



THERMALLY MODIFIED WOOD





Sarah Sherman Samuel Showhouse | Grand Rapids, MI | BRNSH Burned Pine + Black Oil





# Sustainable materials for a more beautiful world.

Arbor Wood Co. produces thermally modified wood for a variety of outdoor and indoor applications including cladding, decking, and dimensional lumber. Our process begins with a select grade of domestically grown and responsibly harvested timber which undergoes a thermal modification process using heat and steam. The result is a high quality, performance driven material which sustains the natural beauty and design element of wood all without the use of harsh chemicals.

Thermal modification is a unique craft which alters wood at the cellular level to create a material that is functionally and visually successful in a range of residential and commercial applications. High heat and steam replace chemicals to fundamentally modify Arbor Wood's hemicellulose, making it one of the most natural, chemical-free ways to extend the service life of a wood product. The wood is less absorbent, resulting in increased material stability with less warping/cupping and minimal expansion/contraction. Additionally, certain organic compounds are eliminated during modification thus removing the food source for rot and insects. The conversion of sugars to a nonfood source also turns the timber a darker, richer through-color, providing an appealing and refined aesthetic.



Iron Ranger | Mäkinen, MN | NATRL Pine

## Lasting Beauty. Lasting Impact.

The thermal modification process affects wood's relationship with water by breaking down the hydroxyl groups in the wood and eliminating the bound water, making Arbor Wood less prone to mold, rot, and fungal decay. The wood is also less likely to absorb new moisture and has a reduced equilibrium moisture content, reducing the chance of swelling and shrinking by up to 60%. The lower moisture content reduces the overall weight of the wood and helps support the general workability of Arbor Wood.



### **SOLID & STABLE**

Dimensional stability is increased as expansion and contraction is reduced by up to 60%.



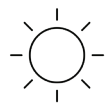
### **DECAY RESISTANT**

Less water absorption makes it less susceptible to mold, rot & fungal decay.



### **ULTIMATE WORKABILITY**

Arbor Wood may be glued, painted, or finished similar to standard wood to achieve the desired look for your next project.



### **ENHANCED APPEARANCE**

Thermally modified wood will have richer tones that extend throughout the entire thickness of each board.



### **CHEMICAL FREE**

The thermal modification process uses nothing but heat and steam.



### **LIGHTER WEIGHT**

A significantly lower moisture content reduces the physical weight of each board for easier handling and installation.



Our process begins with a select grade of domestically grown and responsibly harvested wood.

Prior to modification, our rough-sawn timber is hand selected, graded for quality, and kiln dried to a consistent moisture content. The wood then enters our modification process where high heat and steam improve the dimensional stability, durability, and visual tone of the material. Once modified, these timbers are milled into finished profiles where any undesired characteristics such as checking or end-cracking are also removed. The result is a beautiful board which is straight, true and ready for use.



## Phase 1

### TEMPERATURE INCREASE

Kiln temperature is gradually increased and moisture content is reduced to nearly 0%, eliminating bound water from the hemicellulose in the wood. With this, the food sources for mold, rot, fungal decay and insects are also removed.



## Phase 2

### THERMAL MODIFICATION

The second phase is where peak temperature is hit and thermal modification occurs. The hydroxyl groups within the hemicellulose are broken, thus rendering the wood resistant to water absorption. Naturally occurring sugars are converted and give the wood a slightly darker, richer appearance.



## Phase 3

### COOLING & RE-CONDITIONING

Temperature is reduced and steam introduced to complete the process. The steam cools and conditions the wood to a final moisture content of 4-6% improving dimensional stability.





Northglenn City Hall | Northglenn, CO | NATRL Ash

## Sustainability

Arbor Wood is a premier choice for sustainably harvested thermally modified wood. Our material can be used in place of more expensive tropical wood species and is a domestic, renewable, and environmentally conscious option.



### RENEWABLE

Manufactured domestically from trees sourced and harvested in responsibly managed forests in the United States.



### CHEMICAL FREE

High heat and steam replace more traditional chemicals, which are otherwise so prevalent in building materials.



### LONGER LASTING

Microscopic changes to the wood have macro results - longer lasting, hydrophobic, resistant to rot and decay - just to name a few.



### CARBON STORAGE

Using wood can reduce carbon emissions due to its properties as a natural carbon sink.

### Associated Sustainability Organizations



Declare.



EPD Available online



Learn more about our sustainability efforts.





Glacial Lake House | Glenwood, MN | NATRL Ash

## Products & Applications

*Thermally modified wood can be used in an array of commercial and residential applications. Popular applications are in external environments where moisture and humidity would compromise a lesser-grade material.*



### CLADDING

Arbor Wood cladding is produced from domestically sourced and responsibly harvested wood. We produce a range of wood species, profile and finish options, including our take on traditional Japanese charred cladding.



### DECKING

Arbor Wood decking is available in a range of species and profile options. Our modified hardwoods prove an eco-conscious alternative to exotic hardwoods, and our softwoods a more natural and durable alternative to chemically-preserved lumber.



### DIMENSIONAL LUMBER

From windows and doors to interior flooring and even landscape furnishings, Arbor Wood is available in a range of profiles to allow for a higher performance natural wood alternative.



### ADDITIONAL USES

- Soffits
- Fencing
- Screening
- Furniture



# Collections

Arbor Wood is available in a variety of bold and distinct factory finishes to fit your project.

## natrl minimal, raw, refined



+ ash  
+ no finish



CLADDING



DECKING



DIMENSIONAL LUMBER



+ pine  
+ clear oil



CLADDING



DECKING



DIMENSIONAL LUMBER



+ poplar  
+ clear oil



CLADDING



DECKING



DIMENSIONAL LUMBER

## brnsh burned, bold, beautiful



+ burned pine  
+ black oil



CLADDING



DIMENSIONAL LUMBER



+ burned & brushed pine  
+ black oil



CLADDING



DIMENSIONAL LUMBER



+ burned & brushed pine  
+ brown oil



CLADDING



DIMENSIONAL LUMBER

## elmnt expressive, earthy, exquisite



+ brushed pine  
+ grey oil



CLADDING



DIMENSIONAL LUMBER



+ brushed pine  
+ white oil



CLADDING



DIMENSIONAL LUMBER



# Real Wood. Made Safer.

Arbor Wood Co., products treated with SaferWood Thermex-FR are approved for exterior use in residential and commercial applications where FRTW is specified as a code compliant alternative to noncombustible materials. This industry leading exterior fire-retardant treatment renders wood Class A "ignition resistant" having passed extended surface burning tests and weathering as required by ASTM and model building codes including:

**IBC**  
**International Building Code**

**IRC**  
**International Residential Code**

**IWUIC**  
**International Wildland Urban Interface Code**

**SaferWood**  
Thermex-FR

*Available now on thermally  
modified pine cladding and  
decking products.*

**NFPA**  
**703**  
**Compliant**

## Weathering & Maintenance

Thermal modification changes the naturally occurring sugars in the wood resulting in beautiful, rich brown tones that extend through the full thickness of the material. Since Arbor Wood is still a natural wood product it will move to gray once exposed to weather and UV. This does not impact the performance characteristics of the wood itself. The speed of this graying process depends on the intensity of exposure to environmental elements like the sun, rain, and snow. Regular cleaning and maintenance with a penetrating oil will reduce checking and cracking and will extend the life expectancy of the product. In order to maintain the original tone of the wood, regular maintenance with a penetrating oil like CUTEK® Extreme mixed with a CUTEK® Colortone is required.



Arbor Wood Ash : Raw



Arbor Wood Ash : Raw - Aged 6-12 mos.




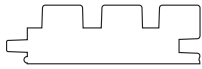
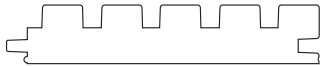


Arbor Wood Ash : Raw - Fully Weathered






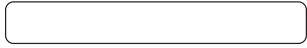


# Profiles & Dimensions

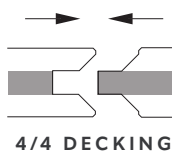
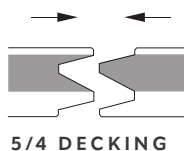
## CLADDING PROFILES

	Profile	Species	Dimension (overall)	Dimension (face coverage)
	Tongue & Groove	Ash	.75" x 3.25"	3"
	Tongue & Groove	Ash Pine Poplar	.75" x 5.25"	5"
	Tongue & Groove	Ash Pine Poplar	.75" x 7.25"	7"
	Fluted Tongue & Groove	Ash	1" x 3.25"	3"
	Fluted Tongue & Groove	Pine	1" x 5.25"	5"

## DECKING PROFILES

	Profile	Species	Dimension (nominal)	Dimension (actual)
	Hidden Fastener	Ash	5/4" x 4"	1" x 3.5"
	Non-Grooved	Ash	5/4" x 4"	1" x 3.5"
	Hidden Fastener	Ash Pine	5/4" x 6"	1" x 5.5" 1" x 5.25"
	Non-Grooved	Ash Pine	5/4" x 6"	1" x 5.5" 1" x 5.25"
	Hidden Fastener	Ash	4/4" x 6"	.75" x 5.5"
	Non-Grooved	Ash	4/4" x 6"	.75" x 5.5"

### END MATCH\* DETAIL:











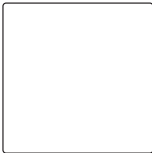


\*End match available with ash decking and cladding products only.

Scan for more information  
and to see our full lineup of  
accessories and finish needed  
to complete your project.



# DIMENSIONAL LUMBER

	Species	Dimension (nominal)	Dimension (actual)
	Ash Pine Poplar	1" x 2"	.75" x 1.5" .75" x 1.5" .75" x 1.5"
	Ash Pine Poplar	1" x 4"	.75" x 3.5" .75" x 3.25" .75" x 3.5"
	Ash Pine Poplar	1" x 6"	.75" x 5.5" .75" x 5.25" .75" x 5.5"
	Ash Pine Poplar	1" x 8"	.75" x 7.25" .75" x 7.25" .75" x 7.25"
	Ash Pine	2" x 2"	1.5" x 1.5" 1.5" x 1.5"
	Ash Pine	2" x 4"	1.5" x 3.5" 1.5" x 3.25"
	Ash Pine	2" x 6"	1.5" x 5.5" 1.5" x 5.25"
	Ash Pine	2" x 8"	1.5" x 7.25" 1.5" x 7.25"
	Ash Pine	2" x 10"	1.5" x 9.25" 1.5" x 9"
	Ash Pine	2" x 12"	1.5" x 11.25" 1.5" x 11"
	Douglas Fir	4" x 4"	3.375" x 3.375"

Scan to see additional resources  
and technical product information.





Arbor Wood. **For Good.**



Arbor Wood Co.  
1025 London Road  
Duluth, MN 55802  
855-414-2727  
[arborwoodco.com](http://arborwoodco.com)

