

Frequently Asked Questions

Structural Composite Lumber in Trusses by Rachel Smith

The lumber used in most metal plate connected wood trusses is either visually or mechanically graded solid sawn dimensional lumber. However, ANSI/TPI 1-1995 and the newly released ANSI/TPI 1-2002 National Design Standard for Metal Plate Connected Wood Truss Construction both allow the option of using structural composite lumber (SCL) products such as laminated veneer lumber (LVL), laminated strand lumber (LSL), and parallel strand lumber (PSL). These engineered wood products can conceivably compete with sawn lumber and complement it in truss designs. The qualification in TPI 1 is that the truss designs incorporating these products must be reviewed and approved by the Truss Designer. Even though the option is available, some structural composite lumber may not be practical in metal plate connected truss applications.

QUESTION:

As a truss manufacturer, how can I incorporate structural composite lumber (SCL) into my truss designs?

ANSWER:

In theory, any type of lumber product can be used in wood trusses as long as the lumber and plate design values for that product are available. In reality, you should check first with your software provider to see if they have values for the product you are considering and talk with your engineer to see if this is something that can be readily incorporated into the design process.

We are aware of several products that have been tested and evaluated by software suppliers. Check with your software provider to find out which products have been incorporated into their truss design process and then they can be specified in the truss design and plated just like any other standard lumber species and grade. Because these engineered products can have significantly higher strength properties than standard lumber grades, it makes them a good choice for girders, attic frame bottom chords or tail-bearing top chords.

Some other advantages to higher strength structural lumber products are that longer lengths reduce the number of chord splices, greater strength to size ratio allowing smaller member sizing or custom member sizing, no knots and less shrinkage and splitting. These advantages come at a cost, SCL is generally more expensive per board foot than sawn lumber. If a larger attic room can be created or girder ply can be eliminated, there is additional value for the cost differential. The overall value must be calculated as part of the entire cost equation: inventory, design, manufacture, installation, site performance and customer satisfaction.

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