



10 February 2020



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Thermally modified wood as a green alternative to tropical hardwoods

Britton Timbers

A thermally modified timber product is presenting itself as a green alternative to tropical hardwoods in applications that demand durability and dimensional stability.

Made with the best American hardwoods, Cambia by Greenleaf is delivering impressive results in a wide range of indoor and exterior applications. The simple and chemical-free Cambia process offers a viable alternative to tropical hardwoods, says Australian distributor [Britton Timbers](#).

"We see the supply of tropical hardwoods out of South-East Asia and the Pacific coming to an end – either by supply/demand dynamics, or by continuing pressure against illegal logging," says director Dominic McNeil.

"Demand from architects, builders and the general public for certified sustainable products is also increasing, and when it comes to hardwoods, there simply isn't enough to go around - even in Australia.

"But finding a durable, certified alternative that doesn't come from the tropics is not easy. So we turned the problem on its head and found naturally nondurable but totally sustainable hardwoods in the United States that have been made durable by the Cambia thermal modification (torrefaction) process."

Five years ago, Northland Forest Products in New Hampshire – one of Britton's major US hardwood suppliers – installed a Cambia oven to process their FSC-certified white ash, soft maple, red oak and yellow poplar for domestic and international markets. Since then, demand for this thermally modified wood has rapidly increased in Australia, especially in the last two years.

"Joiners are a big part of our clientele and they are looking for alternatives to the likes of New Guinea rosewood and surian from South-East Asia. Cambia comes fully certified and our customers also like the chocolate-brown colour – particularly the torrefied ash with its beautiful grain."

Thermal modification removes natural sugars, preventing the wood from absorbing or giving off water vapour, and developing bacterial decay. Wood exhibiting low Equilibrium Moisture Content (EMC) is resistant to cupping, twisting and warping. "Dimensionally stable wood looks better longer," says McNeil.

Cambia resists decay without the use of added chemicals. Unlike other manufacturing processes that combine numerous constituent components to create a new product, thermal modification uses only heat to change the physical and chemical nature of wood. Additionally, much of the energy required to do the modification also comes directly from the wood – at high heat, combustible organic compounds from the wood become a fuel source. Water is added during the drying process to standardise temperature and reduce checking and splitting in service.

While awareness of Cambia in Australia is still low, McNeil says the thermally modified timber is mainly used for external applications, particularly architectural cladding, feature walls, decking, window and door joinery, as well



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as kitchen cabinet doors. Application in the US market covers flooring, outdoor furniture, playgrounds, spas and pool areas.

Available in a rich range of colours, Cambia, when used outside, will weather just like any other normal timber and turn grey over time. However, the great advantage with Cambia is its stability, says McNeil. "You don't have any cell collapse or bound water, which greatly limits movement."

Cambia comes in a range of timber species but strongly grained American white ash and American soft maple are particularly popular in Australia.

"There are other options but the architectural market really likes the grain, which is why US timbers are used here in the first place." Richness of the colour is determined by a combination of the species and the amount of time the wood spends in the kiln.

Cambia also comes in dimensions not available in other species.

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