



# Thermal Modification

A possible use for excess wood material and green alternative to chemical staining

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# Overview

- Background and description of process
- Technical details of process
- How it can be applied to GMI
- Questions and feedback



# Background

- Amerida Hardwoods in Greenville, MI
- Thermal modification is a chemical-free process that produces a similar color effect to staining.
- Popular process in Europe ex. Thermowood (Finland) and Plato (Holland).

## Premium Grade Southern Yellow Pine



**Before Thermal  
Modification**

**After Thermal  
Modification**

Thermal modification brings out the natural grain patterns in the wood and creates a deeper, richer color common in premium wood products.

# Process Details

- Wood is heated in stainless steel kiln (closed system)
- Steam present in closed system
- Temperatures ranging from 180 °C - 260 ° C
- 2-3 hours heating time depending on wood type and color desired

# New Properties

- Physical and biological changes due to chemical change from thermal modification
- Improved dimensional stability (less swelling due to lower equilibrium moisture content).
- Color change
- Good biological durability due to decreased absorption.



# Application

- Any companies with wood waste or that want to be more “green” with wood coloring
- Applications include decking and siding, outdoor furniture, indoor applications such as flooring, high-moisture environments
- Not recommended at this time for structural or deep in-ground contact applications



# Thank you

- Questions?

Hill, CH. (2006). *Wood modification Chemical, Thermal and Other Processes*. West Sussex, England: John Wiley & Sons.