STRUCTURAL BUILDING COMPONENTS MAGAZINE (FORMERLY WOODWORDS)

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Economic Environment

"Nonresidential Construction Opportunities for Engineered Products" by Al Schuler

Value of U.S. Construction Market, 1999

Source: U.S. Industry & Trade Outlook '99, McGraw-Hill & U.S. Department of Commerce

	Construction Value $Billion	Lumber Value[1] $Billion	Panel Value[2] $Billion
Residential			
New Buildings	$191	$8.60	$6.38
Repair/Alterations	$119	$6.4	$2.62
Total	$300.00	$15	$9.00
Nonresidential Buildings			
New Buildings	$240	NA[3]	NA
Repair/Alterations	$156	NA	NA
Total	$396.00	NA	NA
Nonresidential Non-buildings[4]			
	$131	NA	NA
Nonresidential Total			
	$527.00	$2.93	$1.30
Grand Total	$827.00	$17.93	$10.3

[1] FOB Mill value based on framing lumber composite price ($402/M)
[2] FOB mill value using structural panel composite price ($358/M)
[3] Not available
[4] Excludes remodeling

Table 1

TABLE 1
CLICK ON IMAGE FOR LARGER VIEW

The U.S. construction market is critical to the economic vitality of the country. It is a huge market with a 1999 value of construction equal to about $827 billion or ten percent of GDP (see Table 1). It is the major market for structural lumber and panels. There are three distinct subsectors of the construction market that differ dramatically in their use of structural products: residential, nonresidential buildings and nonresidential nonbuildings. The residential sector (new housing plus remodeling) represents only 36 percent of the construction market, but consumes 84 percent of the softwood lumber and 87 percent of the structural panels (OSB and softwood plywood). In this column, I focus on the larger nonresidential building sector, specifically, opportunities for the wood products industry to penetrate this sector within the bounds provided by the code and for the component industry to penetrate this sector more fully overall. As you will see, if all structural elements were made out of manufactured components, the component industry would be far bigger than the estimated $7 billion in sales that it is today.

MARKET ASSESSMENT

Continuing changes in building code policy and advances in building techniques will dictate the future use of all structural building materials. For example, both U.S. and international building codes continue to evolve from prescriptive, product-based codes to performance codes backed by reliability (statistical) analysis. This evolution, in turn, is promoting more efficient construction techniques by allowing a more accurate measurement of the relationship between building price and structural quality. To compete in a performance based code type of environment, the component industry needs predictable performance for its products/systems. Figure 1 compares strength variability of pre-fabricated engineered wood I-joists with conventional dimension lumber. Less product variability means more predictable performance and that equates to more efficient design which then can be converted into better “value” for the customer. Metal plate wood trusses are another case in point—by using MSR lumber chords,

truss design is enhanced, and significantly less lumber is required. The development of engineered products such as LVL, I-Joists, Parallam™, Timber-Strand™, glulam, OSB and floor/roof trusses offers the component industry a better opportunity to capture significant additional market share in nonresidential building construction.

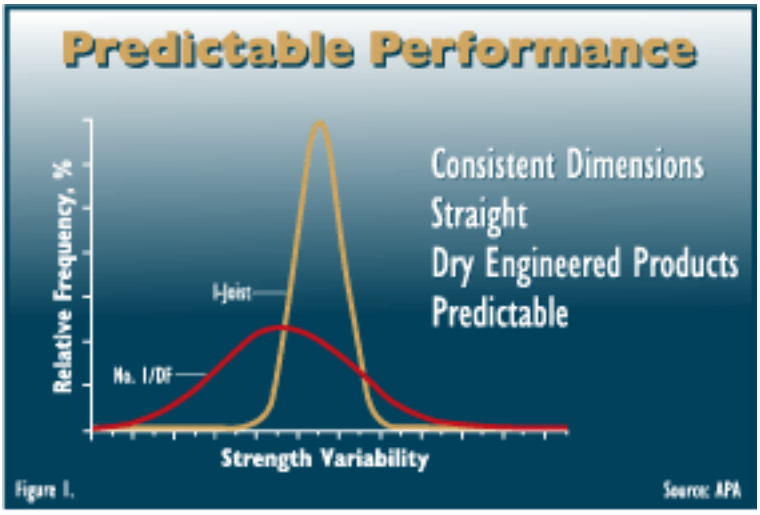

FIGURE 1
CLICK ON IMAGE FOR LARGER VIEW

In reality, the market determines when a new product or system will be accepted. Codes are important for structural applications, but the "bottom line" usually revolves around economic considerations. For example, OSB captured half of structural panel markets from plywood in the past decade because the market was "ready" for OSB. Plywood prices more than doubled following the "Spotted Owl crisis"; less expensive OSB is installed the same way plywood is; and performance wise, they are similar for many applications. Unit price isn't everything—switching cost is important as is in-place performance. There are other examples: pre-fabricated wood I-Joist floor systems have captured a 40 percent share of the single family floor joist market from wide dimension lumber and metal plate connected wood trusses have captured more than 60 percent of the "stick built" roof systems. New products/systems are accepted when they provide the customer with better "in place or installed value," and engineered products/components/systems are clearly demonstrating enhanced value to the builder of nonresidential buildings.

CONCLUSIONS

How can the component industry penetrate the nonresidential construction market? Here are several suggestions:

- Make architects, engineers, and designers feel more comfortable using all structural component products by implementing a broad-based educational and local market promotion program (e.g., Putting a Human Face on the Truss Industry through truss plant tours and Truss Technology Workshops) that points out the misconceptions surrounding the various raw material properties and perceived problems with component use.
- Initiate education programs aimed at high school, community colleges, universities and the local public at large.
- Develop methods for marketing engineered building materials by understanding the differences in the way materials are designed for use in the non-residential versus residential sector. For example, in nonresidential construction, the component manufacturer works closely with the builder/engineer/architect to define structural options. In residential construction, the link is very closely tied to the framing contractor who may or may not be the builder as well. These are very different markets having very different performance requirements, expectations and marketing needs, yet both markets are still ripe for capturing

additional market share.

AUTHOR'S NOTE

Parts of this article were patterned after a similar report written by the author while employed by Forintek Canada Corporation ten years ago. Interestingly, the same conclusions apply. The major difference today is that we have considerably more volume of engineered products that will greatly enhance a company's ability to penetrate nonresidential construction markets

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