



Weyerhaeuser



**INNOVATIVE FRAMING TECHNOLOGIES  
SAVE TIME AND MONEY**

**CONSTRUCT A BETTER PERFORMING HOME BY USING  
ENGINEERED WOOD PRODUCTS IN CRITICAL AREAS**





**Framing is the hidden backbone of residential construction:** defining the space, supporting the load, and providing the structural stability every house depends on. Traditionally, this has meant heavy beams made from sawn lumber: strong but variable, subject to warping and shrinking. But an exciting revolution has been taking place, where engineered wood products combine wood's natural strength, beauty, and versatility with precision engineering for stronger, more consistent, and more stable residential framing.



Today's wood-product technologies deliver strong, straight, and reliable framing components for builders. Products that exhibit consistent moisture content, fit precisely, and stay stable and true for a very long time. Armed with a powerful array of these framing components, savvy designers and builders are delivering high-performance homes that live up to the demands of modern residential customers, because they're anchored by efficient framing technologies from top to bottom.

#### INSIDE THE ENGINEERED WOOD PRODUCT REVOLUTION

Wood is by nature a variable material, with knotholes, twisting, and wane that varies from board to board. That variability makes for beautiful coffee tables...but in floor joists, inconsistency is the enemy. Framers want strength they can rely on, and beams that stay straight and true every single time.

To achieve that ideal, engineered wood products (EWP) are manufactured for specific performance characteristics important to homebuilders, including strength, stiffness, and consistency. EWP manufacturers begin by breaking logs down into smaller, more controllable components—strands and veneers that can be reassembled in innovative ways, delivering strength and stability. Examples of these products include Microllam® LVL (laminated veneer lumber) and Parallam® PSL (parallel strand lumber) beams, TimberStrand® LSL (laminated strand lumber) studs and joists, and OSB (oriented-strand board) panel sheathing.



“By tightly managing the way these products are made, we can improve performance,” explains Justin Maghirang, a product engineer at Weyerhaeuser, a leading manufacturer of wood building products. “With a tree, you get what you get—variability in strength. But when we can grade veneers and control strand size to our specifications, we can build a consistent product with enhanced structural properties.”

Beams made of Microllam® LVL are one example of how logs can be broken down and recombined to form something stronger. To produce Microllam® LVL beams, thin wood veneers are peeled from logs and precisely graded based on a combination of unique visual and strength characteristics. Carefully selected grades are coated with adhesive, placed in a distinct lay-up pattern, then pressed and heated to form engineered beams in precise lengths, widths, and depths—beams that boast strength and stability far beyond those of their solid-sawn cousins. Parallam® PSL products are another example: beams engineered for strength and stiffness that don’t compromise on visual appeal, and are often used for exposed beams.

I-joists are another exciting technology that combines the performance attributes of two engineered materials to create a single product. Trus Joist® has been an innovative leader in the I-joist market since inventing the technology in 1969. The TJI® joist, constructed with Microllam® LVL flanges and an OSB web, boasts a strength-to-weight ratio that far exceeds that of rectangular members. As a result, it can support much longer spans than traditional joists, making larger unobstructed open-floor-plans possible. Similar to Microllam® LVL beams, TJI® joists deliver stiff and level floors, because they’re engineered to minimize shrinking and twisting. That helps eliminate a lot of floor issues that typically plague residential construction, including squeaks, vibration, cracked drywall, gapped moldings, and jammed doors. Additionally, TJI® joists are capable of accommodating larger holes for plumbing and ductwork than traditional joists.



**PUTTING THE TECHNOLOGY TO WORK: BUILDING QUIET, COMFORTABLE FLOORS**

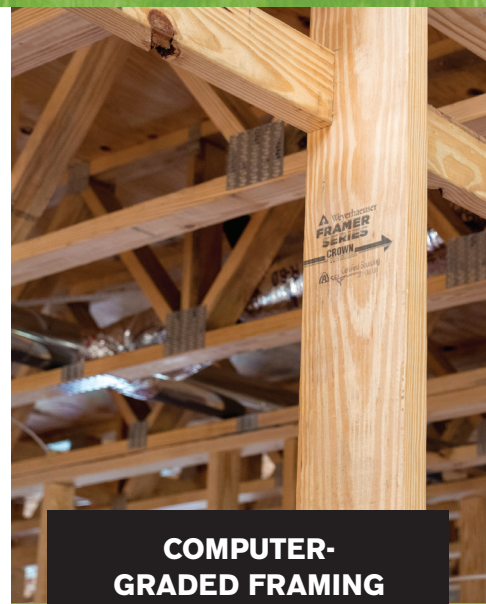
To harness all the advantages of engineered wood products, designers and builders combine these components in a thoughtful, integrated approach. Here's how this works in practice, inside one of the most critical areas of any home: the floor.

A well-built floor is barely noticed by the homeowner, but a substandard floor sticks out like a sore thumb. If it bounces under heavy footsteps, or dishes rattle on the kitchen island, the homeowner won't be happy. And if it isn't perfectly flat—if the subfloor has slight bumps or swelled edges, for example—imperfections will telegraph through the flooring, an especially acute problem with today's thinner, more enhanced finished flooring products.

Framing components from the floor joists down to the sill plate, and the tolerances within which they all fit together, contribute to the feel of a floor. To truly optimize a floor's performance, engineers will often rely on a manufacturer's tools and expertise to help select the best product.

This is where engineered wood products truly shine. Their extremely high degree of dimensional stability and stiffness allow builders to create solid framing systems, and by extension firm, comfortable, level floors that remain that way for the life of a home. Integration of compatible components is key to securing consistent performance over time. For example, the dimensional stability of TimberStrand® LSL Rim Board ensures that the loads from above bypass the ends of the TJI® joists as they are transferred to the level below.

Builders take advantage of the consistent strength, stability, and stiffness of EWP to create efficient floor systems that align with both the floor performance and budget expectations of the client. With strong, dimensionally stable engineered wood joists, beams, and rim boards supporting the floor, the foundation is set to ensure a host of benefits over the life of a home, including moldings that hug the floor, reveals that stay true, windows and doors that operate smoothly, drywall seams that remain aesthetically pleasing, and floors that feel solid and stable.



**COMPUTER-GRADED FRAMING LUMBER IS A CUT ABOVE**

Solid-sawn lumber is an important component of many finely crafted homes, and can still be the better budget choice in many situations. But even here, automated manufacturing tools and technologies are making a difference.

- Weyerhaeuser's Framers Series® lumber uses a computerized grading system that goes far beyond traditional visual grading capabilities to ensure that every piece of lumber starts straight and stays straight. Only a small percentage of solid-sawn boards make the cut.
- Framers Series™ lumber is precision-tested for fiber strength, warranted to resist warping for two years, and treated with a mold-inhibitor. New technology even makes it possible to include a bold arrow on each piece that indicates the crown direction, to speed up installation.
- Machine evaluated lumber (MEL) like Weyerhaeuser's Framers Series® lumber, marries natural wood and engineered wood products together in a well-designed framing package, delivering best-in-class homes at all budget levels.



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Even at the stud level, where solid-sawn wall studs may still be the budget-conscious choice for walls in many parts of the home (see “Computer-Graded Framing Lumber is a Cut Above,” on pg. 4), EWP wall studs like TimberStrand® LSL can deliver unmatched strength and stability where it really matters; for example, tall walls supporting vaulted ceilings and kitchen walls supporting cabinets and tile backsplash.

**HOW  
MOTIVATED  
BUILDERS  
CAN GET  
STARTED**

All of those products can be selected by homebuilders for precise, predictable performance, using optimized product framing packages and a number of powerful design tools.

**FOR CREATING FRAMING PACKAGES SPECIFIC TO YOUR JOBSITE:  
NEXTPHASE SITE SOLUTION**

Weyerhaeuser’s NextPhase® Site Solution combines proven Trus Joist® engineered lumber products with proprietary software and computer-automated saw technology to deliver precision-cut “JobPack” framing packages. With pre-cut components packed and identified in bundles that match framing layouts, these “plug-and-play” floor, wall, and roof framing kits can reduce framing time. Imagine zero time spent sorting through boards, cutting components to length, and dealing with piles of offcuts. NextPhase even has the capability to pre-cut holes for mechanical and electrical components that run through framing members.

**FOR BUILDING THE PERFECT FLOOR: FITTED FLOOR PANELS**

Weyerhaeuser’s Edge™, Edge Gold™, and Diamond™ OSB floor panels come with a variety of features that contribute to a flat and level floor, like easy-fitting tongue-and-groove joints, and edges sealed to resist moisture and swelling. Some products even include a self-draining feature that allows rainwater to drain from the floor during construction.

**FOR UNDERSTANDING WHAT CUSTOMERS LIKE: TJ-PRO™ RATING**

To create TJ-Pro™ Rating, Weyerhaeuser researched more than 600 floor assemblies, developing a points system that correlates predicted floor performance with homeowner satisfaction. TJ-Pro™ Rating is seamlessly integrated into Weyerhaeuser’s Javelin® and Forte® software. (If you would like to have your plans reviewed, simply send an e-mail to [wood@weyerhaeuser.com](mailto:wood@weyerhaeuser.com) with your contact information.)

**This brief article highlights just a few of the many benefits of engineered wood products.  
Go to [www.weyerhaeuser.com](http://www.weyerhaeuser.com) to get the full story.**



# ONE FLOOR. ONE NAME. WEYERHAEUSER. ALWAYS BUILDING.



## WEYERHAEUSER FLOOR SYSTEMS

When floors are engineered together, they work together. Start with the best framing components in the industry, Weyerhaeuser Trus Joist® TJI® Joists, Framers Series™ Lumber and TimberStrand® LSL Rim Board. Pull them together with our Diamond™ subfloor with patented Down Pore® technology and you've got a floor system built to last, from a company that's stood for building since 1900.

Call 888.453.8358 or go to [Weyerhaeuser.com/woodproducts](http://Weyerhaeuser.com/woodproducts) to find your Territory Manager and closest Trus Joist® dealer.

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