



BEYOND THE BASICS: Dimensional & Engineered Lumber

Written by Greg Crabtree, Isaman Design

Dimensional & Engineered Lumber

As the sizes and quality of trees being harvested continues to decline, due to some current harvesting processes and overall demand for the product, more and more people are looking away from traditional dimensional lumber and towards engineered lumber as a replacement in the building industry.

Dimensional lumber is a term for lumber or wood used for building that is finished and cut to standardized widths and depths such as 2x4, 2x6, 4x4, and so on. These numbers express the size of the lumber in inches once rough sawn in the mill, while actual finished dimensions of the lumber are less due to the drying and planing process.

Dimensional lumber most often refers to a board cut and milled from a single tree; while there are “green” options available for dimensional lumber (such as FSC certified lumber), other options are available; most notably, engineered lumber. In some cases, engineered lumber can be considerably stronger and more cost effective than dimensional lumber, particularly as the length of spans increase and/or if the loads are greater in a particular area. Additionally, the expansion & contraction of drying is reduced in engineered lumber.

There are many types of engineered lumber used in many different applications. Common types of engineered lumber are:



Glulam

rafters in roof framing.

Glulam – is dimensional lumber 2x4's or 2x6's glued together to make beams that range in size from 4x8 up to 6x20 and larger.

Laminated Veneer Lumber (LVL) – is composed of thin layers or veneers of wood glued together and sawn to make dimensional lumber in sizes ranging from 2x4's to 4x18's or larger by special order. This class of lumber is used as studs, headers, rim joists, beams, columns, and girders in floor framing and as



Laminated Veneer Lumber (LVL)



Oriented Strand Board (OSB)

Oriented Strand Board (OSB) – is an alternative to plywood that uses small chips of wood layered in specific orientations so as to create strength. OSB can be used in many applications such as wall & roof sheathing, Wood I-beam webs, and subfloors.



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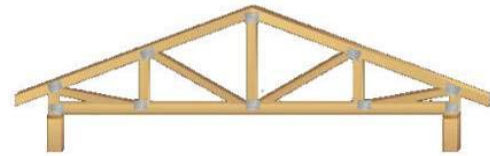


Wood I-Beams

Wood I-Beams - are composed of a center web of plywood or oriented strand board (OSB) and top and bottom flanges made of LVL or solid wood. Wood I-beams are used as floor joists and as rafters in roof framing.

Manufactured Trusses - are

structural elements that have been engineered and manufactured to meet high design loads using small dimension lumber held together by metal plates. Using manufactured trusses allows the engineered use of 2x4's or 2x6's in place of large dimensional lumber in floor and roof framing applications.



Manufactured Trusses

In addition to the above, there are other products on the market (made by specific manufacturers) such as LSLs, PSLs, and SpaceJoists that work well in certain applications. It is important to ask a professional for appropriate applications of all these products, as some may perform specific tasks better than others.

By incorporating engineered lumber into your building project, you can help reduce the building industry's heavy demand for traditional dimensional lumber taken from our forests.

SLO Green Build Points

When using engineered lumber products for interior applications, be sure to use products that do not have added urea-formaldehyde.

Category D. Structural Frame & Building Envelope

3. Use Engineered Lumber (Beams and Headers, Wood I-Joists or Web Trusses for Floors, etc.) 1-4 points
6. Use Oriented Strand Board (OSB) (Subfloor, Sheathing) 1-2 points

Total available = 6 pts

Resources:

www.austinenergy.com

www.neo.ne.gov