

Glu-Lams, LVLs, OSBs, and Steel

Like everything else in these seemingly fast paced times we live in, the very wood that is used to remodel or build your home is likely to change in the near future. Some of the more traditional "new products" are "glu-lams" and structural steel. More recent innovations include wood I joists, LVLs and parallel strand lumber.

"I joists" are like steel I beams in shape. They have "chords" at the top and bottom usually made up of glued together dimensional lumber, and a web or center section made up of a composite sheet board product like plywood or OSB. OSB is oriented strand board made up of wood chips and glue and is a replacement for plywood. "I joists" have been routinely used on commercial projects for years and are also relatively common on multi-family projects. You see them increasingly in custom new homes. They are rarely used in residential remodeling, however. There *are* some good reasons for that. First of all, they can cost more than dimensional lumber. When a plumber whips out his Sawsall and starts hacking away at an "I joist" to make room for the rough plumbing of a toilet, major headaches can result since these are engineered products that function like a truss. *They usually can't be repaired in the field!*

In new homes where layouts can be carefully controlled to avoid plumbing and duct work conflicts, "I joists" have been used more frequently to good advantage. As trades people become more familiar with these products, we expect to see them used more routinely on all types of residential projects. The last area where they are likely to be utilized is for roof construction. This is due to a difficulty in forming the angles and complex connections that go along with the more interesting roof shapes typical in both traditional and modern designs.

One of the new wood products that is routinely used on our residential remodeling

projects is LVL beams or "laminated veneer lumber." This lumber is made up of thin sheets of glued wood veneer--just like plywood. It has the advantage of dimensional stability, as well as being stronger than glu-lams. When large sizes are called for, we take advantage of its relatively light weight and ease of handling by using multiple members. This allows carpenters to assemble by hand some amazing beams in the field with relative ease. An equivalent glu-lam might require a crane to place it! Although a bit more costly than glu-lams, they are presently cost effective on all types of wood frame projects due to their handling advantages which saves in labor costs. One area that we have found a bit troublesome is that each manufacturer of LVLs uses different allowable stress grading, which means that designs may be "brand specific." It's safest to use "mid level" stress values in design to avoid confusion and unnecessary expense.

"Parallel strand lumber" is the latest in wood innovations to reach the mainstream marketplace. It is made up of chips of wood glued together, often using species of wood like Aspen that were formally considered "trash." Mostly currently used for beams, it can also be used for columns. In fact, it will shortly become available in studs designed to be used in place of the time honored 2x4. Right now, we don't routinely use parallel strand lumber in most residential structural designs. Mostly, this is due to availability of other materials that are better known and lower in cost. We expect this latest wood technology will become a major part of wood construction in just the next few years, however.

What about steel? Join me in our next column as we look at the pros and cons of light gauge steel framing as a substitute for traditional wood construction.

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