TWT
Therma Wood Technologies

Thermally Modified Wood

A Summary

Thermally Modified Wood

What is it?

- Thermally Modified Wood is manufactured by heating the wood to a temperature of 160C/320F degrees while it is protected with steam. Besides providing protection, the steam also affects the chemical changes taking place in the wood.

- As a result of the treatment, an environmentally friendly, thermally modified wood is created. Its color darkens. It is more stable than normal wood in conditions of changing humidity, and its thermal insulation properties are improved.

- When the process is carried out at a sufficiently higher temperature, treatment also makes the wood resistant to decay.

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Why Thermally Modified Wood?

Thermal modification alters key properties in the wood.

Thermal Modification is the breakdown and removal of Hemicelluloses (sugars) by means of heat and pressure

Results:

Increased Durability-Specifically Siding and Decking

Lower Moisture Content=Increased Dimensional Stability

Higher Decay Resistance= No Longer Attractive to Termites

Color Change=Resembles Valuable Hardwoods

Thermal properties= A Better Insulator due to Density Reduction and Less Moisture

Thermally Modified Wood

Performance Considerations

Not Completely Decay Resistant

- Do not use in ground contact
- Do not use in **termite country**

Not Resistant to Molds, Algae etc.

- Behaves like Untreated Wood

Not *Absolutely* Free of any Movement in Use

- There will be swelling and shrinkage and cracking, but less than normal

Not UV-stable

- Greys very fast if not coated

Not Water Resistant

- Will still pick up liquid water if the substrate is porous (sapwood)

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Wood Species

- Most species can be used
- Some much easier to modify than others
- Choice depends on final use and availability
- Good track record with Ponderosa Pine, Douglas Fir, Western Hemlock, White Fir, Spruce
- Species with low volumetric shrinkage and/or low thickness ratio preferred
- Special attention on raw material quality needed
- Higher yield quality in material with live knots and not flat sawn side boards