

# EXPLORING Value-added options

## EDGE-GLUED PANELS AND BLANKS OFFER VALUE-ADDED OPPORTUNITIES

**A**s sawmills search for new opportunities to add value to rough sawn lumber, many consider producing dimension parts as one solution. Assembling dimension parts into edge-glued panels or standard blanks can add even further value. Blanks are defined as pieces of solid wood (which may be edge-glued) that are manufactured to a predetermined size.

Secondary manufacturers can further process these blanks into specific products such as furniture or cabinet parts. Typical uses for edge-glued panels (blanks) include table tops, drawer fronts, upholstered furniture frames, cabinet fronts, and shelving products.

Another important market for blanks and edge-glued panels is the export market. International firms are increasing their use of panels and blanks as lumber prices increase and as their processing costs go up. In 1995 it was estimated that over 16 percent of dimension products were further manufactured into edge-glued panels. For the sawmill, edge-glued panels (blanks) can offer better recovery from lower grade material and an opportunity to utilize short-length lumber.

Edge-glued panels (blanks) utilize kiln dried lumber that has less than a seven percent moisture content. The lumber is processed in a rough mill. Generally it is planed to a nominal 4/4" or 5/4" thickness and cross-cut first to gain the longest possible clear cuttings. Random width cuttings are then ripped from the cut-to-length boards. Shorter clear boards are salvaged by further cross-cutting to eliminate defects.

Typical rough mill yields average between 55 to 65 percent. Clear cuttings are then matched for color and grain patterns, put into panel sets, and edge-glued. Once the glue is cured, the panels are planed to the final required thickness. Although the cross-cut first roughmill is common, there has been increased interest in a rip-first roughmill in recent years. The USDA Forest Service in Princeton, West Virginia, has a computer yield program (ROMI-RIP) available to assist manufacturers who are interested in a rip-first operation. The organization is currently developing a companion cross-cut first yield program.

Machinery needed to manufacture edge-glued panels includes cross-cut saws, planers, ripsaws, and clamp carriers for the gluing operation. Gluing may be manual or automatic, A manu-

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al gluing station will use two to three people with a glue reel and produce two to four MBF a day. An electronic gluing station will use three to four workers and can produce more than 15 MBF a day. A rough mill requires a large area for storage and work-in-progress, while an edge-glued panel operation also requires material handling equipment.

The most common species used for edge-glued panels include red and white oak, hard and soft maple, poplar, cherry, ash, white pine, and Southern yellow pine. Some common size blanks are 4/4" thick, 18-26" wide and range in length from 15" to 100". The Wood Component Manufacturers Association has established standard rules and specifications for dimension and woodwork. The organization's rulebook covers tolerances, grading, inspection procedures, and machining.

One of the most important aspects of edge-glued panel manufacturing is proper color matching of the individual pieces composing a panel. The color matching process is difficult, quite labor intensive, and time consuming, but increases the quality and value of the panels. Because individual workers have different perceptions of color shades and uniformity, it is difficult to maintain a consistent uniform color in the edge-glued panel.

Recent research in Virginia Tech's department of wood science and forest products, in cooperation with the USDA Forest Service Research at Virginia Tech and NOVA Technologies of Charlotte, North Carolina, has developed an automatic color sorting system for hardwood edge-glued panel parts. The system uses high speed color line cameras to scan both sides of each part. Data from each camera is processed

on a personal computer and each scanned part is assigned a color class and marked with the best face.

Associations involved with this market include the Wood Component Manufacturers Association in Marietta, Georgia, and the Wood Products Manufacturers Association in Westminster, Massachusetts. Information on the color matching system and ROMI-RIP program can be attained from the USDA Forest Service Northeastern Forest Experiment Station in Princeton, West Virginia (phone 540/ 231-5341).

Edge-glued panels and blanks offer sawmills another opportunity to add value to rough lumber-. As with all new product possibilities, the sawmill must determine the needs of its customers first. The tolerances and quality expected of finished panels are much higher than those of rough sawn lumber. Panels for the export market may require different specifications than for the domestic market. However, mills can earn higher profits as well as utilize shorter lengths and lower grades of lumber by successfully serving this market. As outsourcing becomes more common in the furniture and cabinet industries, sawmills that manufacture quality edge-glued panels and blanks will find broader markets for their products.

*Editor's Note: Faculty at the Center for Forest Products Marketing at Virginia Polytechnic Institute and State University in Blacksburg, Virginia are taking a look at a variety of value-added options for today's forest products industry through a series of features in Southern Lumberman. Bob Smith, who contributed the above column, is an assistant professor/extension specialist. Phil Araman is project leader for the USDA Forest Service Southern Research Station located at Virginia Tech. □*