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OSU Helps Oregon Company Develop Earthquake-Proof Wine Rack

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CORVALLIS, Ore. – Thanks to rigorous seismic testing at the Oregon Wood Innovation Center at Oregon State University, a Eugene, Ore.-based wood products company is marketing a new wood wine rack that can withstand strong earthquakes, keeping wine bottles secure in seismically sensitive locations.

Newood Display Fixture Mfg. Co. launched its MightyPine shelving line after OSU wood science professor Rakesh Gupta and colleagues at the [Oregon Wood Innovation Center](#) subjected the rack to seismic testing that included two weeks of simulated earthquakes measuring up to 7.1 on the Richter scale. The shelving units are primarily designed for wine departments in retail stores.

The OSU researchers loaded 14 of the seven-foot tall units with 1,200 pounds, or the equivalent of approximately 30 cases of wine, then used a shake table to subject the shelves to simulated 6.2 and 7.1 magnitude earthquakes.

When all the shaking was over, none of the units had failed during the testing.

“The people at Newood were very happy with the results,” said Gupta, explaining that because wood is flexible, it can withstand earthquakes better than other, more rigid materials such as steel.

The shelves’ strength is achieved by laminating layers of Oregon pine used for both the frames and the shelves, said Gerry Moshofsky, CEO of Newood, whose company has manufactured wood wine fixtures since the early 1980s.

“Until the Northridge, California earthquake in 1994, we supplied a large percentage of wood wine fixtures used by major grocery chains like Von’s (now Safeway), Lucky’s, Ralph’s and Food 4 Less,” Moshofsky said. “But during the quake, wood fixtures didn’t hold up as well as steel, so the grocery chains changed back to steel.”

In an effort to regain some of the market share lost after the earthquake, the company developed a “seismically resistant” wood fixture using laminated layers of pine, which turned out to be so strong, the company named it MightyPine.

“Our engineer recommended we take advantage of OSU’s state-of-the-art testing laboratory at the Wood Innovation Center,” Moshofsky said. “So we did, and the results were very good. Having such a high quality laboratory so close is a real plus for Oregon businesses. OSU researchers Rakesh Gupta, Milo Clauson and Kenny Martin offered both expertise and excellent service to our company.”

Scott Leavengood, director of the Oregon Wood Innovation Center, said the testing is an example of how OSU researchers are helping Oregon businesses be more successful and compete in the global marketplace.

“Here’s an Oregon wood products company that has designed a shelving system that outperforms current systems made of steel and other non-renewable materials,” Leavengood said. “They use Oregon pine, Oregon labor, and a testing laboratory right here at OSU...that’s all good news for Oregon’s economy.”

About Oregon State University: OSU is one of only two U.S. universities designated a land-, sea-, space- and sun-grant institution. OSU is also Oregon’s only university designated in the Carnegie Foundation’s top tier for research institutions, garnering more than 60 percent of the total federal and private research funding in the Oregon University System.