



Manufactured Framing Components and Engineered Wood Products Help Enhance New Home Construction

Specialized Products, Services and Software Help Canada's Largest Builder Reduce Material Waste and Costs, While Achieving High Customer Satisfaction

Structural framing accounts for one of the largest components of new home construction costs. By some estimates, framing, trusses and sheathing make-up 20 percent of the costs of building homes. At the same time, framing generates large volumes of jobsite waste in the form of scrap lumber. To help cut down on costs, speed construction, and reduce jobsite waste, more builders are ordering pre-cut framing materials, and, in some cases, pre-built panelized units for floors, walls and roofs. Canada's largest homebuilder, Mattamy Homes, is one company that is increasingly using manufactured framing components and specialty engineered wood products to improve construction efficiency and the quality of its homes.

Historically, homes have largely been framed from scratch, using standard dimension lumber. Builders would order solid sawn lumber and engineered wood products in fixed lengths and cut the materials on site for wall studs, floor and roof joists and all other elements of the structural frame. Now, they have more options for obtaining materials that are pre-cut and pre-built to their specifications, as well as materials offering high-quality performance.

Specialized design software and services available to builders through dealers enable better planning of framing materials. All of the individual members of the frame can be specified at dealer locations and pre-cut to ensure the maximum use of each board. For example, instead of a builder cutting individual six-foot boards from eight-foot 2X4s, the dealer can cut the six-footers from 12-foot lumber, eliminating two feet of scrap from each board cut. Multiplying efficiencies such as

Benefits of Panelized Construction

The Partnership for Advancing Technology in Housing (PATH) – led by the U.S. Department of Housing and Urban Development – reports a number of benefits to builders of using panelized construction techniques:

- Reduce costs by shortening cycle time
- Decrease risk of theft and vandalism
- Reduce on-site labor time and costs and have access to a wider labor pool
- Improve quality and durability versus stick-built construction
- Reduce risk for injuries, especially from falls
- Generate less material scrap

this across the entire frame helps dealers and builders make the most of materials, while reducing job-site waste. After the pieces are cut, they are labeled and bundled for fast and easy assembly at the job site.

Toronto-based Mattamy Homes has increased its investment in building high-quality homes in a factory setting by creating a separate panel manufacturing company known as Stelumar. With Stelumar, Mattamy Homes is substantially increasing its floor and wall panelization capacity over the next several years, with the eventual goal of using panelized components in all of the homes they build. Mattamy is Canada's largest builder; since 1978 the company has constructed more than 25,000 homes in the Greater Toronto Area (GTA).

Stelumar and other Mattamy divisions work closely with their material suppliers to make panelized construction possible. For its panelized floor units, Stelumar is increasingly turning to services offered by iLevel by Weyerhaeuser. Under the NextPhase®-JobPack program, iLevel helps Mattamy optimize framing by providing precision-cut and labeled products. Each component of the frame is prepared according to plans generated by iLevel® Javelin® design software, taking the guesswork out of framing and reducing the likelihood of framing errors.

"Pre-cut materials reduce framing errors by about 50 percent," says Walter Mitchell, Director of Building Technology and Manufacturing for Mattamy Homes. "Because carpenters on site don't need to measure and cut, there are fewer mistakes." Adds Andrew Jackson, Manager of the Eastern Canada Structural Frame Group for iLevel, "It's like doing a paint-by-number drawing."

In addition to reducing framing errors, pre-cut and pre-built components help reduce construction waste. "We've definitely seen improvements in material waste reduction at the panel manufacturing plant and on the job site," says Mitchell. "We're not finding pieces of joists behind our buildings." He adds that the company not only saves money from making better use of materials, but also saves on labor costs for pick up and disposal of scrap, and the related disposal fees. iLevel estimates that reducing material trim waste on structural members used in the floor system alone can result in savings of approximately \$500 for an average home to a builder, and an additional \$200 in savings from waste removal at the job site.

The design tools and software that power iLevel NextPhase-JobPack allow materials delivered to the Stelumar manufacturing plant to be pre-cut to 1/16" length tolerances. Mitchell says at that plant that "There's almost zero cutting involved." For non-panelized floor materials delivered to the job site, joists are typically pre-cut to a three or four-inch tolerance given the variability in tolerances for concrete-poured foundations. "Having to trim three inches off of a joist goes a long way to reducing waste, when the current industry standard is a foot or two," say Rick Russell, iLevel strategic sales representative in Toronto.

The benefits of pre-cut and pre-built framing materials go beyond cost savings and reduced waste. Such materials provide high-quality performance and consistency, helping achieve high customer satisfaction. Mattamy Homes has experienced this first hand – the company was rated highest in new homebuyer satisfaction in the Greater Toronto Area in a 2006 J.D. Power and Associates consumer survey.

With manufactured framing components and engineered wood products, homebuilders are discovering the benefits that manufacturers of consumer goods such as automobiles and electronics have experienced for years: greater precision, higher quality, reduced waste and lower costs. In a challenging housing market, look for more builders to adopt these approaches to framing their homes.



Mattamy Homes' Stelumar division builds panelized floors using iLevel® Nextphase®-JobPack precision-cut and labeled products.



All materials, including joists, rim board, beams and floor panels, are marked and can be installed quickly and easily according to a placement plan developed using iLevel® Javelin® software.

About iLevel by Weyerhaeuser

iLevel is Weyerhaeuser's integrated residential framing business resulting in a seamless, unified solution for residential builders through dealers – offering a coordinated network of support for all structural framing materials. By combining Weyerhaeuser's high-quality products and services from well-known brands like Trus Joist and Structurwood, with its distribution and technology capabilities, iLevel efficiently supplies customers with all the necessary components for building the residential structural frame, and solving builder and customer needs around that frame.

About Weyerhaeuser

Weyerhaeuser Company, one of the world's largest integrated forest products companies, was incorporated in 1900. In 2006, sales were \$21.9 billion. It has offices or operations in 18 countries, with customers worldwide. Weyerhaeuser is principally engaged in the growing and harvesting of timber; the manufacture, distribution and sale of forest products; and real estate construction, development and related activities. Additional information about Weyerhaeuser's businesses, products and practices is available at <http://www.weyerhaeuser.com>.