

Could save \$75 million yearly

# USDA invention eases the making of plywood

MADISON, Wis. — Listen to the makers of plywood talk about their headaches and you might get the idea they drive racing cars, raise apples or manufacture candy for a living.

Words like "spinout," "large core" and "soft center" figure big in their vocabulary. The reason, says a researcher with the U.S. Department of Agriculture, is that these terms describe three problems that cost this country's wood products industry millions of dollars each year.

Now, says a USDA Forest Service scientist, the shop talk should turn more upbeat.

John Youngquist, a research project leader at USDA's Forest Products Laboratory here, says he and his co-workers have solved all three problems with one invention. The result, he estimates, can be a savings of \$75 million a year to the wood products industry.

Since the invention can favorably influence plywood production costs as well as supplies of wood products, he said, the prices you pay at the lumber yard may be affected in the long run as commercial producers adopt the

technology.

"Veneers used in plywood and furniture are made by peeling sheets of wood from high quality logs," said Youngquist. "Veneers are valuable, so we need to get the most from every log."

Youngquist said the Forest Service's solution to spinout, large cores and soft centers is called the "powered backup roll." Its inventors are research engineers Frank Fronczak and John Hunt of USDA's Forest Products Laboratory here.

"Basically, the device is two hydraulically-powered rollers which provide supplementary torque — the force needed to turn the log — to the outside of logs being peeled for veneer," Youngquist said.

"Conventional lathes used for peeling logs to produce veneer apply torque directly to the center of the log through the use of pronged shafts clamped to each end," he said. "Unfortunately, about 20 to 35 percent of all logs cannot be peeled because their centers are too soft to take the pressures produced by lathes."

"The powered backup roll

eliminates this problem in most cases by reducing the torque on the center of the log and transferring it to the log's sturdier outside surface."

Youngquist said spinout occurs when the force needed to turn the log in the lathe is greater than the force used to grip the ends of the log. When this happens, the wood breaks, the clamplike devices used for gripping the log spin free, and the log becomes useless for veneer. Five to eight percent of the logs selected for veneer production are damaged in this way.

Powered backup roll turns the log from its outside surface to greatly reduce the chances of spinout.

"Another problem is that a large core of the log often is left on the lathe because the chunks (prongs) used to grip and turn the log are so big they prevent the log from being peeled near the core," Youngquist said.

"By applying torque to the outside, the device allows smaller chunks to be used, thus permitting more veneer to be peeled from each log."

Studies show that the powered

backup roll's potential for reducing the diameter of unused log cores from 4½ inches to 3½ inches could save the American wood products industry \$40 million each year. Eliminating spinout could save another \$35 million annually, the researcher said.

"One of the best things about this device is that its use has no effect on the quality or thickness of the veneer that is produced," Youngquist said. "Using Douglas fir logs, we have produced veneers ranging from one-tenth to one-thirty-second of an inch thick without any problems. The process also is compatible with most conventional lathes."

A Boise Cascade Corporation

plywood plant in Yakima, Wash., is giving the powered backup roll a try, Youngquist said. Steve Loehnertz of the Forest Products Laboratory is providing technical assistance in monitoring the effectiveness of this first industrial production prototype, which was built by the Premier Gear and Machine Works of Portland, Ore.

If the device proves to be as useful as tests indicate, and the originators believe it will, the powered backup roll may become a standard feature of plywood plants in the near future.

"We've applied for a patent in the public's name," he said. "This would make the device available to everyone."

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the active age groups, especially children. These deaths, by drowning, are due to swimming accidents, falls into the water while working or playing on or near bodies of water, and accidents involving small boats. Safety measures that can be built into ponds include evenly grading of spoil areas, avoiding steep slopes and holes in the pond, removing snags, big rocks and trash that could be a hazard to swimmers and boats.

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