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Freres builds for the future with new mass plywood panels

- [KYLE ODEGARD Albany Democrat-Herald](#)
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Tyler Freres, vice president of sales for Freres Lumber Co., walked through a new manufacturing plant between Mill City and Lyons, off of Cedar Mill Road, and pointed out a stack of wood panels destined for Oregon State University this week.

“I don’t even think we’ve started to tap the products and the projects we can make out of this,” Freres said.

Freres Lumber Co.’s mass plywood panels were certified for use at the end of July, and the product is already being used in buildings and for other construction purposes. And Freres is thinking big.

“We have quite a bit of projects in the works, probably 14 to 16 projects quoted,” said Freres, whose ideas led to the creation of the mass plywood panels by his family’s company.

The OSU shipment is the final delivery of the panels to be used in two new buildings that will form the Oregon Forest Science Center on campus, which is estimated to cost \$80 million and scheduled to open in the fall of 2019.

The mass plywood panels will be used for the roof of the George W. Peavy Forest Science Center, and for the interior and exterior walls of the nearby A.A. “Red” Emmerson Advanced Wood Products Laboratory.

Both buildings are showcasing innovative wood products made in Oregon, and the mass plywood panels are the latest entry into the market. Freres Lumber was only the third United States producer of mass timber panels to meet the Engineered Wood Association’s standards.

The mass plywood panels are engineered mass timber panels assembled by combining densely layered, extremely thin layers of Douglas fir veneers. The process creates a large-format engineered wood platform that can be cut to exact specifications.



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The veneer-based product also may give Freres a competitive edge against other mass timber panels. The mass plywood panels use 20 to 30 percent less wood, cost less, weigh less and are as strong or stronger than lumber-based cross-laminated timber.

And the panels can be massive, measuring up to 48-feet long, 12-feet wide and a foot thick.

“The construction, look and atmosphere of the (Oregon Forest Science Center) complex will reinforce Oregon State University’s international status as a premier institution devoted to improving the health of our forest landscapes and ecosystems,” said Anthony Davis, interim dean of the OSU College of Forestry, in a news release.

“We are dedicated to seeking out innovative partners like Freres Lumber, who want to develop sustainable solutions while also creating economic vitality,” he added.

The Oregon Forest Science Center is the largest commercial project for Freres Lumber’s mass plywood panels to date. That’s largely because the product is so new, and projects take months of lead time. “You’re really better off custom-making these panels for every single order,” Freres said.

Last week, another of shipment of mass plywood panels was headed to the Adidas headquarters in Portland. The panels will be used as a massive ground cover, so that cranes and other equipment for a construction project won’t rip up the terrain at the footwear company’s office complex.

The panels also are being used to cover for a bridge renovation in Stayton, to save railroad tracks underneath from being damaged, to create staircases in a Portland building, to build an A-frame house in Snoqualmie Pass in Washington, and for other construction projects, Freres said. The company also is donating wood for the Oregon Museum of Science and Industry’s “shake house,” which provides a visceral example of what happens to a structure during an earthquake.

Freres hopes the panels will be used in projects closer to Lyons and Mill City, and also aims to have them approved to go up to 2-feet thick, which would allow them to be used in columns for construction.

“Our goal is to make every structural element for a building project,” Freres said.

“This is the beginning of a huge beneficial movement for the industry,” he said later.

Cross-laminated woes

While mass timber could be a game-changer for construction, everything hasn’t been rosy.

In March, two layers of a massive 4-foot by 20-foot cross-laminated timber panel used in the Peavy Hall construction delaminated and fell to the floor. No one was hurt in the incident, but it caused construction delays lasting for months and raised questions about the reliability of cross-laminated timber and other types of mass timber technology.



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The issued was traced to a glitch in the manufacturing process at the DR Johnson mill in Riddle, where preheating of boards resulted in improper curing of adhesives holding the cross-laminated layers of wood together. Cross-laminated panels that already had been installed at Peavy had to be evaluated for potential problems, and nearly 100 were identified for replacement.

The Peavy Hall issue put extra scrutiny on the similar but different mass plywood panels, and may have delayed the product's certification process, Freres said.

But Freres said the mass plywood panels have dramatically more quality control than cross-laminated timber, and his company's experience with veneers is an advantage, as well.

"We've been gluing wood together for a long time. We understand exactly how to do that," Freres said.

The \$30 million facility constructed to produce mass plywood panels was created with that product exactly in mind, as well.

Freres said that the facility has radiant heat from the floors to control the temperature, which ensures that the panels perform as designed.

With the Peavy Hall panels, DR Johnson used propane heaters to warm up the wood before gluing sections together during a cold winter, Freres said.

"It's really a shame, but it does indicate the learning curve that there is in the industry," he added.

Freres stressed the environmental nature of timber products, which are renewable, versus concrete and steel construction.

"Can you imagine a more sustainable resource than wood?" he asked. "This is the most environmental material we can use for building again."

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