

Beetle-affected pine shines in specialty plywood tests

FORESTRY INNOVATION INVESTMENT

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Uppodate
MOUNTAIN PINE BEETLE

Beetle-affected wood could be a profitable replacement for traditional softwood feedstock in specialty plywood, researchers have found.

B.C. Interior lodgepole pine is already valued for the properties it brings to engineered wood products such as plywood. Now tests show that lodgepole pine attacked by mountain pine beetle makes veneer that is almost as strong as Douglas-fir in bending tests, and significantly stronger than the normal supply of spruce-pine-fir (SPF). The recovery loss experienced in processing brittle beetle-affected wood could be offset by higher prices available for products such as high-end concrete forms.

Based on their results, researchers at FPIinnovations-Forintek say it might be technically feasible to also use beetle-attacked veneer in other high-value plywood and laminated veneer lumber (LVL) products such as bridge decks, truck and trailer decks, container floors, upholstered furniture frames, pallets and pre-fab panels requiring higher stiffness and strength.

To derive maximum value from beetle-attacked wood, the researchers strongly recommend veneer stress grading that rates elasticity or bending strength. This system yielded about 20% more in the higher grade outturn for beetle-attacked veneer, compared to the control SPF veneer. In addition, beetle-affected veneer can quite easily be sorted into distinct and



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uniform elasticity/density groups, an advantage when making consistent engineered wood products such as specialty plywood and LVL.

Researchers used Forintek's pilot plant to produce a variety of plywood types. Five-ply single-grade beetle-killed product, with non-bluestain wood as the outer plies, yielded satisfactory appearance and superior parallel ply bending performance and gluebond

quality. Using a variety of beetle-killed grades within the product helped utilize lower bending-strength veneer without noticeably diminishing gluebond quality and bending performance.

Beetle-killed plywood demonstrated less dimensional stability, with 24-hour water absorption and thickness swell about twice those of mixed-grade Douglas-fir plywood. This challenge can be alleviated by using some Douglas-fir within the core plies, and on the outer faces.

The research report contains benchmark results for beetle-killed veneer that manufacturers can use to assess the feasibility of using it either in their own specialty plywood line or for sale to LVL mills.

FOR THE FULL REPORT GO TO WWW.BCFII.CA/MPB/
AND DOWNLOAD THE REPORT "MPB-07-028:
HIGHER VALUE FROM MPB FOR SPECIALTY PLYWOOD"



Forestry Innovation Investment is a British Columbia government corporation investing in initiatives to help market BC forest products and promotes our sustainable forest practices to the world. FII's Mountain Pine Beetle Program supports the government's Mountain Pine Beetle Action Plan and its objective to maximize the economic value of mountain pine beetle wood. FII does this through marketing activities and research into new products and manufacturing processes for mountain pine beetle wood.

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