

# Fire Engineering®

## Laminated Veneer Lumber

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Laminated veneer lumber (LVL) is one of the types of “manufactured wood” or “engineered lumber” that were developed in the late 20th century. Sawn lumber longer than 24 feet has never been common. Since most sawn lumber today comes from second-growth timber or tree farms, it is difficult to find sawn lumber longer than 16 feet that is straight and strong enough, and of good enough quality, to be used as floor joists and rafters.



LVLs are built up of layers of veneer that are rotary-peeled from logs. These layers of veneer are coated with high-strength glue and stacked in a large billet to the desired length, width, and thickness. Usually, the grain in all of the layers is parallel. The LVL billet is cured in a heated press, which brings it to its final thickness

and sets the glue. Then the billet is sawn into standard lumber dimensions for use as beams and joists in construction, and for flanges in wood trusses and wood I-beams. Photo 1 shows a comparison between 2 x 12 LVL beams and the sawn 2 x 6, 2 x 4, and 2 x 12 lumber stored behind them.

LVLs are advertised to be straighter, more uniform, and stronger than sawn lumber of the same dimensions. Manufacturers' engineering information allows spans 25 percent longer for LVLs than for sawn lumber of the same dimension. Although they are made with water-resistant glue, they are not recommended for continuous exposure to weather without protection. They are stocked by



lumberyards in longer lengths than any sawn lumber, and are available by special order in almost any length. Photo 2 (above) shows a large house under construction. The rafters shown in the higher part of the house at the right are 40-foot 2 × 12 LVLs, with a 2 × 18 LVL ridge board. The rafters shown in the lower part at the left are 26-foot 2 × 10 LVLs with a 2 × 12 LVL ridge-board. Both roofs will be sheathed with plywood and covered with slate.



Photo 3 shows wood I-beams with LVL flanges and high-density oriented strand board (OSB) webs, supported by galvanized steel joist hangers from LVL beams and girders.

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