



**TIMBERHP**

by GO LAB

INSULATE BETTER. LIVE BETTER.

# Introducing TimberHP

Wood Fiber Insulation made in America



## Carbon Storing

The only insulation on the market to do this



## High Performance

Manages air, moisture, conductivity, and sound



## Highly Recyclable

When you cut it, you get sawdust



## Nontoxic, Safe

Leading to healthy indoor air quality



## Class A/B Flame Spread

Offers a high degree of fire protection



**TIMBERHP**



# First North American Production Facility— Madison, Maine



[Click Here: TimberHP Mission Video](#)



**Joshua Henry**  
CEO & Co-Founder

PhD in Physical Chemistry (Cornell University), NSF International Fellow (2005-2007), faculty member (Bates College and University of Maine), research focus: sustainable materials, renewable energy, thermodynamics

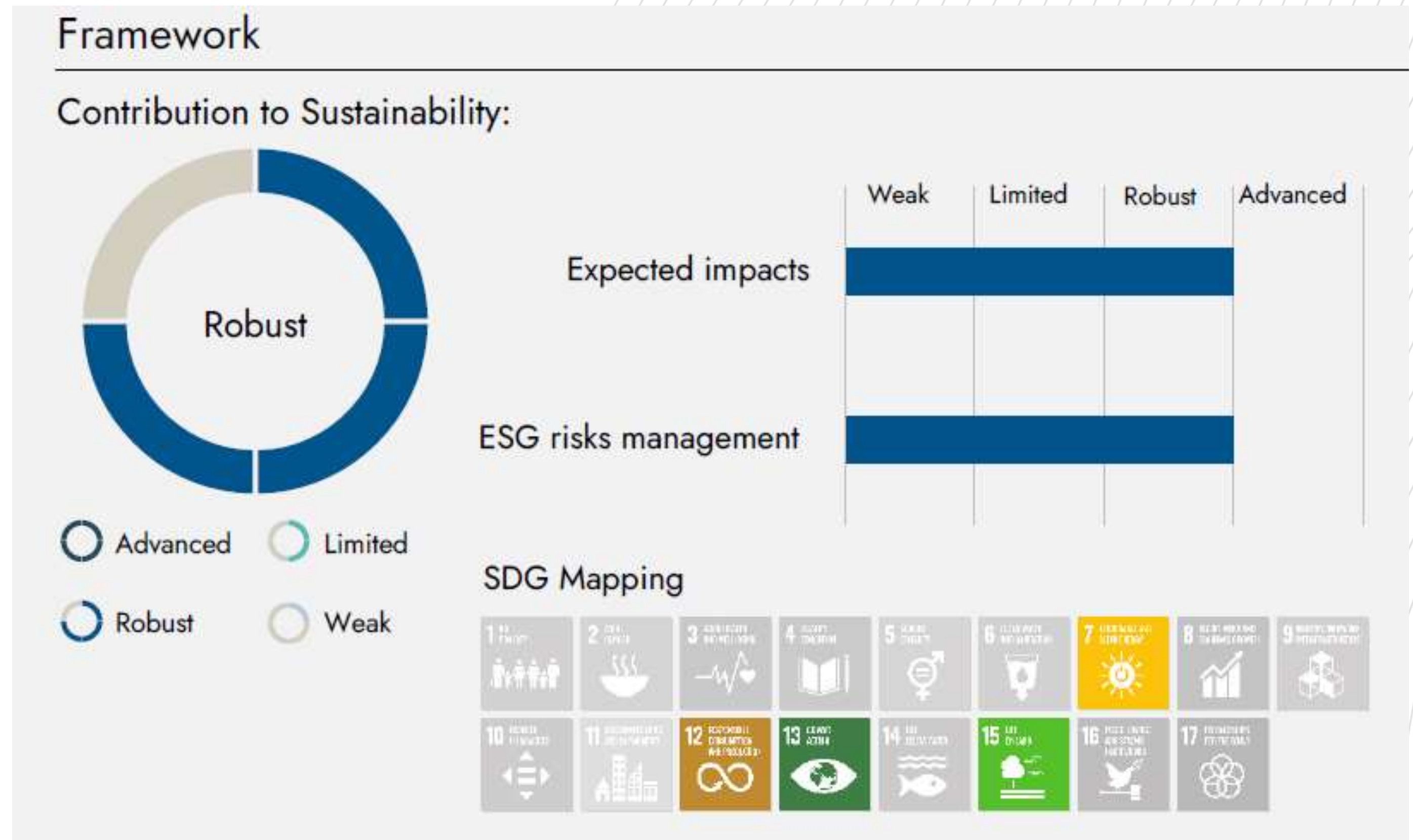


**Matthew O'Malia**  
Vice-President & Co-Founder

An award-winning architect with a nationwide reputation for innovation and expertise in design. A leader in the Passive House movement in North America and named to Architect Magazine's Architect 50 List in 2018

# First North American Production Facility— Madison, Maine

- \$130 MM financing completed using equity and \$85 MM in tax exempt green bonds
- V.E designated Robust in our contribution to sustainability
- Circular Economy—re-uptake of industrial waste
- Energy Efficiency—insulation manufacturing
- Climate Change Mitigation—avoidance of GHG emissions
- Promote Sustainable Forests



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# First North American Production Facility— Madison, Maine

- **Equity investment** from forest products manufacturers, loggers, LBM retailers, contractors, architects, and impact investors
- **Construction underway** with Cianbro as GC
- **\$150 MM investment** in Maine
- **130 direct jobs, 16x indirect jobs**
- **\$120 MM Annual Sales**



# Project Team



## Martin Troy

Director of Electrical Engineering

More than 40 years of experience managing, designing, and operating complex mill energy and water systems. Prior to GO Lab, he was in a similar role at the UPM Madison Mill. He knows the systems of the mill better than anyone



## Rick Veinotte

Chief Operating Officer

Over 25 years' experience developing, managing construction of, and operating complex wood processing equipment. He is a registered mechanical engineer. For most of his career he was employed at the Madison Mill, supervising all major renovations and equipment installations



## Joseph Clark

Director of Maintenance

Extensive maintenance management experience with paper machines, auxiliary equipment and power boiler operations and maintenance. He is a veteran of the UPM Madison mill, having overseen maintenance there for many years



## Steve Thibert

Plant Manager

Chemical engineer with 30 years of experience in the forest products industry with two decades of experience leading production teams of various sizes in Maine and Alabama

# Madison Mill:



[Batt Line Video](#)

[Fill Line Video](#)

[Board Line Video](#)



# TIMBERHP

Thermal and Acoustic Solutions for Above-Grade Applications

*Wood Fiber Insulation  
Made in America*

**Coming 2023**

## TimberFill

Available Q1, 2023



## TimberBatt

Available Q2, 2023



## TimberBoard

Available Q3, 2023



INSULATE BETTER.LIVE BETTER™



# EUROPEAN SUPPLIERS OF WOOD FIBER INSULATION



Freight and high production costs limit the sale of European wood fiber insulation in North America

# European wood fiber insulation market shows product potential in North America

- 15 manufacturing facilities in Europe with 5 more under construction
- Estimated \$800 m (~5% of total insulation market) for all three products (board, batt and loose fill)
- Freedonia forecast the European market will reach \$1 b in demand by the end of 2023
- Product is sold at a 20% premium in a market that is only 25% wood frame construction

## EUROPEAN SUPPLIERS OF WOOD FIBER INSULATION:



Freight costs combined with high production costs limit the sale of European wood fiber insulation in North America to select projects only where price is not a factor.

# Timing Makes the Difference

Made from clean, species-agnostic, softwood residuals; insulating wood fiber composites are a perfect fit for the US wood products manufacturing sector.

PROCESS:



LUMBER IS MILLED FROM LOGS



THE WASTE CHIPS ARE RECOVERED



FINELY GROUND



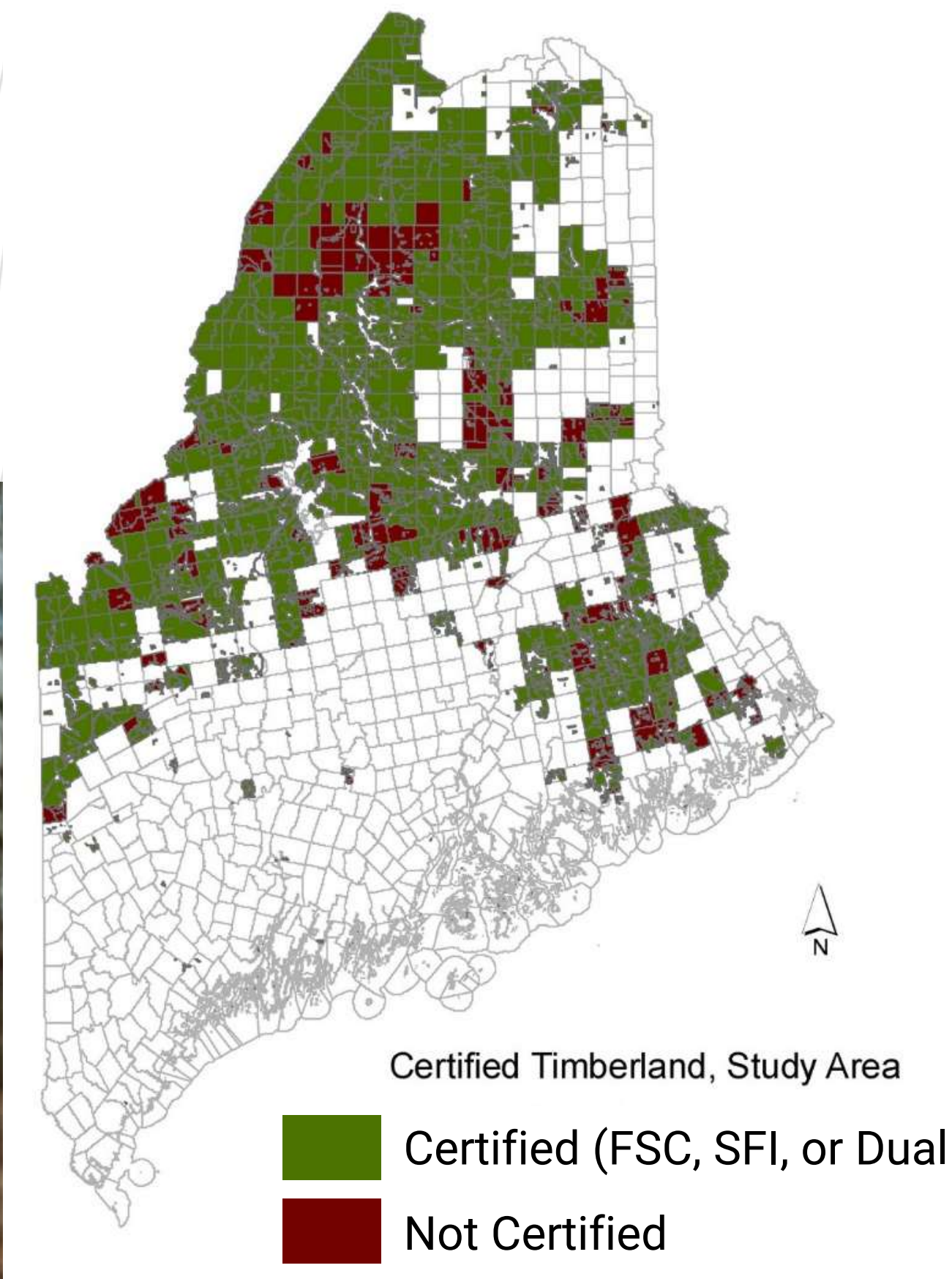
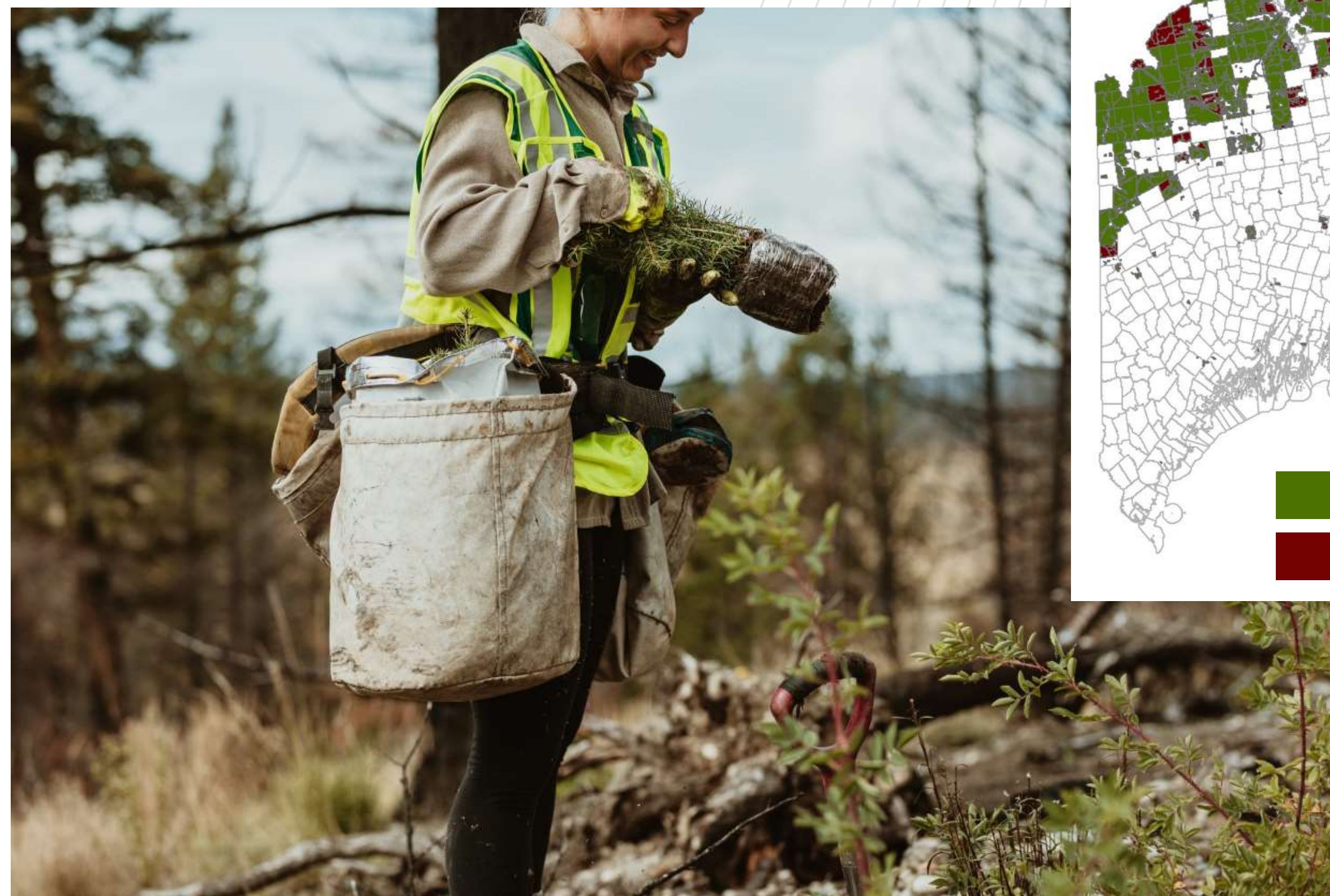
AND FORMED INTO INSULATION



# Maine Makes the Difference

Since 2014, Maine alone has lost markets for over 4 million tons of low-grade wood that would have otherwise supplied paper and biomass mills

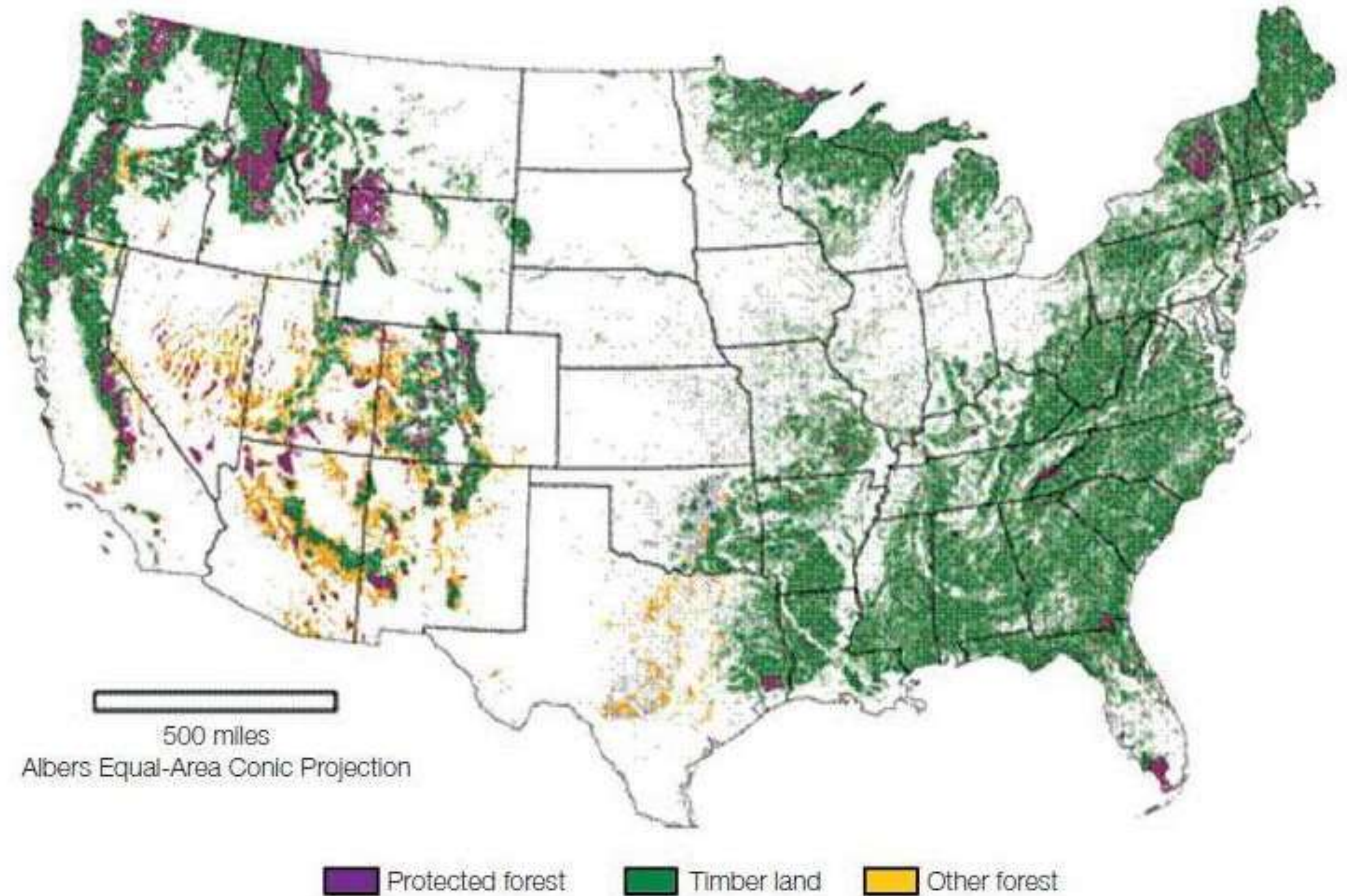
TimberHP is able to provide a new market for those chips, supporting foresters and loggers throughout Maine and beyond



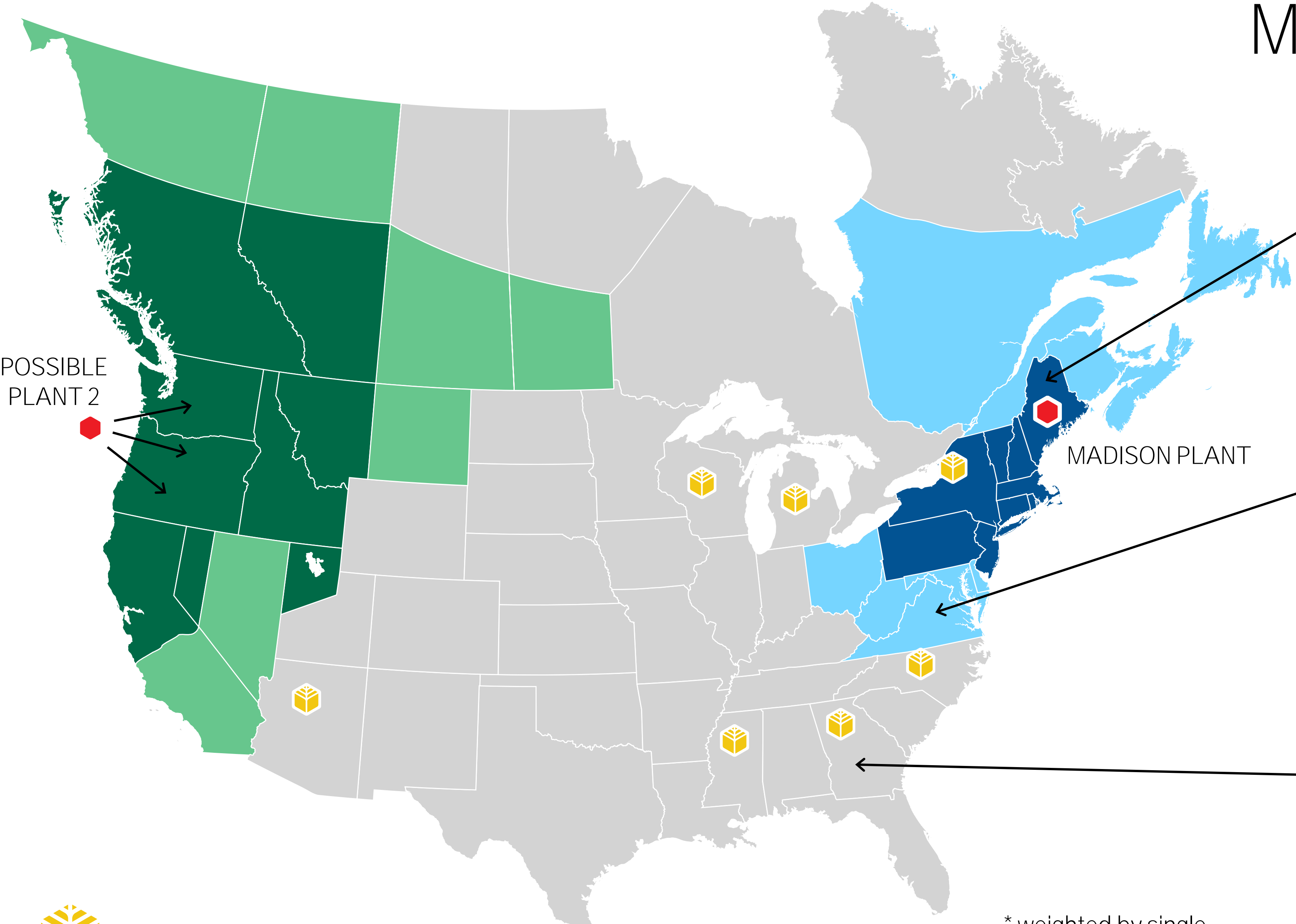


# Reviving Our Forest Economy

With the decline in paper production, the robust wood baskets of the US and Canada need new manufacturers who create high-demand products from sawmill residuals and low-value fiber.



# Madison Maine Facility Market Focus



## NORTHEAST (US CENSUS TRACT)

- Primary market for board, batt and loose fill
- Primary focus of marketing and sales budget
- Total estimated market size: 1.34 m ft<sup>2</sup>, \$634 m
- Average shipping distance: 420 miles\*

## EXTENDED ADDRESSABLE

- Some marketing and sales dollars focused on large metro areas (Washington DC, Montreal, Toronto, Cleveland)
- Total additional market: 1.352 m ft<sup>2</sup>, \$580 m
- Average shipping distance: 619 miles\*

## CONTINENTAL US

- Build modular manufacturing facilities over time to fully support national market
- Next plant-West Coast to bookend the nation
- 10+ plants over the next 10-15 years

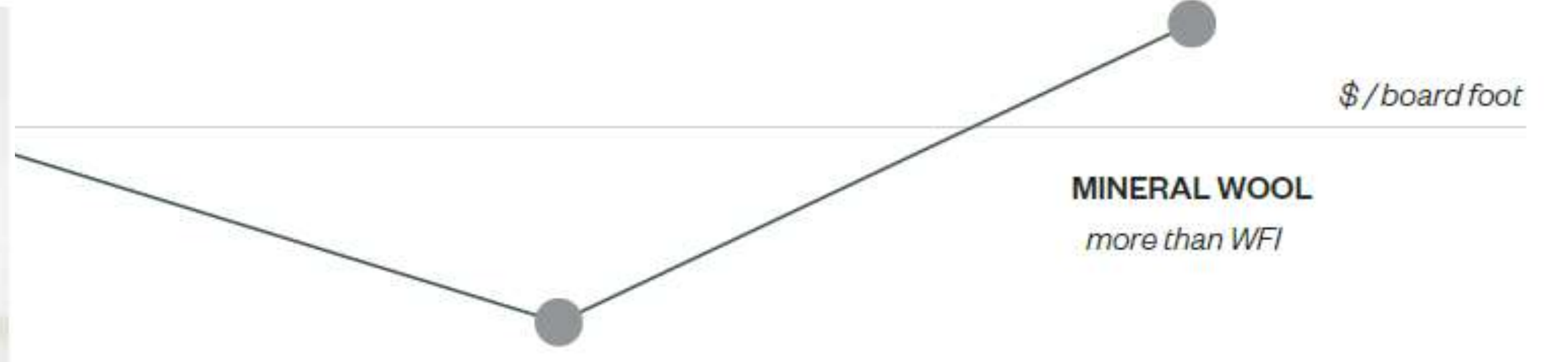
POSSIBLE PLANT 2

MADISON PLANT

\* weighted by single-family housing starts



# \*Wood Fiber Insulation: Price Comparison



\*Within Madison Target Market

# Market Position

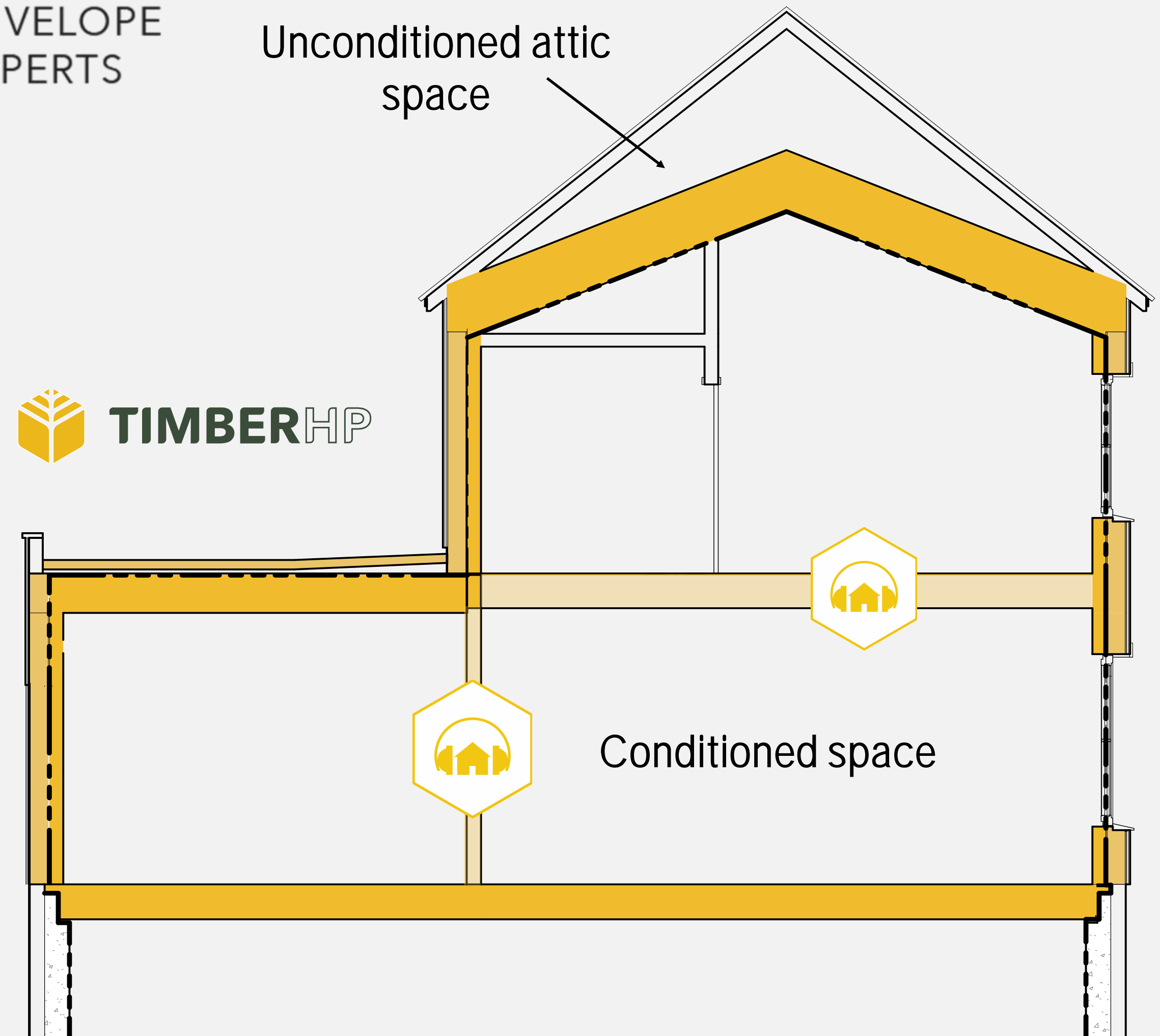


## Drop-In Replacement

- Affordable, low-risk replacement for foam, mineral wool, cellulose, fiberglass, and other traditional insulating products for above-grade assemblies
- Meet thermal and acoustic demands with the same product offering

## Comprehensive Above-Grade System

- Full-line of insulating products made from one material to address cavity, continuous, and attic blanket applications
- Prescriptive building envelope approach to create wind-tight, vapor-open assemblies





# TimberFill Insulation

## APPLICATIONS

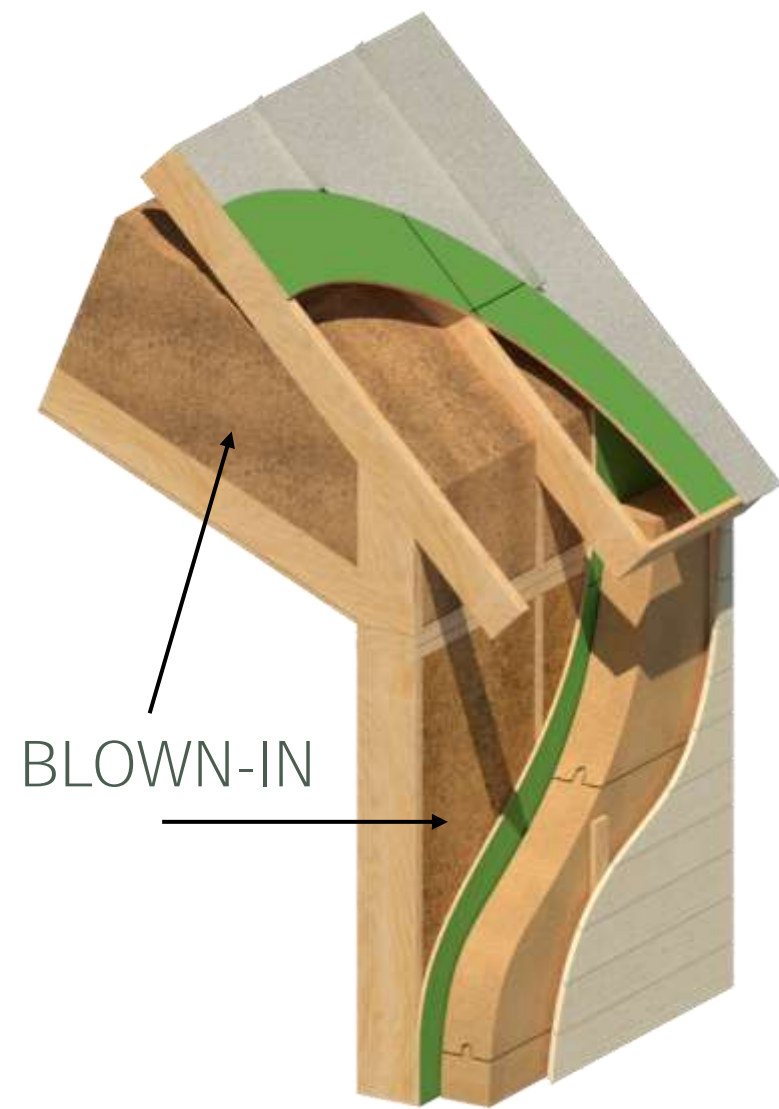
- Dense pack cavity insulation in stud walls and between rafters and joists
- Loose fill blanket insulation for attics

## COMPOSITION

- Softwood fiber fire treated with boric acid

## PRODUCT MERITS

- R-3.8/inch
- Achieve desired R-value with less volume compared to other blown-in options
- Shape and size of fibers prevent issues with settling, reducing voids and air pockets
- Boric acid full fiber penetration—Class A Flame Spread, mold/mildew and pest inhibitor
- Pure, consistent feedstock. Low dust, no toxins, free of printing ink, no foreign contaminants



R-3.8 / inch



Borate is more than a fire retardant; it inhibits mold and mildew growth and prevents pests.



# TimberBatt Insulation

## APPLICATIONS

- Thermal cavity insulation
- Acoustic insulation for interior spaces and demising walls

## COMPOSITION

- Softwood fiber, polyamide binding fiber, boric acid

## SIZING

- Wood and non-structural steel framing
- 16" and 24" OC
- 3"; 3.5"; 5.5"; 6"; 7.25"

## DISTINCTIVE PRODUCT MERITS

- R-4/inch, vapor open
- Flexible, semi-rigid. Most durable batt on the market
- No toxins and no harmful fibers
- Boric acid full fiber penetration—Class A Flame Spread, mold/mildew and pest inhibitor
- Low thermal conductivity and high heat capacity



R - 4 / inch



FRICION FIT BATT INSULATION



# TimberBoard Insulation



R-3.4 – 3.7 / inch

## APPLICATIONS

- Exterior continuous insulation
- Interior insulation of walls, floors, and ceilings

## COMPOSITION

- Softwood fiber, PMDI Adhesive, and Paraffin

## SIZING

- Thickness 1"-9.25" Width 2' & 4' Length 4' & 8'

## DISTINCTIVE PRODUCT MERITS

- Stable R-3.4 to 3.7/inch
- Hydrophobic and vapor open for superior performance
- High compressive strength
- Class B Flame Spread with no fire retardants
- Buffers changes in humidity and temperature



## CONTINUOUS BOARD INSULATION



R – 3.4 – 3.7 / inch



College of the Atlantic



Bulk moisture demonstration

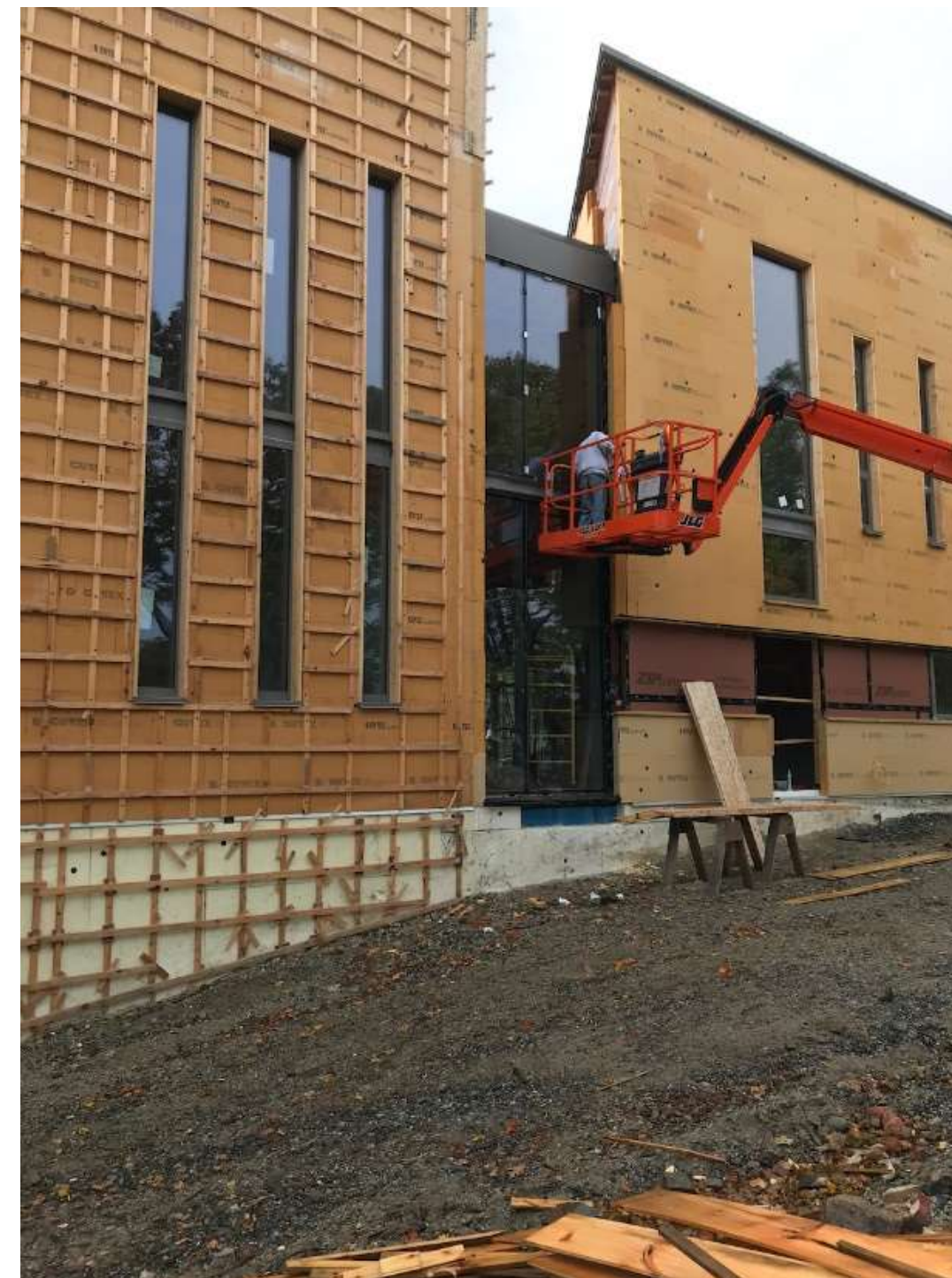




# Initial Product Offering

## Market Fit

- Code-compliant building envelope, thermal, and acoustic assemblies for residential new construction and remodeling
  - Single-family and multi-family
- Commercial and institutional
  - Buildings 4 stories or less
  - Mass timber, CLT, and MPP
  - FRT
- Factory-built solutions
  - Residential and commercial prefab
  - Panel, full-scale, modular designs
- Passive House, net zero, carbon negative, bio-based



# TIMBER + HP = High Performance Healthy Planet Healthy People



 High Performance

## Building envelope, thermal, and acoustic solutions

A comprehensive, above-grade product line to create wind-tight, vapor-open assemblies offering stable, long-term R-values, improved temperature stability, and premium sound protection



 Healthy Planet

## Recyclable, renewable, non-toxic, and carbon negative

Made from residual wood chips to maximize the use of our renewable forest resource. As a high-value insulator with a negative carbon footprint, reduces a building's global warming potential on day one and everyday it operates



 Healthy People

## Moisture managing, safe, and sound absorbing

Installers benefit from the absence of dangerous fibers that harm skin and negatively impact air quality. Leads to the creation of safe, quiet indoor habitats, free of airborne toxins and trapped humidity



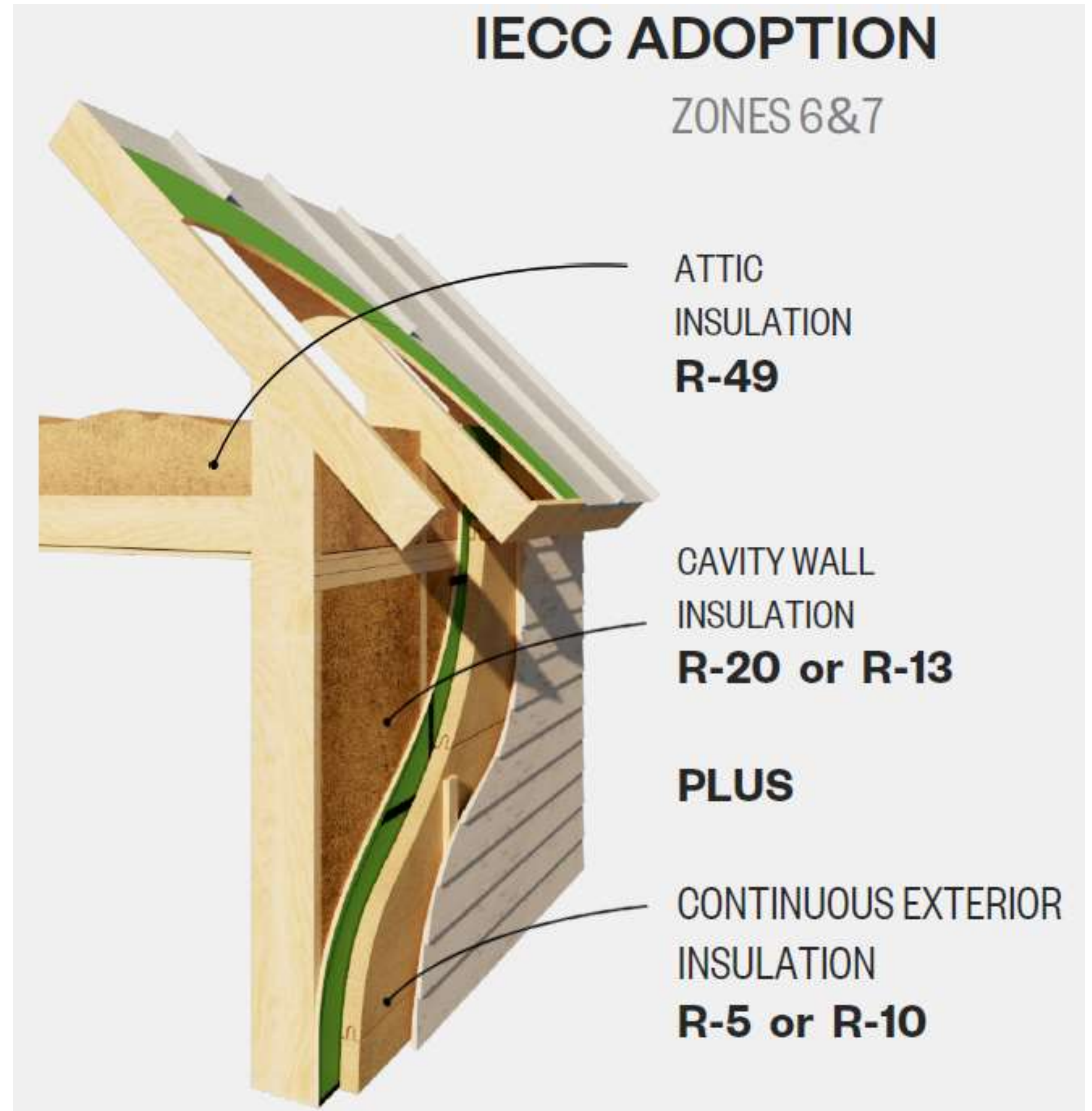
# Building Code Drives More Insulation

Maine recently adopted International Residential Building Code (IRC) 2015 as part of MUBEC

Climate zone and basic requirements

More insulation can mean more problems

View the building envelope as a system



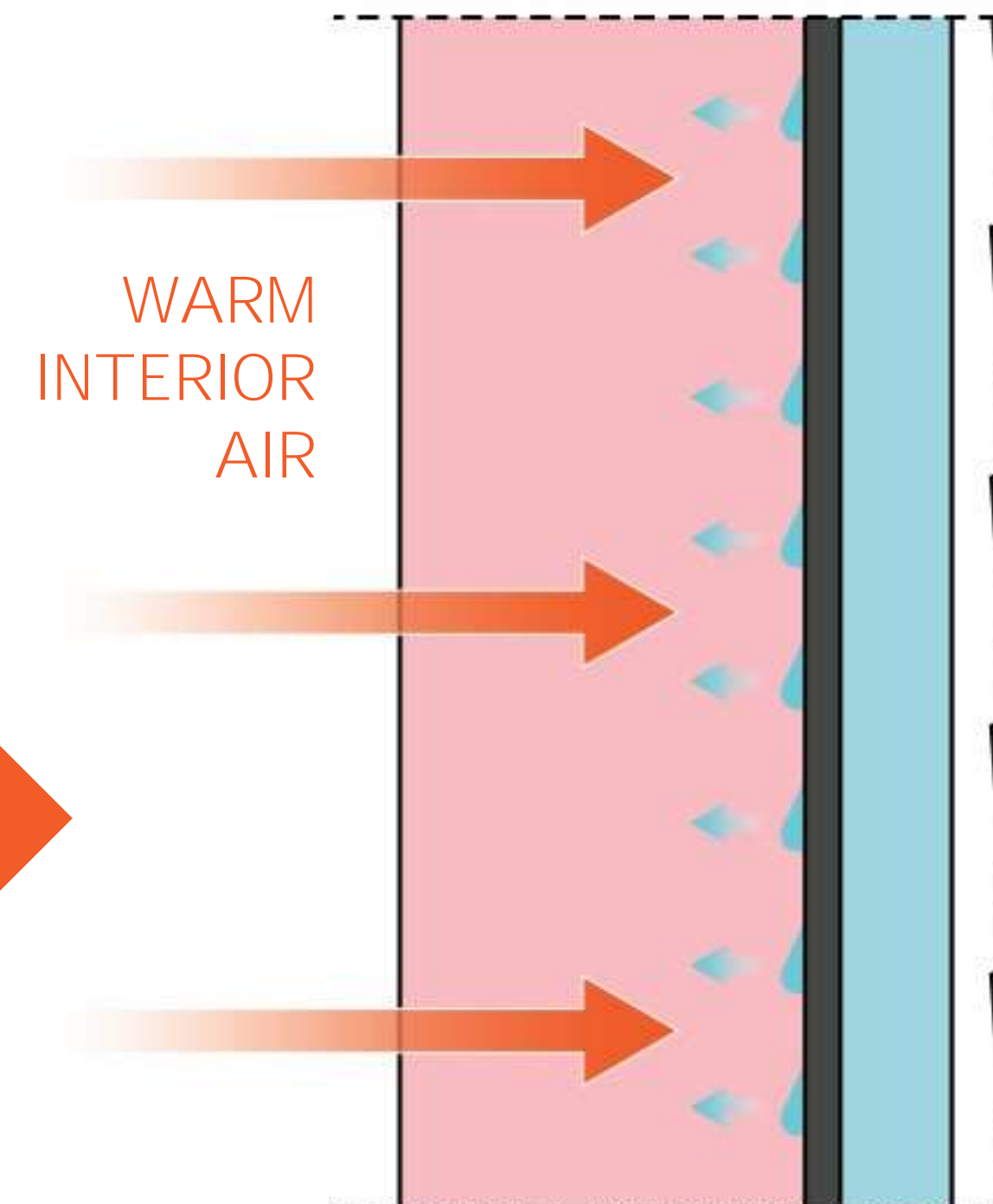
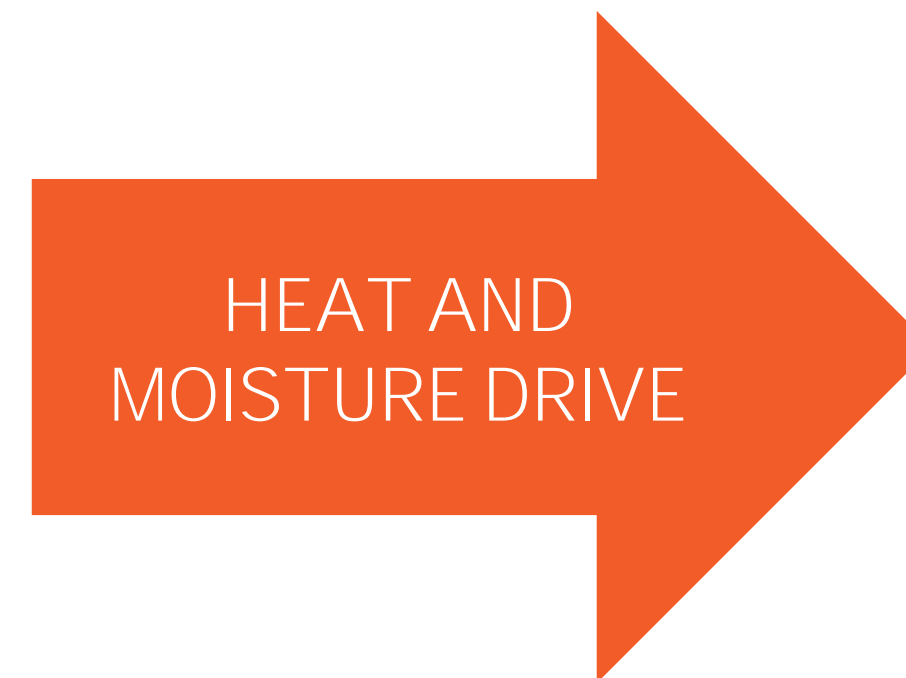


## Traditional Insulation Traps Moisture

Water vapor will inevitably migrate into assemblies through air leaks and by diffusion

Traditional insulating materials can prevent moisture from exiting the system

Trapped moisture can lead to mold and mildew, health risks, and rot



WARM INTERIOR AIR

COLD EXTERIOR AIR

1. Water vapor condenses on cold surface
2. Moisture gets trapped in low permeability wall



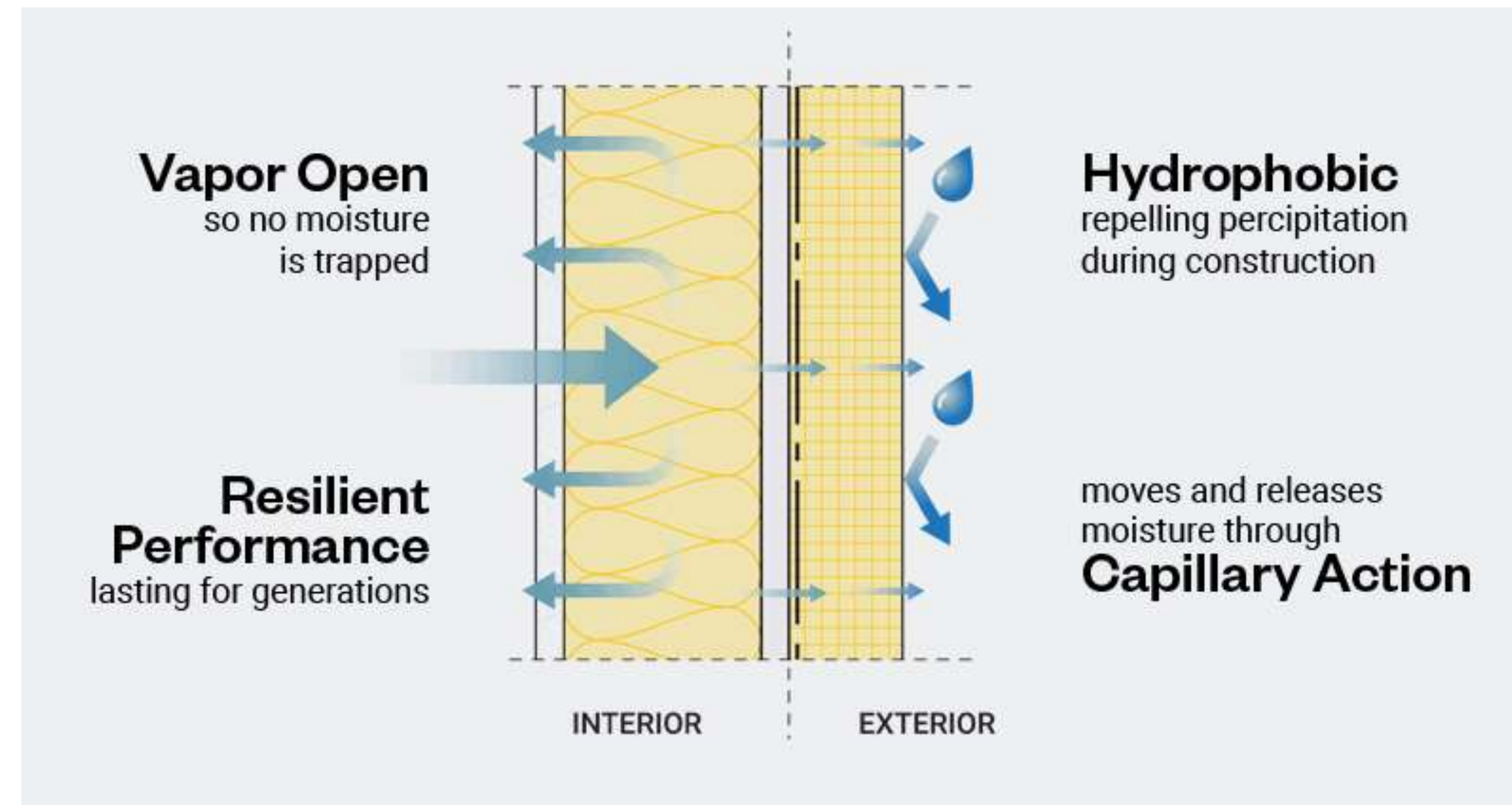
## TimberHP Manages Moisture

Wood fiber insulation offers high vapor permeability (40 to 70 perms/inch) allowing for drying to both the inside and outside of buildings

Wood fiber can hold 15% of its weight in moisture without losing insulating properties

Through capillary action, moisture is spread out across the insulation and dries either to the inside or outside of the building depending on temperature, pressure, and humidity levels

- High structural resilience by reducing chance of rot
- More comfortable indoor humidity levels
- Healthier indoor air quality





# High Performance

## Insulation for all seasons

Low Thermal Conductivity & High Heat Capacity balance temperature swings in conditioned spaces, reducing heating and cooling loads.

Wood fiber absorbs heat slowly over time and radiates warmth out when cooler conditions exist

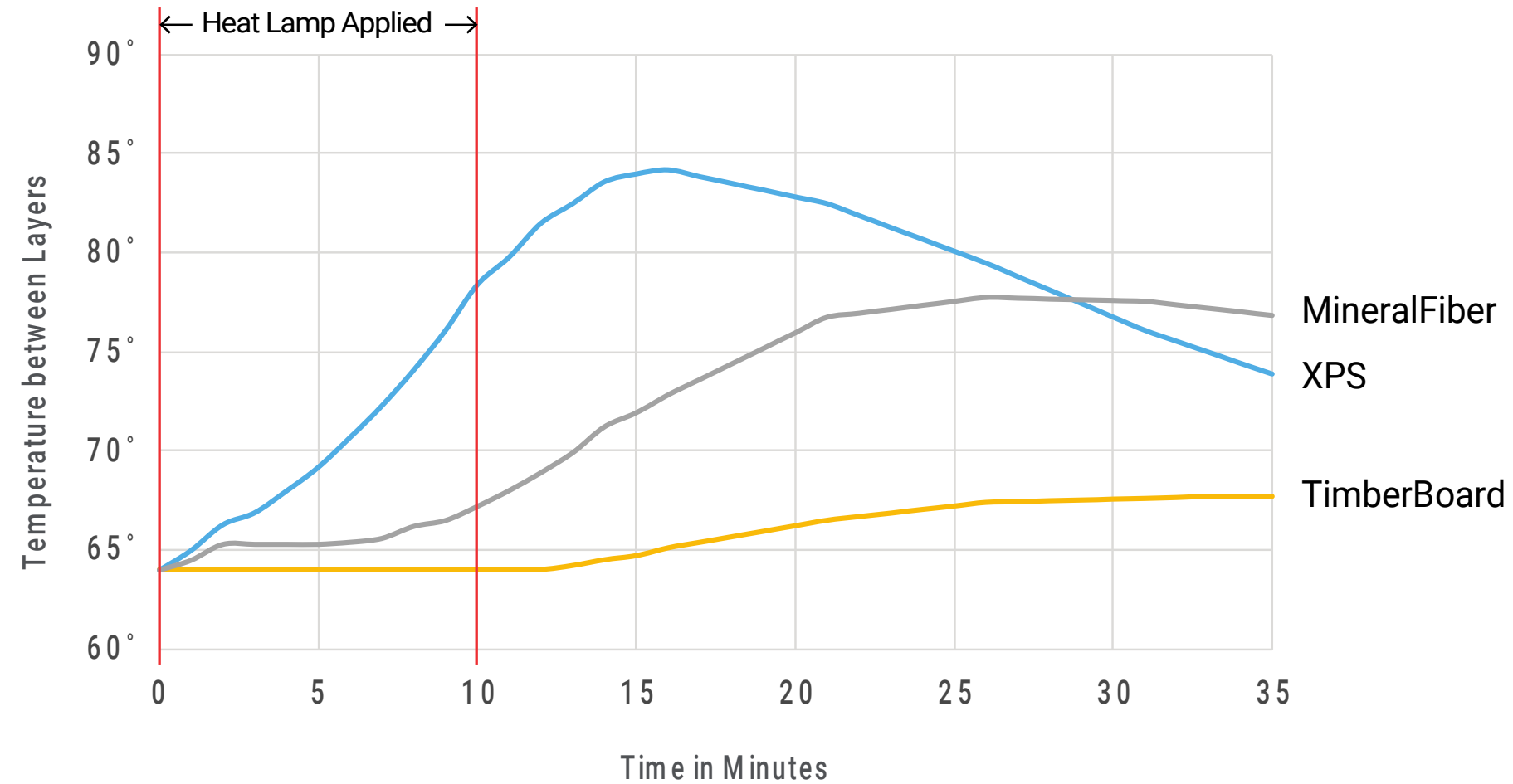
- Guards against summer heat
- Saves the heat we buy in the winter



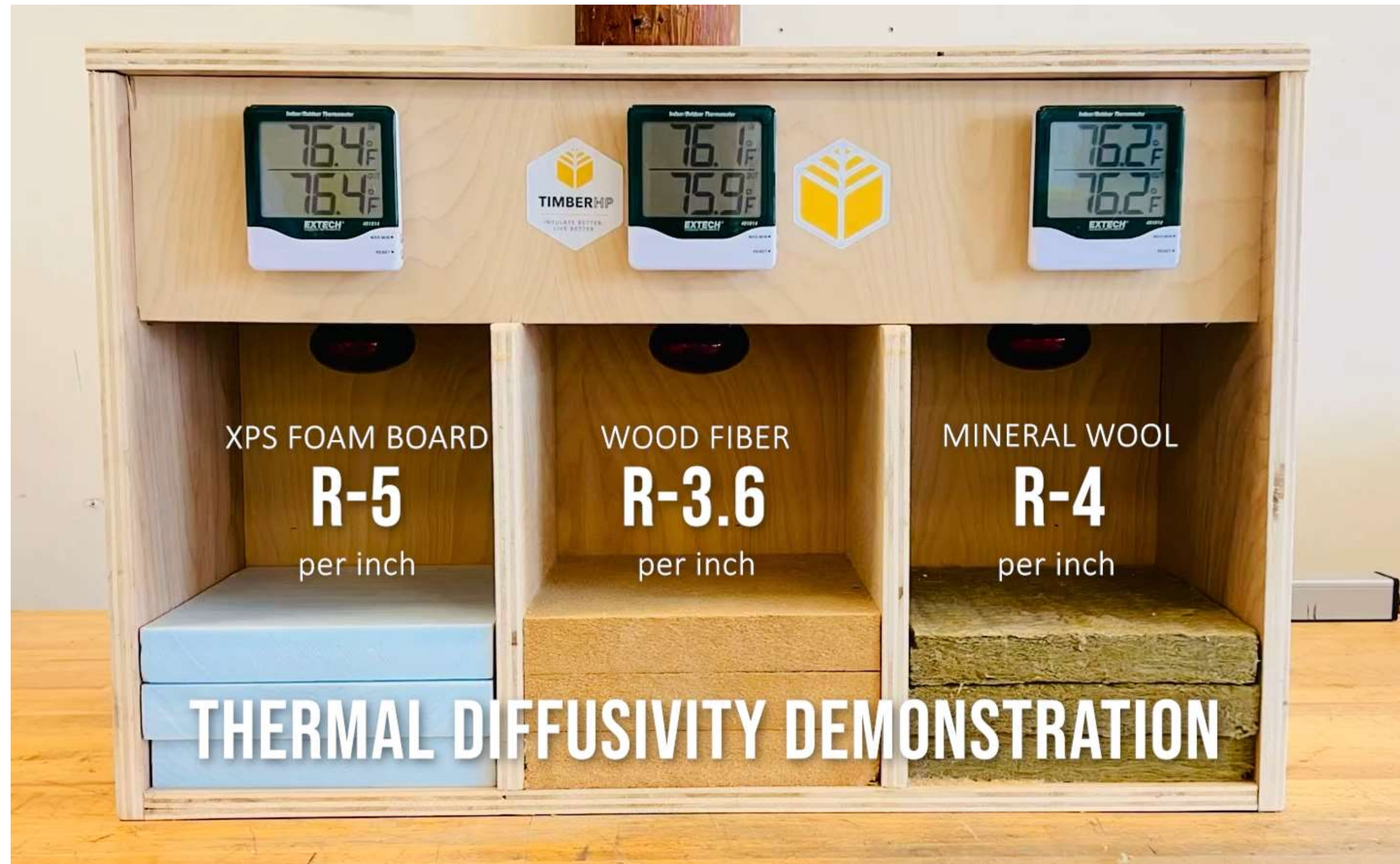
# Unmatched Heat Protection

Resulting from product density and the combined high heat capacity and low thermal conductivity of wood, TimberHP insulations delay heat transfer and increase temperature stability in our buildings.

Temperature Rise Comparison



**Beyond R-VALUE**





## Opening the indoors

Vapor-open assemblies allow structures to breathe and indoor humidity to escape

No trapped moisture means less chance for mold and mildew, less chance for respiratory issues and allergies

## Acoustics

Best-in-class acoustics and pure fiber are the building blocks for the new indoor habitat



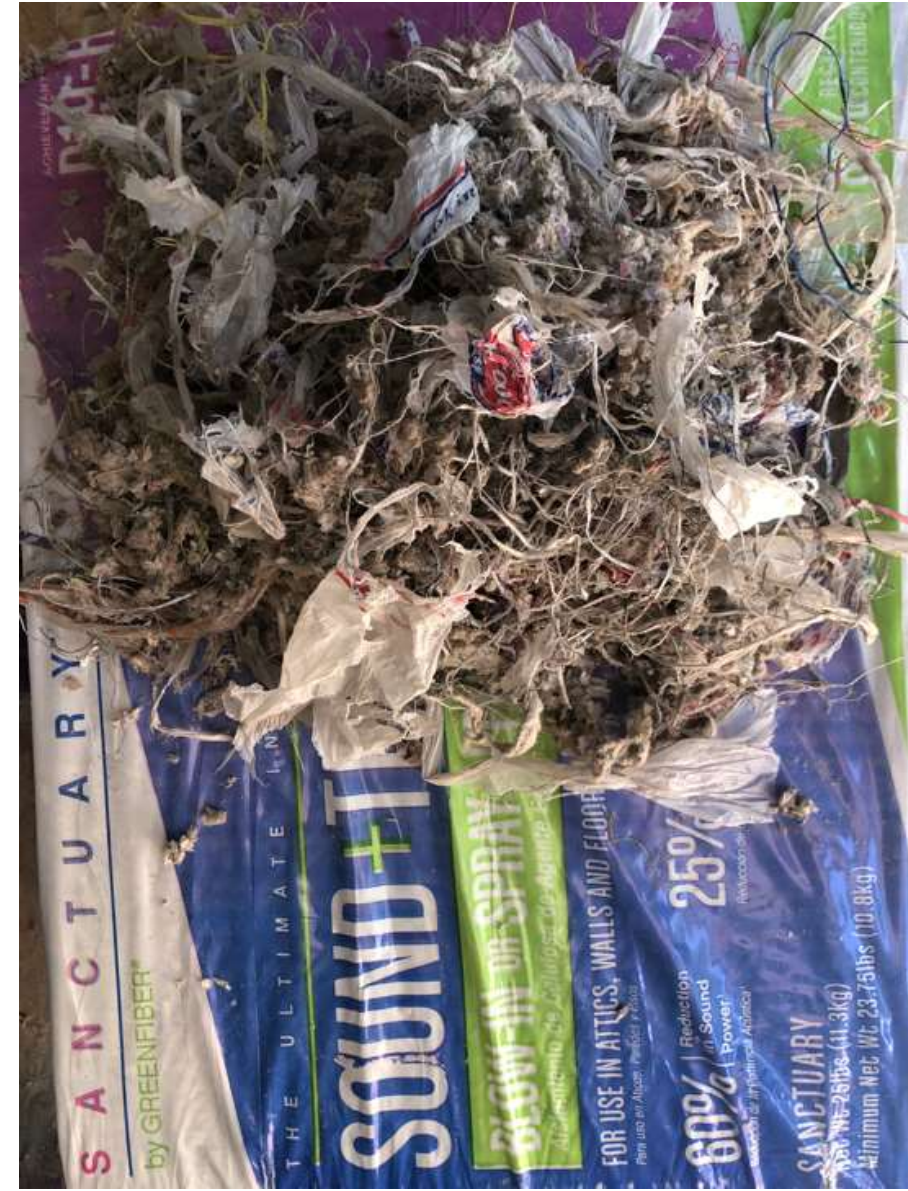
## Competitor Liabilities

**Cellulose**—Plastics, ink toxins, powder flame retardants

**Foam**—Blowing agents, toxic off gassing, nonrecyclable microbeads, trapped moisture, carbon

**Mineral Wool**—Scratchy fibers of steel slag and basalt, carbon, mining, air pollution

**Fiberglass**—Glass fibers, some use formaldehyde binders



CELLULOSE



FIBERGLASS



FOAM



ROCKWOOL



## Just Wood

Over 90% of every insulating product is softwood residuals

No toxins to breathe  
No fibers to irritate skin

When you cut TimberHP insulation, you produce sawdust.

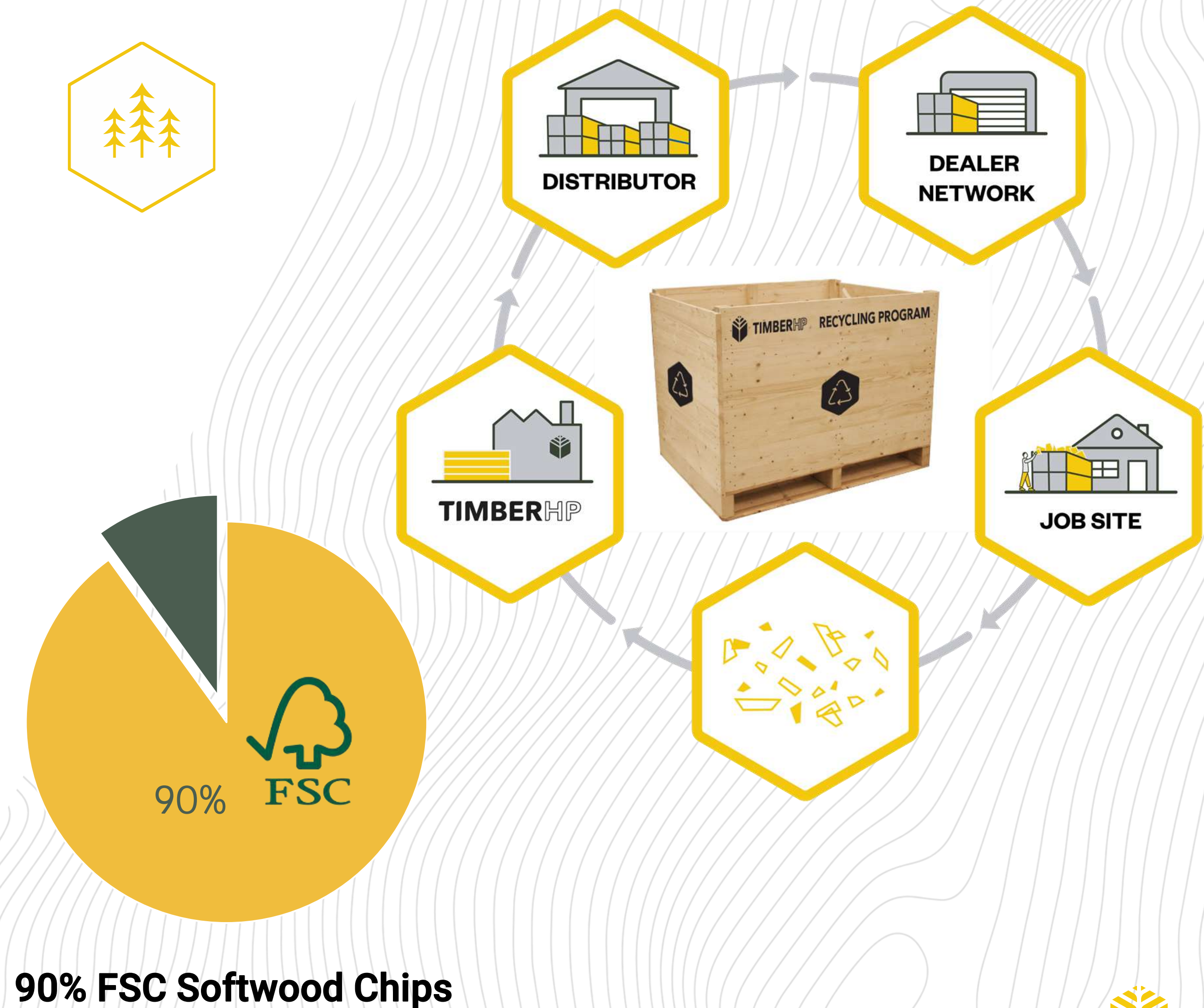
It can be handled and installed without wearing gloves, long sleeves, or chemical respirators. Installers appreciate insulation free of toxins and abrasives.





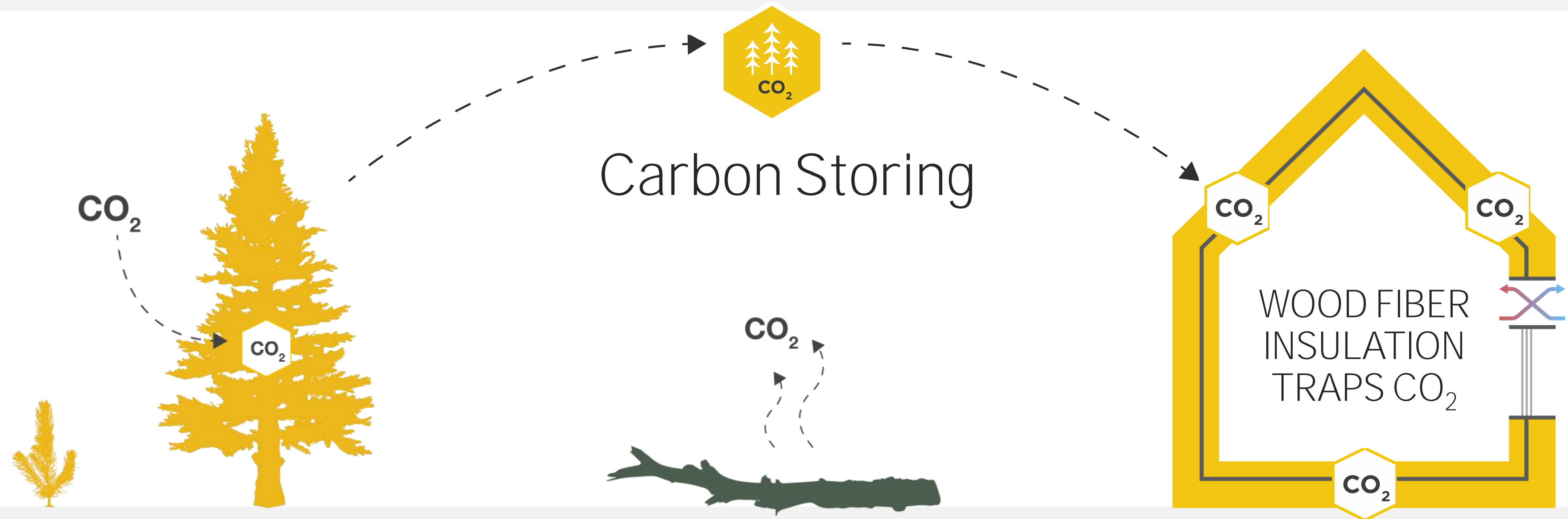
Insulation products made from wood fiber are a superior climate-friendly alternative to conventional insulation.

- Carbon Sequestering – Only scalable construction insulation with the potential to address both operational and embodied carbon
- Renewable/ Sustainable – All products made from >90% Forest Stewardship Council softwood chips
- Recyclable – Post construction and demolition waste can be fed back into the process to make new product
- Nontoxic – Urea formaldehyde free



# Solution: TIMBERHP

Carbon storing wood products used in construction yield a net benefit to the atmosphere



Atmospheric carbon dioxide is taken up by trees and, through photosynthesis, stored as carbon in biomass

**At the end of the tree's life,** when left to decay, this stored carbon returns to the atmosphere slowly

Harvesting trees as the source material for building products can delay the release of that carbon for the life of the building and potentially far longer



# Carbon Footprint

**36 kg CO<sub>2</sub>**

Per 100SF @ R=1



**15 kg CO<sub>2</sub>**

Per 100SF @ R=1



**14 kg CO<sub>2</sub>**

Per 100SF @ R=1



**2 kg CO<sub>2</sub>**

Per 100SF @ R=1



**FIBERGLASS**



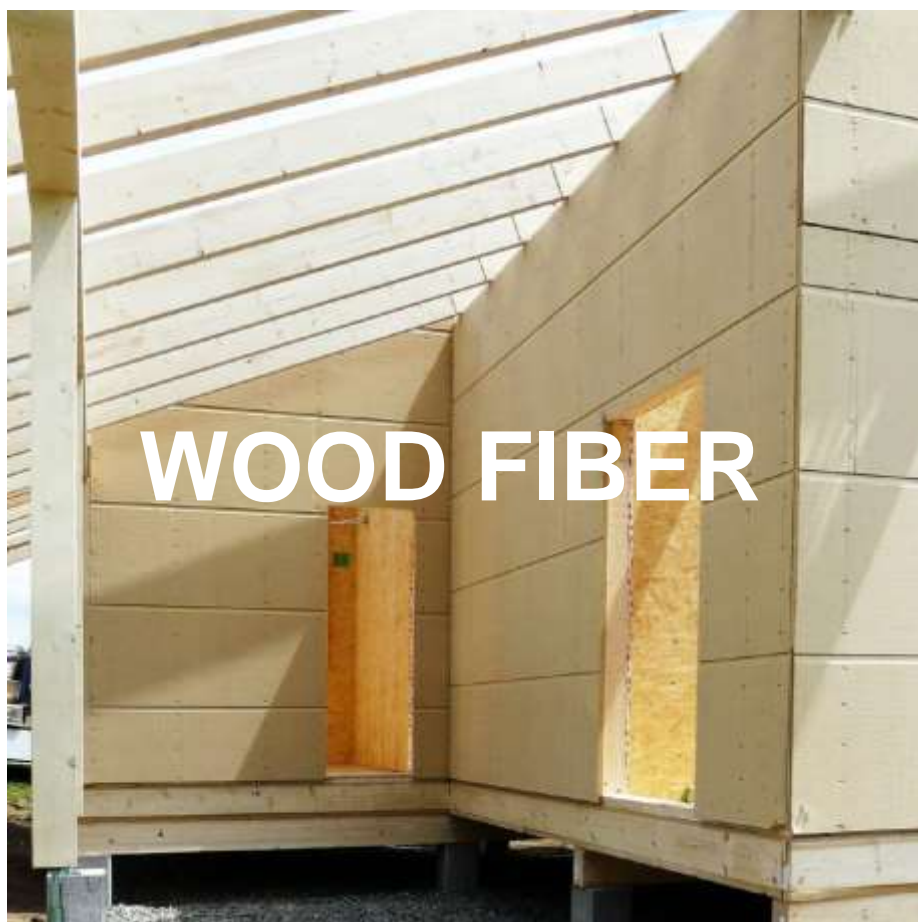
**MINERAL WOOL**



**SPRAY FOAM**



**XPS**



**WOOD FIBER**

**-9 kg CO<sub>2</sub>**

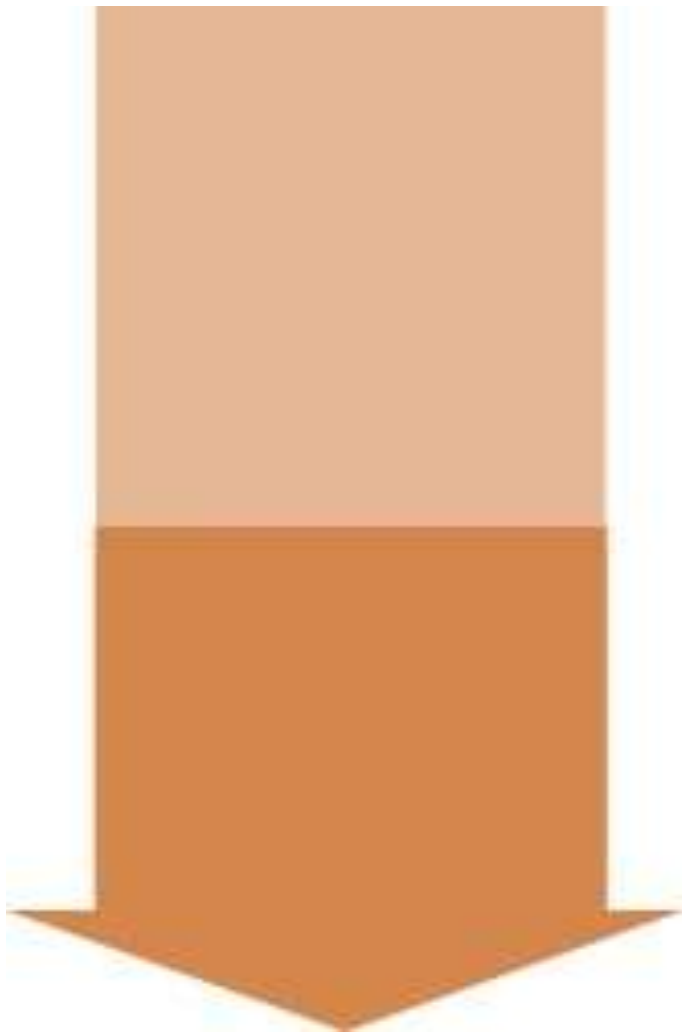
Per 100SF @ R=1



# The greatest opportunity for reducing embodied carbon after concrete is insulation



Concrete



14%-33% reduction  
None to low-cost premium



Insulation



16% reduction  
**No cost premium**



Rebar



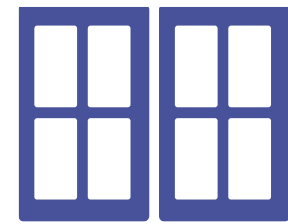
4%-10% reduction  
None to low-cost premium



Finish  
Materials



5% reduction  
None to low-cost premium



Glazing



3% reduction  
10% cost premium

TOP BUILDING MATERIAL CATEGORIES FOR REDUCING EMBODIED CARBON

Data Source: RMI

# SALES & MARKETING



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# The Team



**Edith Gawler, Marketing Manager**—Visual assets, digital marketing action plan, website and social media, brand structure and guidelines, architectural resources, tradeshow (events) and industry outreach...



**Claire Donnelly, Senior Marketing Coordinator**—Manages social media and outreach, assists with digital and printed external marketing materials, infographics, video editing, project management and marketing calendar...



**Jason Todd, Director of Building Science and Industry Support**—Resource development for specifiers, installers, and distributors; master test plan; on-site testing equipment, building code and certification compliance; lead inside sales and technical support team...



**Jay Field, Business Development and Communications**—Expansion team, storytelling beyond industry and target market (national stage), investor newsletter, consumer newsletter, video documentaries, internal and external company communications...

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# Northeast Sales Team

## Sales Manager

Coach and lead inside and outside sales teams, while building relationships with offtake channels in the region

## Inside Sales and Technical Support X4

More than just order takers. Guide consumers to application, code, and performance resources

## Business Development X2

Field sales supporting architects and large-volume specifiers

## Territory Sales X5

Field sales supporting retail and distribution partners as building science and code educators who drive contractor and installer business through distribution

## Field Education Specialist X2

Elevate Territory Sales and Business Development at industry events and provide education through hands-on demonstrations and field visits



# Pre-Production R&D—European Products

- **US/Canada Code and Standards Compliance**—Evaluating how current European products perform in relation to IECC, NFPA, and ASTM and CAN/ULC standards
- **Initial Product Offering Development**—Ensuring TimberHP products meets the expectations and requirements of the residential/light-commercial construction market

## Partners:



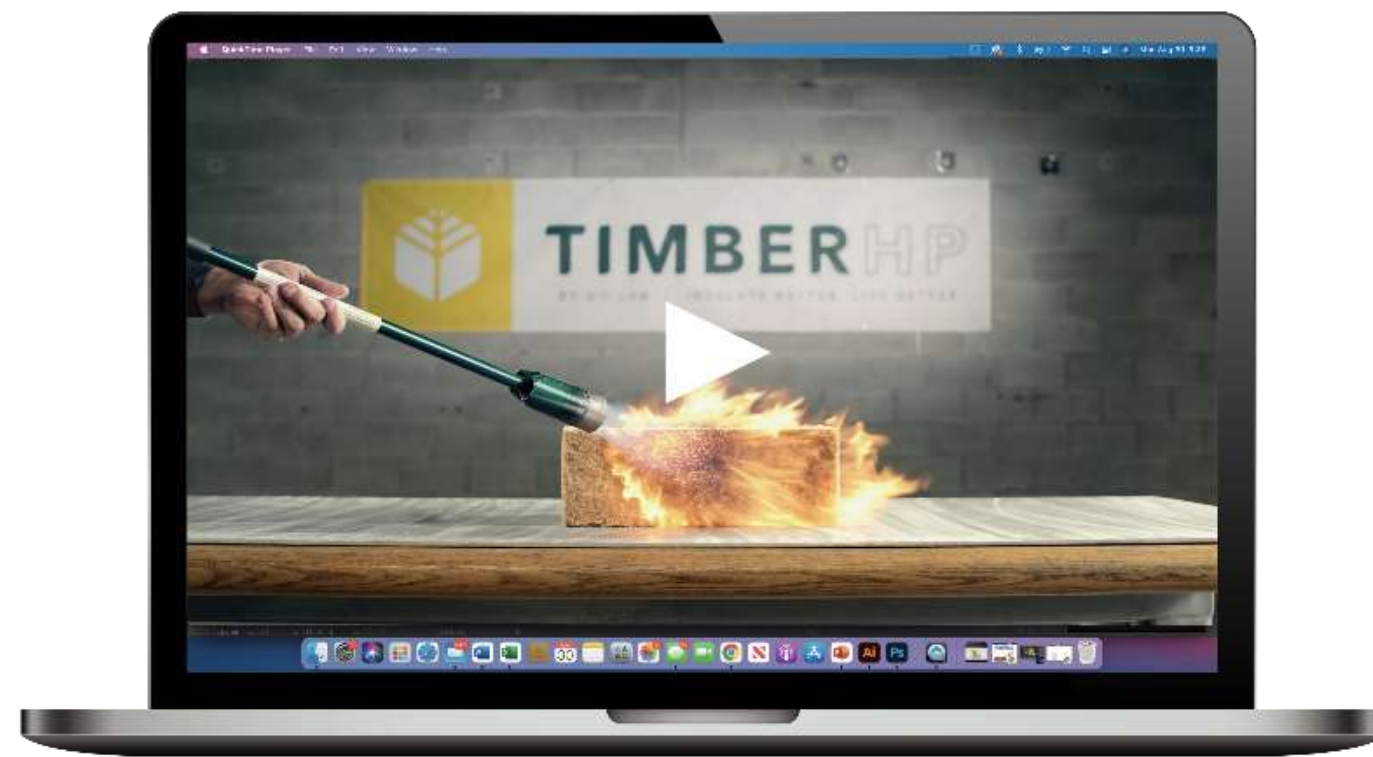


# Product Certifications

- These certifications draw attention to material transparency, and environmental stewardship which exists at the very core of TimberHP.
- FSC and SFI for raw materials acquisition
- LCA and EPD will be performed for all products once production is underway
- LEED—TimberHP products will qualify for LEED credits in multiple areas
  - Leadership in Energy and Environmental Design



# Marketing Highlights



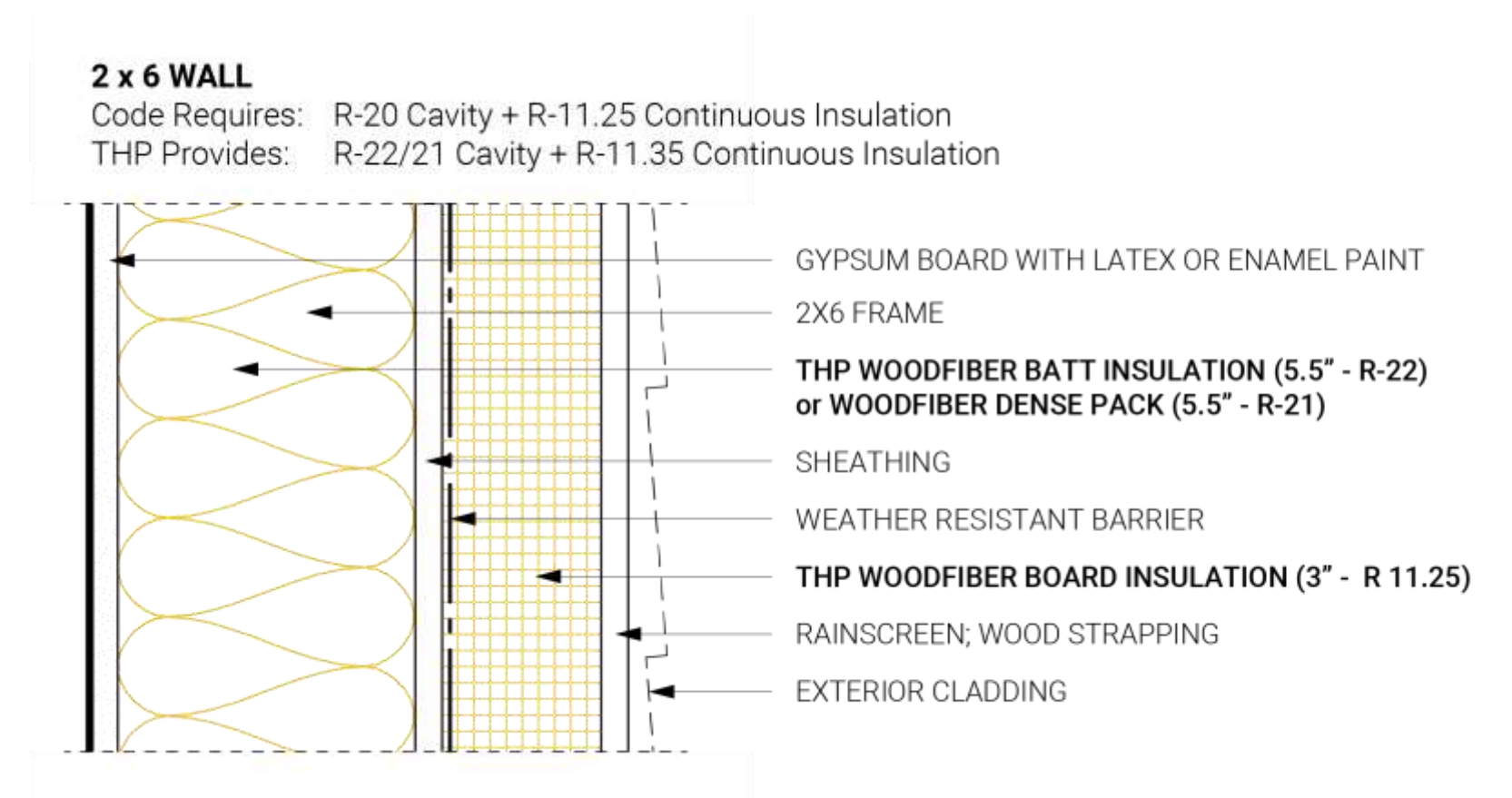
## TimberHP.com *New, Robust Website*

Working in collaboration with Flyte New Media out of Portland to build out a robust website & Wood Fiber Resource hub. Target launch: End of July



## Marketing Resource Development

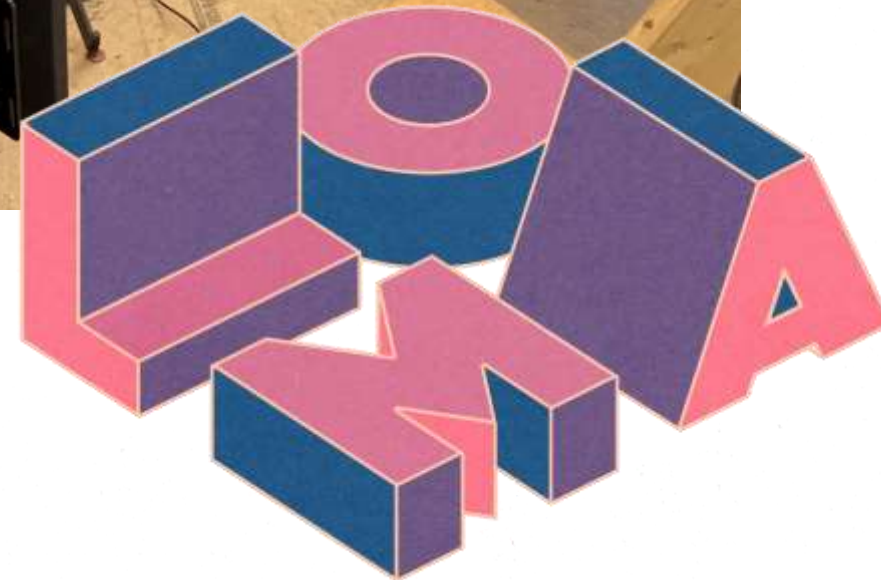
- Consumer Brochure
- Impact Brochure
- Sample Boxes
- Virtual Product Knowledge Workshops



## Technical Resource Development

- Extensive installation guide
- SDS & EPD sheets
- Wall & Roof Assembly Details
- 3-part Specifications
- White papers

# Marketing Highlights



## Media LOMA

TimberFill Technical Install video scheduled in October, Batt in Q1 2023 and Board in Q2 2023



YouTube Channel

## Beyond R-VALUE

Our Blog—Beyond R-Value



## Launching Digital Marketing Action Plan

# Film Projects – Broader Outreach



Madison Mill Doc  
*Compass Light*

30-minute documentary produced by Compass Light focused on the people making TimberHP possible



Full-Length Documentary  
*Josh Gerritsen*

In-depth doc following GO Lab from fundraising to TimberHP product field adoption (2021–2024)



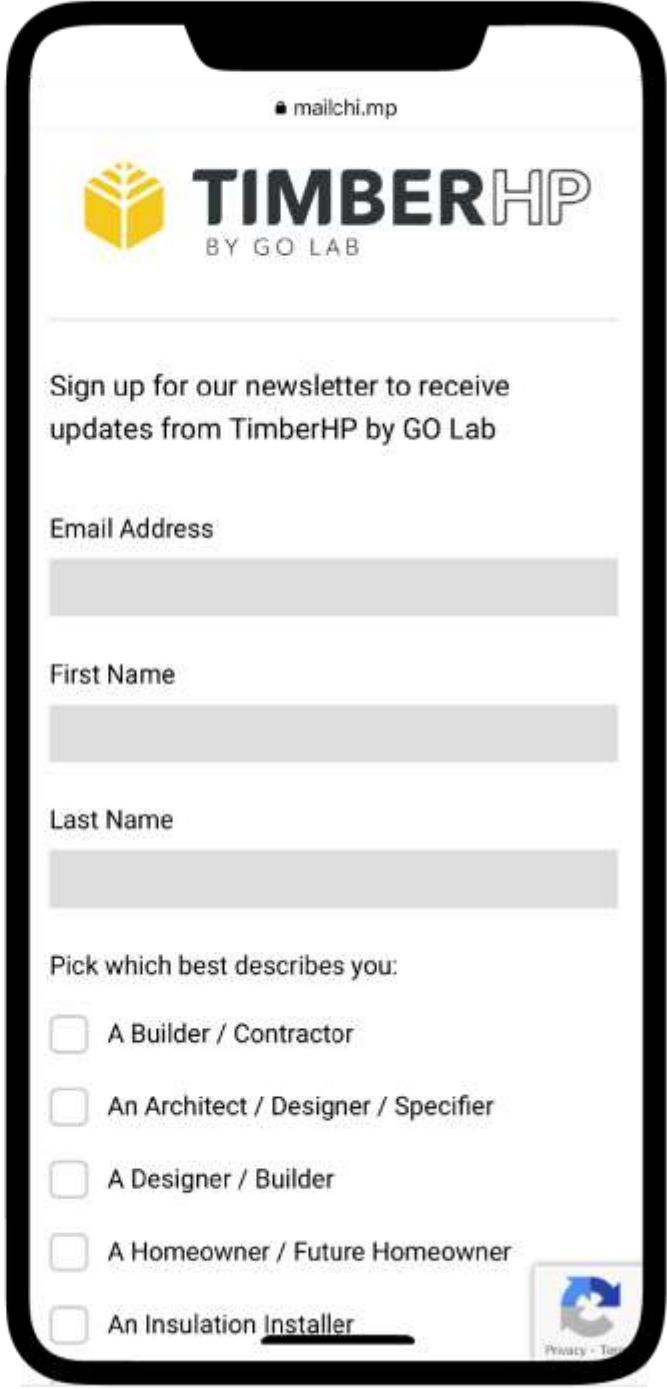
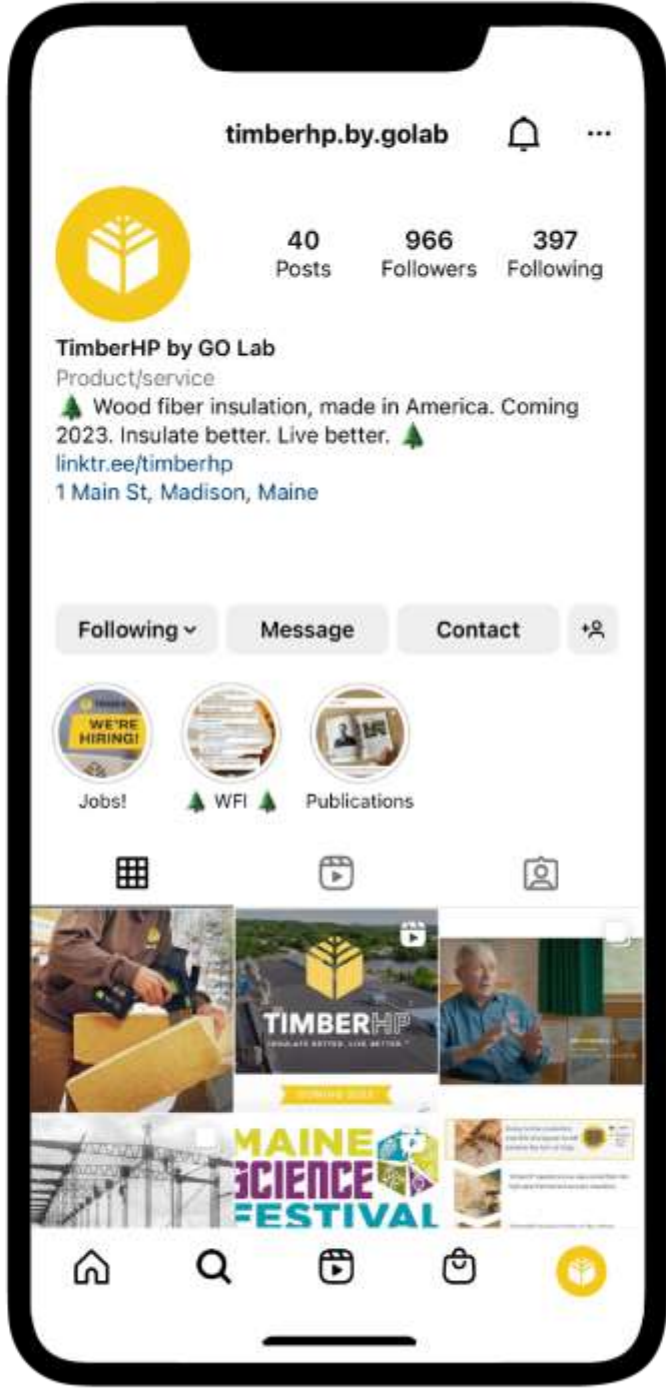
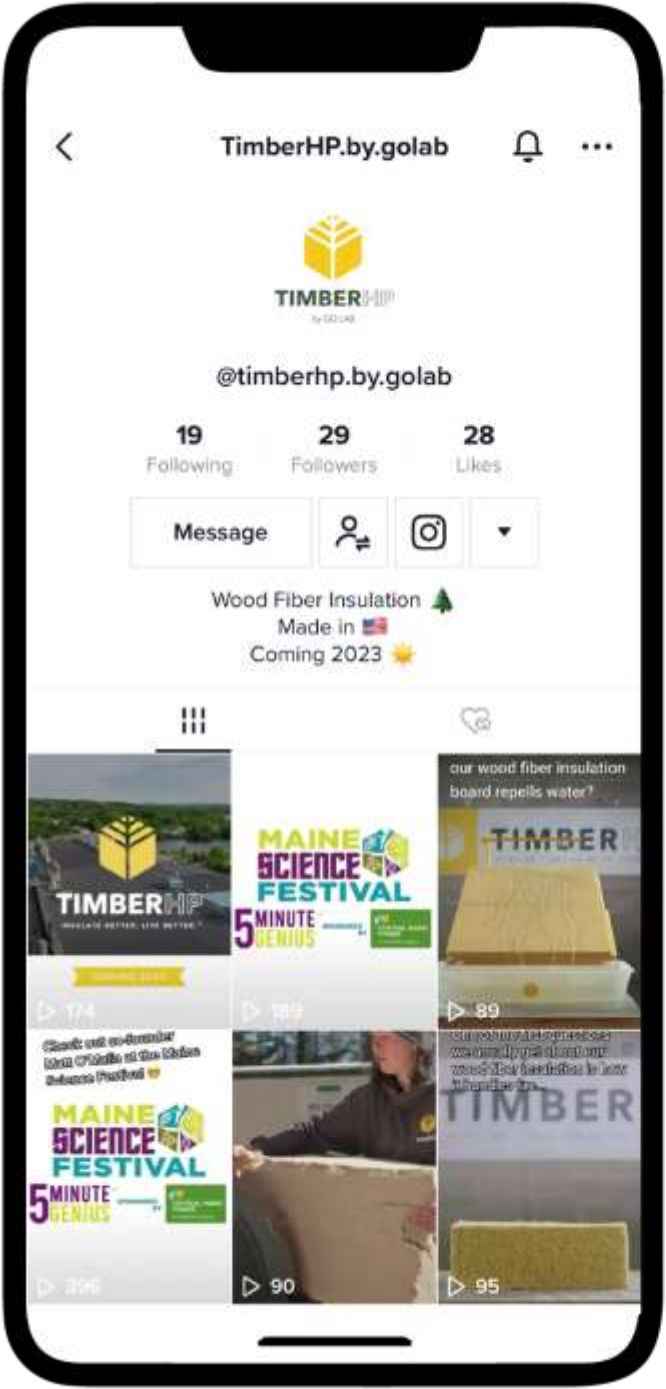
America's Forests  
*with Chuck Leavell*

Two episodes for PBS series focused on forest products heritage and sustainable management

# In-Person Events



# Join the TimberHP Community: [www.timberhp.com](http://www.timberhp.com)



Follow us on social media and subscribe to our newsletter





# TIMBERHP

Building our Legacy through Performance

## Cautionary Statement Regarding Forward-Looking Statements:

A number of the projections, presentations and disclosures in this Plan, including any statements preceded by, followed by, or which include the words 'may,' 'could,' 'should,' 'will,' 'would,' 'hope,' 'might,' 'believe,' 'expect,' 'anticipate,' 'estimate,' 'intend,' 'plan,' 'assume' or similar expressions constitute forward-looking statements. These forward-looking statements, are based on assumptions and other information with respect to the Company's beliefs, plans, objectives, goals, expectations, anticipations, estimates, intentions, financial condition, results of operations, future performance and business, including the Company's expectations and estimates with respect to the Company's revenues, expenses, earnings, return on equity, and other financial data. Although the Company believes such statements are accurate, estimates and assumptions may prove incorrect and may change based on various factors, some of which are beyond the control of the Company. Should one or more of the underlying assumptions or other factors affecting the Company's forward-looking information and statements prove incorrect, then the Company's actual results, performance, or achievements could differ materially from those expressed in, or implied by, forward-looking information and statements contained in this Plan.