NEWS RELEASE
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Freres Lumber Mass Plywood Panels Awarded Patents in U.S. and Canada; MPP Passes Fire Safety Standards

LYONS, ORE. 31 Jan., 2019—Freres Lumber Company today announced that it has been granted a Canadian patent for its revolutionary Mass Plywood Panel (MPP), which is currently the only mass timber panel constructed entirely from Structural Composite Lumber (SCL). MPP will allow builders to build taller structures for less cost, faster, while using less wood than with any other mass timber product on the market today. The company received the Canadian Patent the day after the hard copy of their U.S. patent arrived in the mail. Patents have also been granted in Australia and New Zealand.

Additionally, Freres Lumber received fire test results from Southwest Research Institute (SwRI), verifying that MPP demonstrates the necessary life safety fire protection performance for single- and multi-family, and multi-story structures up to 18 stories high. MPP has met or exceeded multiple industry building and fire safety standards tests, including APA certification and SwRI fire safety performance evaluation.

“Freres Lumber has spent the last three years researching, developing and testing MPP, and our hard work has come to fruition with the patents being awarded and industry tests verifying the strength, safety and versatility of this product,” said Tyler Freres, vice president for Freres Lumber. “The ASTM E119 and E84 tests are rigorous tests that exposed the panels to intensely hot flames. The test results allow designers and developers to use MPP in buildings that require fire resistance ratings.”

E119 and E84 Testing

To conduct the fire-resistance E119 test, a sample of the test material is exposed to certain benchmark temperatures that are reached over a controlled period of time. The test provides a relative measurement of the test materials’ fire resistance when exposed to the standard conditions of a fire.

During testing of the MPP panels for the E119 standard, test chamber temperatures reached in excess of 1000 degrees Celsius. MPP floors, MPP walls and char rate were evaluated. For the floor panel test, an 18,100-pound weight load was added that the panel had to withstand during the two-hour fire test. The panel passed the two-hour fire exposure and the extinguish test with a typical garden hose. The results indicate that the floor will last two hours under design load. This allows occupants to escape while providing time for the fire services to put out the fire.

The wall panel test had a 147,000-pound weight load applied. During the wall test, the fire temperatures were elevated throughout the entire test, reaching up to 1200 degrees Celsius. The wall panel met a 1.5-hour fire exposure at these elevated temperatures.

The E84 test is designed to show comparative measurements of surface flame and smoke development of exposed building materials such as walls, floors and ceilings. In the E84 test, the MPP met a Class B (45), which is typical of Douglas fir plywood.

“We are very pleased with the results,” said Austin Basl, structural engineer for Freres Lumber. “The results show how predictable the charring of the wood is and thus can be used confidently in design. So much so, in fact, that the theoretical model matched the test results perfectly. Additionally,

engineers can calculate the strength of the panel to ensure it still can hold the required load to keep the building strong even after a significant fire."

Wood, concrete and steel behave differently in fires; concrete deteriorates, steel becomes ductile and bends, and wood chars. Tests have shown that sometimes mass timber will self-extinguish. The bottom line is, MPP has been tested and passed the life safety fire performance requirements for buildings that require a 2-hour fire rating for the floor assembly.

Builders looking to use MPP will be able to do so more affordably, faster and with comparable structural integrity and fire safety to concrete and steel and other Cross-Laminated Timber (CLT) offerings. Because MPP is composed of extremely thin and dense layers Douglas Fir veneers, it has a number of structural and environmental benefits. MPP uses approximately 20 percent less wood than CLT MPP can be constructed from small diameter timber (as small as 5" in diameter) to create large format panels; MPP costs less; MPP is lighter than lumber-based CLT and is as strong or stronger; it produces fewer CO2 emissions than other building materials; and MPP is made from a renewable resource, unlike concrete and steel.

Southwest Research Institute (SwRI) Fire Technology Department conducts standard tests in accordance with strict standard fire test methods used in the construction, transportation and public utilities industries. SwRI's testing laboratories and Listing, Labeling and Follow-up Inspections Program are accredited through federal, state, international and other various agencies.

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About Freres Lumber Company
Established in 1922, Freres Lumber is among Oregon's premier engineered wood products manufacturing companies. Specializing in bringing high-quality wood products to market, Freres manufactures finished plywood products, lumber, veneers and structural composite lumber, and continues to transform and modernize building practices with its latest innovation, Mass Plywood Panels (MPP). The company follows sustainable management practices throughout its three operations—Freres Lumber Co., Freres Timber and Evergreen BioPower LCC, using 100 percent of its materials in its products or as fuel. Freres is committed to providing family wage jobs, and operates six wood products facilities, including a cogeneration facility. For more information, visit www.frereslumber.com or call 503-859-2121.

About Southwest Research Institute
Southwest Research Institute (SwRI) is an independent, nonprofit, applied engineering and physical sciences research and development organization using multidisciplinary approaches to problem solving. The Institute occupies 1,200 acres in San Antonio, Texas, and provides more than 2 million square feet of laboratories, test facilities, workshops, and offices for nearly 2,600 employees who perform contract work for industry and government clients.