0 84%	R-8.6 45%
	R-21	R-17.2 82%	R-9.0 43%

credit: 2009 Ashrae handbook of fundamentals

Since the codes also call for air barriers, moisture protection and fire safety, polyiso's multi-use capability also makes it a practical choice. This has long been recognized on commercial roofs, where Atlas leads the way in polyiso roofing products.

Almost every climate zone has prescriptive CI solutions based on R-values.



Construction Applications

Atlas Wall CI Board may be used in a variety of construction types including common wall backup assemblies such as wood frame, steel frame, concrete, or CMU. It can be used with multiple cladding types, including stucco, fiber cement, vinyl and many other sidings, metal, brick and stone masonry veneers, and more. While these are not design recommendations, the illustrations included in this brochure and below provide examples of Atlas products in use.



Atlas EnergyShield® PRO2 over steel framing
Steel Stud with exterior gypsum, shown without cladding.



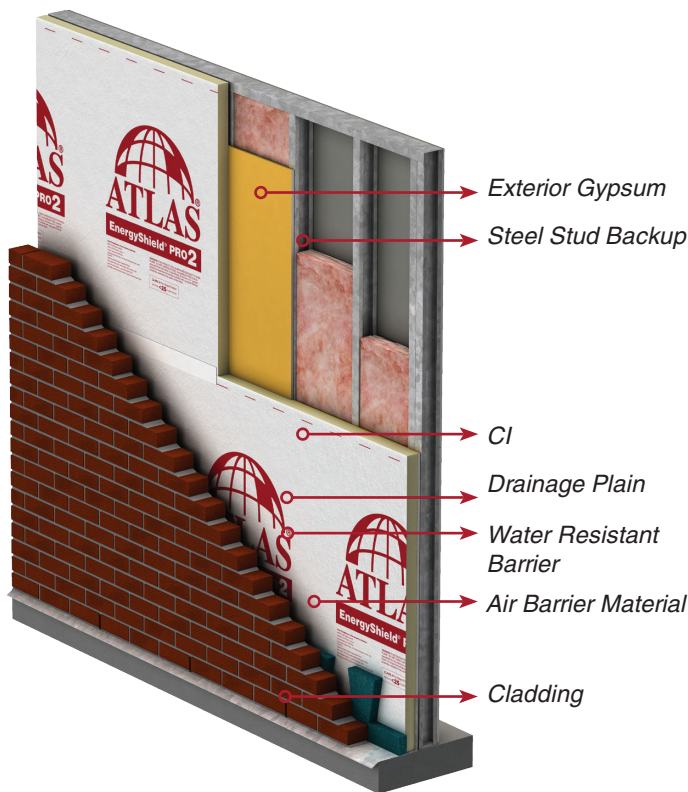
Atlas EnergyShield® PRO over CMU
Concrete masonry, shown without cladding.



Atlas EnergyShield® over wood framing
Wood framing, shown without cladding.

Design And Construction Advantages With Atlas Wall CI Board

Today's high-performance buildings require a number of enclosure features.



Atlas EnergyShield® PRO2 over steel framing clad with Brick veneer

First, structures designed for performance should be wrapped in a continuous layer of high R-value CI. They also need a drainage plane behind the cladding – a flat surface with air space to allow water drainage down its face for water that leaks past the cladding.

A water-resistive barrier (WRB) is also essential, in addition to an air barrier which protects against unwanted air leakage and the moisture it brings. Last, since the CI is a combustible material, for type I-IV non-combustible construction, the wall rigid foam boards must meet the ASTM E84 Class A requirements: Flame Spread Index <25 and a Smoke Development Index <450, and the assembly must have passed NFPA 285.

With decades of proven performance, Atlas polyiso technology is a versatile, effective barrier for thermal control, a WRB, and a drainage plane. It's available in Class A or Class B wall board products which can also serve as an air barrier material when part of a complete air barrier system. To meet energy codes, including IECC 2012, and ensure the best building performance, incorporate Atlas Wall CI Boards for both continuous thermal control and as an effective, protective, water-resistive layer.



Fire Rated ASTM E84 and NFPA 285 Tested

Simplify Design, Multiply Performance

Specify a single CI Board product to fulfill a number of design, code, and efficiency requirements.

For Thermal Control

Atlas Wall CI Boards contain a polyiso core, the best affordable material for achieving higher effective R-values with minimal material thickness. The thinner boards take up less space than other rigid foam insulations for the same R-value and allow the cladding to be installed closer to the backup wall assembly, increasing rigidity.

For Water And Moisture Barriers

Atlas Wall CI Boards are code approved as an effective (WRB) water-resistive barrier assembly. Board joints must be properly taped and sealed into rough opening flashings, roof assemblies, and below grade. Atlas foil facers are compatible with most standard joint fillers, sealants, and adhesives.

For A Drainage Plane

Connected to flashings and sealed wall penetrations, polyiso drainage planes can be constructed by sealing the board joints to create a continuous, drainable surface. Any water that gets past the cladding can drain down and out through appropriate flashing. With enough depth behind the cladding, the gap can also allow drying of the drainage space.

As Part Of An Air Barrier System

All Atlas boards have passed the ASTM E2178 requirement for an air barrier material and can be part of a properly detailed and sealed air barrier assembly. Joints are taped or sealed with proper flashing and sealants at rough openings, roof-wall intersections, and below grade connections, to provide more protection from air infiltration.

For Vapor Control

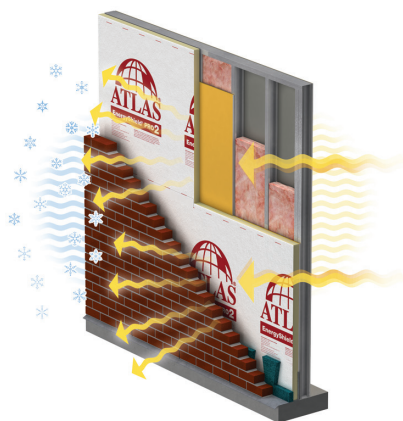
Atlas Wall CI foil-faced boards are semi-impermeable vapor retarders (Class II with less than 1.0 perm but greater than 0.1 perm). Depending upon the project's geographic location, the appropriate thickness of exterior CI can play an integral role in the vapor control strategy by keeping the wall cavity sufficiently warm, eliminating thermal bridging, and promoting vapor diffusion for drying over time.

As An Insulating Sheathing Material

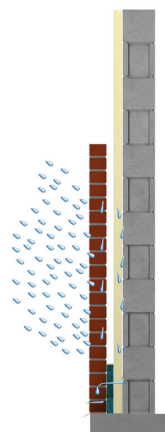
Atlas Wall CI Boards can be installed directly over framing members. It takes up less space in the wall compared to other foam insulation boards, thanks to its higher effective R-value per inch.

For Fire-Rated Wall

Some Atlas Wall CI Boards are Class A fire-rated thermoset materials and are approved as part of wall assemblies per NFPA 285 and NFPA 286, and are approved components in UL Listed hourly-rated wall assemblies. In fire testing, Polyiso chars in place and doesn't melt or drip like other foam plastics, therefore (or consequently), mineral wool fire safe-ing at window headers is not required as with other insulation types, such as XPS.



Thermal Control



Drainage Plane and WRB



Sheathing

For Type I-V Construction



EnergyShield® PRO

- **ASTM C1289, Type I, Class 1**
- Embossed white, acrylic-coated foil facer on front
- Reflective foil on back
- Meets the commercial wall requirements in IBC 2012 for ASTM E84 Flame Spread Index <25, Smoke Developed Index <450
- NFPA 285 approvals as required in IBC 2012 for commercial walls
- Types I-V commercial as well as residential applications

EnergyShield® PRO2

- **ASTM C1289, Type I, Class 2**
- Glass fiber reinforced polyiso core
- Embossed white, acrylic-coated foil facer on front
- Reflective foil on back
- Meets the commercial wall requirements in IBC 2012 for ASTM E84 Flame Spread Index <25, Smoke Developed Index <450
- NFPA 285 approvals as required in IBC 2012 for commercial walls
- Types I-V commercial as well as residential applications

Design professionals with continuous insulation requirements for Types I-V construction can design wall assemblies using the Atlas PRO series. Designs for Type V construction specifically, or wood framed light commercial, can also specify EnergyShield® and Rboard® products.

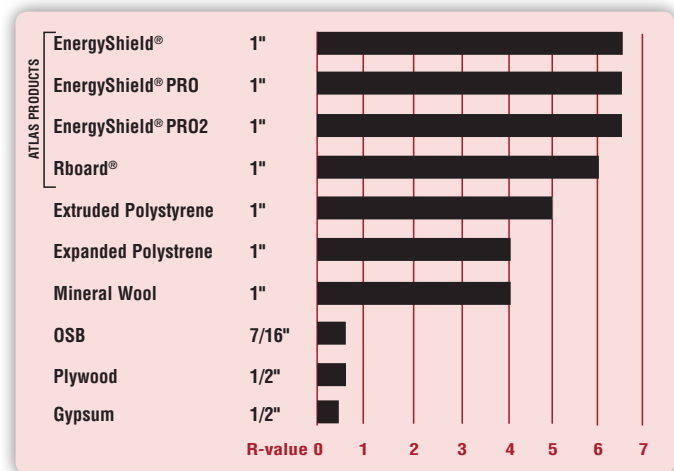
The polyiso board selections available for Types I-V construction are based on standard fire testing approvals ASTM E84 < 25 Flame Spread Index and < 450 Smoke Density Index as well as the NFPA 285 assembly test. ASTM E84 evaluates the rigid foam board on its own at ½" through 4" thickness for flame spread and smoke density. The NFPA 285 assembly test evaluates the polyiso board product with a complete wall assembly.

THERMAL VALUES:

R-Value ¹	Nominal Board Thickness ²
5.0	0.75"
6.5	1.0"
7.5	1.2"
9.8	1.5"
10.5	1.6"
13.1	2.0"
16.0	2.5"
19.7	3.0"
20.2	3.1"

¹ Conditioned thermal values were determined by ASTM Test Method C518 at 75° mean temperature. Test specimens were conditioned in accordance with procedures outlined in ASTM C1289, Section 11.1.2.1

² "R" means resistance to heat flow. The higher the R-value, the greater the insulating power.



*See codes for exceptions.

For Type V Construction and 1 & 2 Family Residential



EnergyShield®

- Non-reflective red acrylic coated foil facer on one side and reflective foil facer on the other
- ASTM E84 Flame Spread Index <75, Smoke Development Index <450



Rboard®

- Durable non-reflective coated glass-mat facer on front and back, plain on one side, logos on the other
- Class III vapor retarder; higher vapor permeability than foil facers
- Inorganic/paperless facers
- ASTM E84 Flame Spread Index <75, Smoke Development Index <450

THERMAL VALUES:

R-Value ¹	Nominal Board Thickness ²
3.3	0.5"
5.0	0.75"
6.5	1.0"
9.8	1.5"
10.5	1.6"
13.1	2.0"
19.7	3.0"

¹ Conditioned thermal values were determined by ASTM Test Method C518 at 75° mean temperature. Test specimens were conditioned in accordance with procedures outlined in ASTM C1289, Section 11.1.2.1

² "R" means resistance to heat flow. The higher the R-value, the greater the insulating power.

THERMAL VALUES:

R-Value ¹	Nominal Board Thickness ²
3.0	0.5"
4.5	0.75"
6.0	1.0"
9.0	1.5"
12.1	2.0"
15.3	2.5"
18.5	3.0"
21.7	3.5"

¹ Conditioned thermal values were determined by ASTM Test Method C518 at 75° mean temperature. Test specimens were conditioned in accordance with procedures outlined in ASTM C1289, Section 11.1.2.1

² "R" means resistance to heat flow. The higher the R-value, the greater the insulating power.

For Type V construction, all four boards can be used as all are tested to meet ASTM E84 with a Flame Spread Index of at least <75. EnergyShield® and Rboard® are the more economical choice and meet ASTM E84 Class B for Flame Spread Index of <75.

Why Use Glass-Mat Facers?

Rboard® uses coated glass-mat reinforced facers for added durability and higher permeability.

Coated glass-mat facers are also widely accepted in the building industry, with many materials tested to work with them – including spray-applied air barriers, peel-and-stick membranes, and more.

To ensure more complete quality control, Atlas coated glass-mat facers are produced by Atlas Web Technologies®, a leader in specialty facers and paper coatings.

Typical Type I-V Construction System Example Illustrations



Metal Panels Over Steel Framing

Use Atlas polyiso* as a continuous insulation (CI) layer over the steel studs with furring strips or sub girts over the insulation boards to attach the metal panels. This provides an air gap for a capillary break and a WRB for moisture control, whether the panels have caulked, gasketed or open (rainscreen) joints (if foam is covered).

Brick Over CMU

A layer of polyiso* provides excellent protection from the weather, since air and moisture easily penetrate brick veneers, as well as fire safety and thermal performance. Atlas products can be cut or perforated to 16" or 24" widths.



Re-siding (or siding) Over Wood Framing

When re-siding a structure, polyiso* CI board can be placed underneath a new layer of siding by being installed over the existing layer of siding or other cladding and furred out, to receive the new siding. Polyiso* can also be used with exterior products such as fiber cement siding, wood siding, stucco, metal, block, and brick.

Stucco Over Steel Framing

For stucco and similar coatings over steel studs, Atlas polyiso* provides a sturdy, durable substrate for troweled-on materials. Sealed and flashed properly, Atlas polyiso* can also be a WRB to block and drain moisture migration, a key issue for stucco and other absorbent claddings such as manufactured stone.



Brick Over Wood Framing

For brick anchored over wood studs, this wall assembly can manage water that may penetrate the brick masonry. A clear air gap/capillary break with taped or sealed Atlas Polyiso* and flashing allows water to exit and can serve as an effective drainage plane and WRB.

Stucco Over Wood Framing

Use Atlas polyiso* alone or over OSB or gypsum board sheathing. Provide a ventilated air gap/capillary break between the stucco and the sheathing, via at least two layers of WRBs under the stucco or one layer plus the Atlas polyiso*, taped and sealed per appropriate installation instructions to create an effective WRB.



* Use appropriate Atlas Wall CI Board for your application.

Illustrations are intended for general guidelines only. Other applications possible.

Using Atlas Wall CI Board Insulation

Project Teams Consider Important Key Criteria When Specifying Exterior Continuous Insulation

Atlas Wall CI Board is an opportunity to fulfill performance and compliance objectives and maximize design flexibility.

1. Products are formulated for specific construction types.

- a. **Types I-IV:** EnergyShield® PRO is acceptable for most applications. EnergyShield® PRO2 is used when the specifier requires small, chopped glass fibers in the insulation material core as it may enhance fire resistance.
- b. **Type V construction and 1 or 2 family dwellings:** Any of EnergyShield®, Rboard®, EnergyShield PRO®, or EnergyShield PRO2® is acceptable for these applications. EnergyShield® and Rboard® are often favored due to cost efficiency.

2. For Type I-IV construction, verify the appropriate fire requirements.

- a. **ASTM E84** "tunnel test" for a code required Class A rating of <25 Flame Spread Index as well as <450 Smoke Development Index.
- b. **NFPA 285** full wall assembly standard fire test method. Check listing of approved assemblies. See Atlas NFPA 285 wall assembly sheet or Atlas TER 1306-03.

3. Additional attributes may be specified for use in the appropriate application.

- a. **Water Resistive Barrier (WRB)** – confirm design meets Atlas ESR-1375.
- b. **Drainage plane** - properly taped joints and connections create viable drainage, which allows water to shed downward on the face of the boards, exiting the wall assembly at an appropriate end point, such as the bottom of the wall panel or below windows and doors. Flash all rough openings and water exit points.
- c. **Air Barrier** – confirm design incorporates a continuous air barrier assembly as boards are connected to rough openings, service openings, roofs and below grade. Sheathing and flashing tapes are the most common method to connect, although other methods are available. Contact your preferred tape or sealant manufacturer for specific compatibility.
- d. Review Atlas installation instructions for the product and application chosen.

4. Review design in context of water vapor flow.

Results are dependent upon many variables including location of building, use of building, thickness of insulation chosen to meet expected energy benefits and other parts of the wall assembly, which may affect the water vapor flow. TER (Technical Engineering Report) No. 1308-11 is available on the Atlas website to address this issue. Atlas highly recommends a dew point calculation of the proposed wall assembly to determine the needed insulation thickness to mitigate any condensation potential.

5. For accessories and fasteners.

Confirm suitability and compatibility with chosen Atlas Wall CI Board. Atlas facers are compatible with most standard joint fillers, sealants, adhesives, and fasteners.

6. Use code accepted shear or corner bracing in all applications, with special attention for Type V and residential construction.

7. Detail project according to the design intent of the wall assembly.

Energy Efficient, Sustainable, Resilient Wall Systems That Exceed New Codes

With one product choice, buildings receive potent fire-tested insulation, a proven water-resistive barrier (WRB), an effective air barrier material, and the means to achieve energy efficiency targets which can contribute toward green building status such as LEED® or Green Globes certification.

THERMAL



High Energy Efficiency

- Reduced thermal bridging.
- Atlas polyiso offers higher R-values than the same thickness of XPS, EPS, and rock wool.
- Atlas polyiso's smaller, more consistent cell structure than either XPS or EPS helps ensure long-term high R-values.
- Thinner boards allow for a more efficient and more rigid wall assembly, positioning cladding closer to the back-up wall assembly/structure.

FIRE



NFPA 285 Approved Assemblies

- Atlas polyiso boards will char during a fire – unlike thermoplastic foams, which melt and drip, potentially causing dangerous conditions.
- Unlike rigid XPS continuous insulation, Atlas EnergyShield® PRO and PRO2 do not require mineral wool above window headers.
- Meet NFPA 285 Tested Assemblies using Atlas Wall Board CI. For details on approved assemblies for various backup and cladding types, visit www.AtlasWallCI.com or contact a local Atlas representative.

WATER



Water Resistance Built In

- The foil facers are an integral water-resistant barrier (WRB), listed by the ICC Evaluation Service (ICC-ESR-1375), when joints are properly taped and sealed.
- Absorbs less than 1% water (by volume) when immersed.
- Seals the building like a housewrap or other WRB, but with the added value of insulation.
- Reduces costs and installation time – no need for the extra trip around the building to put in a separate WRB. That means lower costs and installation of just one product.
- Secondary drainage plane and barrier when properly taped or sealed at board joints, flashings, roof assemblies, and to below grade construction.
- Minimizes stud and fastener “ghosting” caused by condensation on exterior cladding.
- Neither foam nor facers are a food source for mold.

AIR



Air Flow Control

- Foil-faced polyiso (>1/2" thick) is prescriptively defined as an air barrier material by IECC and ASHRAE 90.1-2010.
- Improves energy efficiency by limiting air infiltration and exfiltration.
- Protects interiors and wall cavities from moisture-laden air – a cause of condensation, rot, and rust.
- Air barriers are required in many areas of North America to stem energy losses and avert moisture damage.

VAPOR



Protection for the Long Term

- Polyiso protects the building by minimizing water vapor entry through the exterior wall.
- As CI, Atlas polyiso helps control interior condensation by moderating temperatures inside the stud cavity or back-up wall assembly, and controlling dew point location.

RADIANT



Energy Efficient use of Facers

- Atlas Wall CI Board with foil facer can act as reflective insulation (per ASTM C1371).
- Reflective surface emissivity of non-coated facers is less than 0.1 on side facing enclosed air space.
- Helps control heat flow from radiant energy, in addition to the insulation benefit.

ENVIRONMENT



Sustainable, Responsible Manufacturing Processes And Use

- Helps earn LEED credits and meet IgCC or ASHRAE 189.1-2010, as well as state and local green building laws, such as California's CALGreen.
- Polyiso uses fewer resources for highest insulation levels, thanks to its high R-value per inch.
- HCFC-free, CFC-free, HFC-free blowing agent technology.
- Zero ozone depletion potential (ODP) and virtually no global warming potential (GWP).
- Available within 500 miles of most project sites in North America.
- As CI, Atlas polyiso reduces thermal bridging and boosts R-value helping cut HVAC energy and carbon emissions.
- Boards with higher R-values and less thickness mean that less transport and freights are required vs. mineral wool, XPS, or EPS insulation.
- Uniform Atlas production methods ensure quality control for more precise applications and more consistent thermal performance than field-applied spray foams. Potentially less waste as well if spray foam is shaved.
- Atlas Wall CI Boards are stable, strong, water resistant, and can be reused.
- Polyiso lifecycle assessment (LCA) indicates that polyiso energy savings and reduced global warming potential (GWP) during use outweigh energy and GWP emissions associated with making, transporting, installing and managing polyiso at end-of-life. To learn more visit: <http://www.greenzone.com/general.php?section url=29>
- Effective use of CI can support a reduction in HVAC equipment size to heat/cool the same size building.

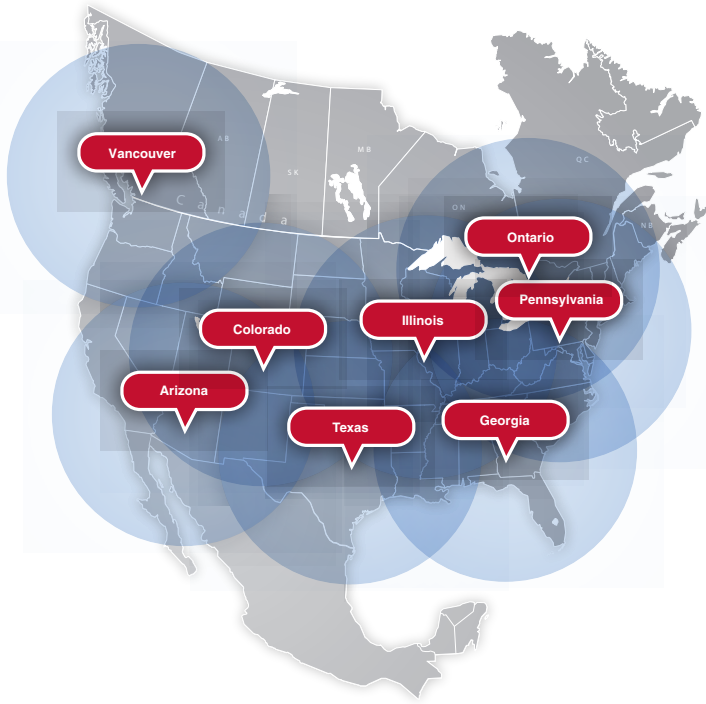
About Atlas

Atlas Wall CI Board products are designed and manufactured in the United States and Canada by Atlas Roofing Corporation for the ultimate utility in modern building envelopes. For 30-plus years, Atlas Roofing Corporation has served as an innovative, customer-oriented manufacturer of residential and commercial building materials. Atlas Roofing Corporation promotes 18 state-of-the-art manufacturing plants in North America, with eight dedicated to the Atlas Wall CI Board product family.

Atlas International Polyiso Manufacturing

Coverage to support LEED and local building needs.

Most U.S. and Canada locations can help earn LEED credit for local/regional materials, with <500 mile distance from project to production facility.



Why Atlas Wall CI Board?

Leading performance compared with Extruded Polystyrene (XPS), Expanded Polystyrene (EPS), and rock wool. True CI with no thermal bridging.

Air and moisture barriers that are field proven, code compliant and material tested. Energy efficiency levels to match IECC and current building codes, as well as ASHRAE 90.1, required per LEED.

Meets fire ratings and codes with low flame/smoke propagation, and a preferred response to fire over polystyrenes. It's stable, durable, non-corrosive, and compatible with solvents. Atlas Wall CI Board is lightweight and easy to work with standard tools and available fasteners, and can be installed in almost any temperature.

Atlas provides a 15-year thermal performance warranty – for CI that lasts.

LOCAL Production and Support: Atlas has the largest production footprint of any polyiso manufacturer for quick access to the products you need.

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MADE IN CANADA

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