

Washington State Energy Code

Why Continuous Insulation (CI) Is Reshaping Wall Design

WASHINGTON STATE ENERGY CODE

WHY CONTINUOUS INSULATION (CI) IS RESHAPING WALL DESIGN

WASHINGTON IS LEADING THE NATION

Washington has adopted one of the most progressive energy codes in the United States, reflecting an ongoing shift toward higher-performing building envelopes, lower operational energy use, and improved long-term building durability.

The current Washington State Energy Code (effective March 15, 2024) is based on the 2021 International Energy Conservation Code (IECC) with state amendments.

For many commercial and residential wall assemblies, the code emphasizes **continuous insulation (CI)**, improved thermal continuity, and reduced thermal bridging as part of overall envelope performance.





HIGHER PERFORMANCE

Stronger building envelopes deliver better comfort and durability.



LOWER ENERGY USE

Reduce heating and cooling demand and lower operating costs.



LOWER CARBON

Improved efficiency means lower carbon emissions over the life of the building.



GREATER RESILIENCE

High-performance envelopes are more durable and better prepared for the future.



BETTER FOR PEOPLE

Improved comfort, healthier indoor environments, and quieter spaces.

“ THE CODE IS EVOLVING.

THE GOAL IS CLEAR:
**BUILD BETTER ENVELOPES.
BUILD A BETTER FUTURE.**

WASHINGTON STATE ENERGY CODE AT A GLANCE

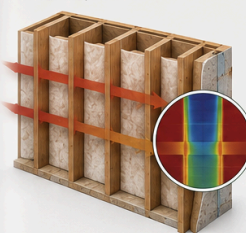
-  **Effective Date:** March 15, 2024
-  **Based on:** 2021 IECC with Washington Amendments
-  **Applies To:** Residential & Commercial Buildings
-  **Focus Areas:** Continuous Insulation, Air Sealing, Thermal Continuity, and Whole-Building Performance

CONTINUOUS INSULATION (CI): THE CODE DRIVERS

CI creates an uninterrupted layer of insulation on the exterior of the building envelope, reducing thermal bridging and improving overall wall performance.

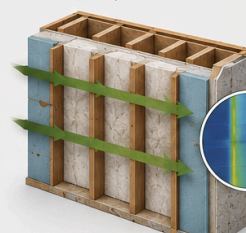
WITHOUT CONTINUOUS INSULATION

Thermal bridges at framing members reduce overall performance.



WITH CONTINUOUS INSULATION

Uninterrupted insulation layer improves thermal continuity.



WASHINGTON PRESCRIPTIVE CI EXAMPLES*

Above-grade Wall Assemblies
Climate Zone 5 & Marine 4

WALL ASSEMBLY TYPE	PRESCRIPTIVE OPTIONS (Example Combinations)
 Steel-Framed Walls	• R-13 + R-10ci • R-20 + R-9ci • Equivalent options
 Wood-Framed Walls	• R-13 + R-7.5ci • R-20 + R-3.8ci • Higher-performing alternatives

*Requirements vary by occupancy, wall type, and compliance pathway. Always verify the adopted code edition and project-specific requirements with the Authority Having Jurisdiction (AHJ).

WASHINGTON LEADS THE WAY

A commitment to energy efficiency, sustainability, and a better built environment.



WASHINGTON STATE ENERGY CODE

One of the most progressive energy codes in the U.S.

- ✓ Higher Efficiency Requirements
- ✓ Focus on Building Envelope Performance
- ✓ Supports Innovation and Integrated Systems
- ✓ A Healthier, More Resilient Future

THE SHIFT IS CLEAR.

Energy codes are moving beyond individual materials and toward whole-building performance. Wall systems that deliver thermal continuity, moisture control, and durability will lead the future of high-performance construction in Washington.

WASHINGTON'S ENERGY CODE IS SHAPING A STRONGER FUTURE.

BIO FIBER IS BUILDING FOR IT.



Washington Is Leading the Nation

Washington has adopted one of the most progressive energy codes in the United States, reflecting an ongoing shift toward higher-performing building envelopes, lower operational energy use, and improved long-term building durability.

The current Washington State Energy Code (effective March 15, 2024) is based on the **2021 International Energy Conservation Code (IECC)** with state amendments. For many commercial and residential wall assemblies, the code emphasizes continuous insulation (CI), improved thermal continuity, and reduced thermal bridging as part of overall envelope performance.

Why Continuous Insulation Exists

Traditional framed walls create thermal bridges wherever framing interrupts insulation.

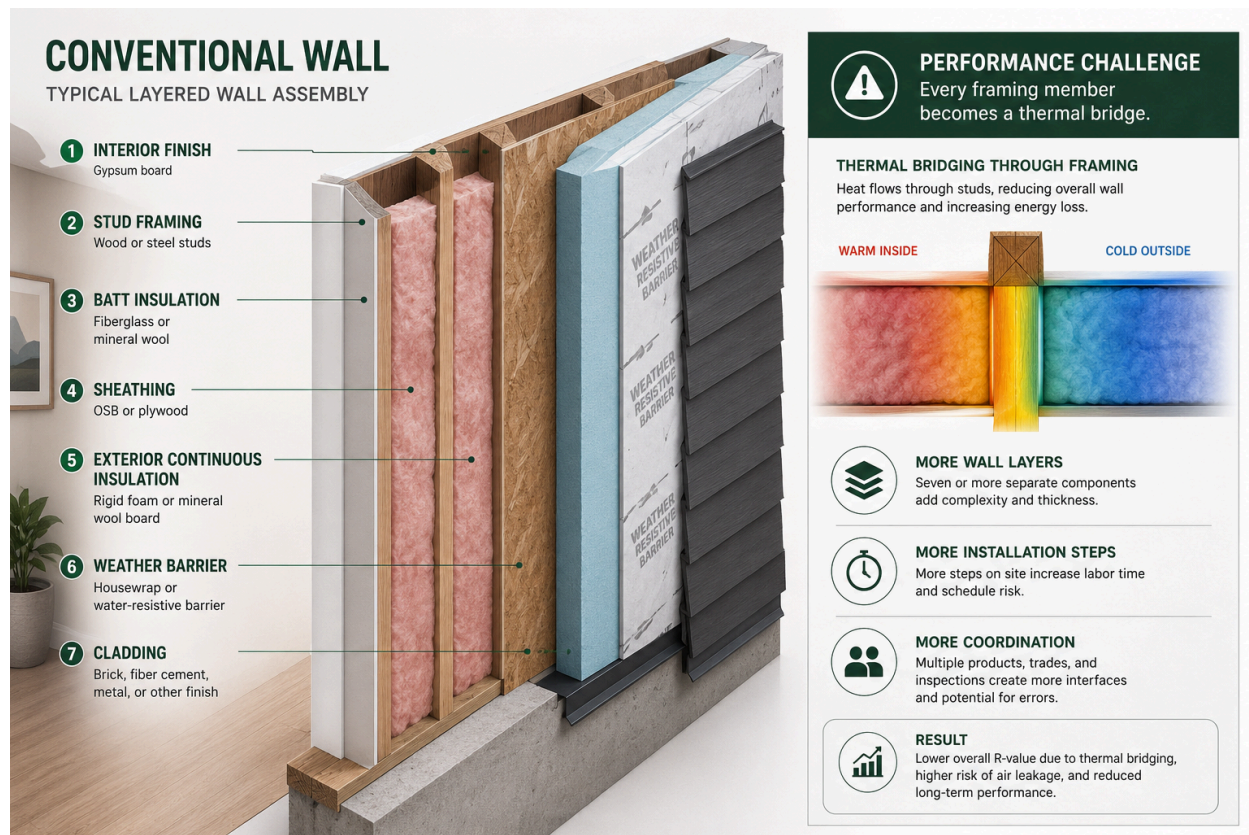
Heat naturally follows the path of least resistance.

Even well-insulated cavity walls lose performance through:

- Wood framing
- Steel studs
- Rim joists
- Floor lines
- Headers
- Window openings
- Structural connections

Continuous insulation was introduced to reduce these thermal bridges by creating an uninterrupted insulating layer around the building envelope.

Conventional Wall



Example Prescriptive Options*

Steel-Framed Walls R-13 + R-10ci, R-20 + R-9ci, or equivalent options

Wood-Framed Walls R-13 + R-7.5ci, R-20 + R-3.8ci, or higher-performing alternatives

*Actual requirements vary by occupancy, wall type, and compliance pathway. Designers should always verify the adopted code edition and project-specific requirements.

BIO FIBER INSIGHT

Beyond Adding Another Layer

Most projects respond to continuous insulation requirements by adding another product to the outside of an already complex wall.

Bio Fiber Industries takes a different approach.

Our long-term design philosophy is not simply to add continuous insulation—it is to rethink the wall assembly itself.

Rather than viewing insulation, air management, moisture management, and finishes as independent systems, Bio Fiber develops integrated wall assemblies intended to deliver coordinated building-envelope performance.

That distinction matters because modern energy codes increasingly evaluate **how the wall performs as a complete assembly**, not simply the nominal R-value of an individual insulation product.

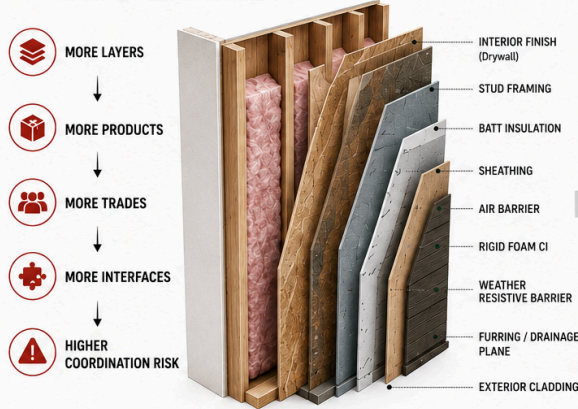
DESIGN FEATURE

THE EVOLUTION OF WALL DESIGN

BUILDING SMARTER. BUILDING BETTER.

YESTERDAY

TRADITIONAL LAYERED APPROACH

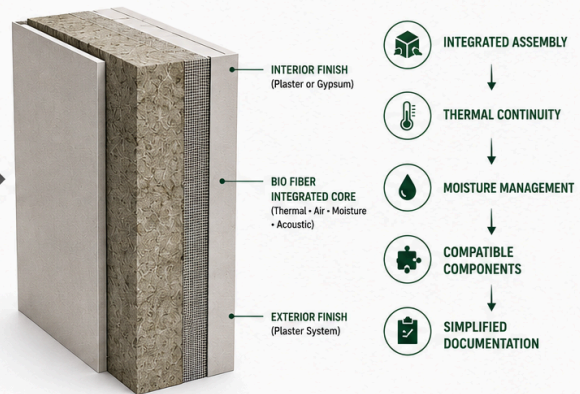


RESULT

More complexity. More handoffs. More potential for gaps, errors, and performance issues.

TOMORROW

INTEGRATED SYSTEMS APPROACH



RESULT

Fewer layers. Fewer interfaces. Better performance. Easier coordination. Stronger, healthier buildings.



LOWER THERMAL BRIDGING



IMPROVED ENERGY PERFORMANCE



SIMPLIFIED CONSTRUCTION WORKFLOW



REDUCED RISK & REWORK



BETTER BUILDINGS FOR THE FUTURE

TECHNICAL NOTE

Continuous Insulation Is One Compliance Strategy

Continuous insulation is a widely used prescriptive approach, but it is **not the only path to compliance**.

Commercial and multifamily projects may also demonstrate compliance through:

- Whole-building energy modeling
- Assembly U-factor calculations
- ASHRAE 90.1 compliance
- Other approved performance pathways accepted by the Authority Having Jurisdiction (AHJ)

This flexibility creates opportunities for innovative wall systems, provided the overall building performance can be demonstrated with appropriate documentation.

BIO FIBER PERSPECTIVE

Building for the Intent of the Code

Energy codes continue to evolve from prescribing individual materials toward evaluating the performance of complete building systems.

Bio Fiber Industries is developing wall systems around that same philosophy:

- Reduce thermal bridging.
- Improve thermal continuity.
- Support healthier indoor environments.
- Simplify wall assemblies.
- Improve long-term durability.
- Provide coordinated system documentation.
- Support domestic manufacturing and resilient supply chains.

Our objective is not simply to meet today's energy code—it is to help architects, builders, and developers design for the performance expectations of tomorrow.
