

**THE RISE IN STRUCTURAL ENGINEERED WOOD PRODUCTS (SEWP) AND ITS
IMPACT ON MANUFACTURERS MARKETING STRATEGIES.**

By
Leonard M. Guss, Ph.D.
LGA INC.
1-425-788-7264; www.LGA-INC.net

The title is complex; the issue is not. Simply, does the provision of SEWP require or suggest that the manufacturer engage in marketing strategies other than for commodity wood products? Or is it sufficient to simply consider distribution, pricing, technical and marketing support, promotion and packaging? I believe that there is a separate issue here, one that must be considered in order to avoid or at least minimize serious concerns, litigation and costs in money and management effort.

First, let me define my terms. What is an engineered wood product and how does it differ from commodity wood products, in the senses that I use here? Of the many definitions available, I prefer my own.

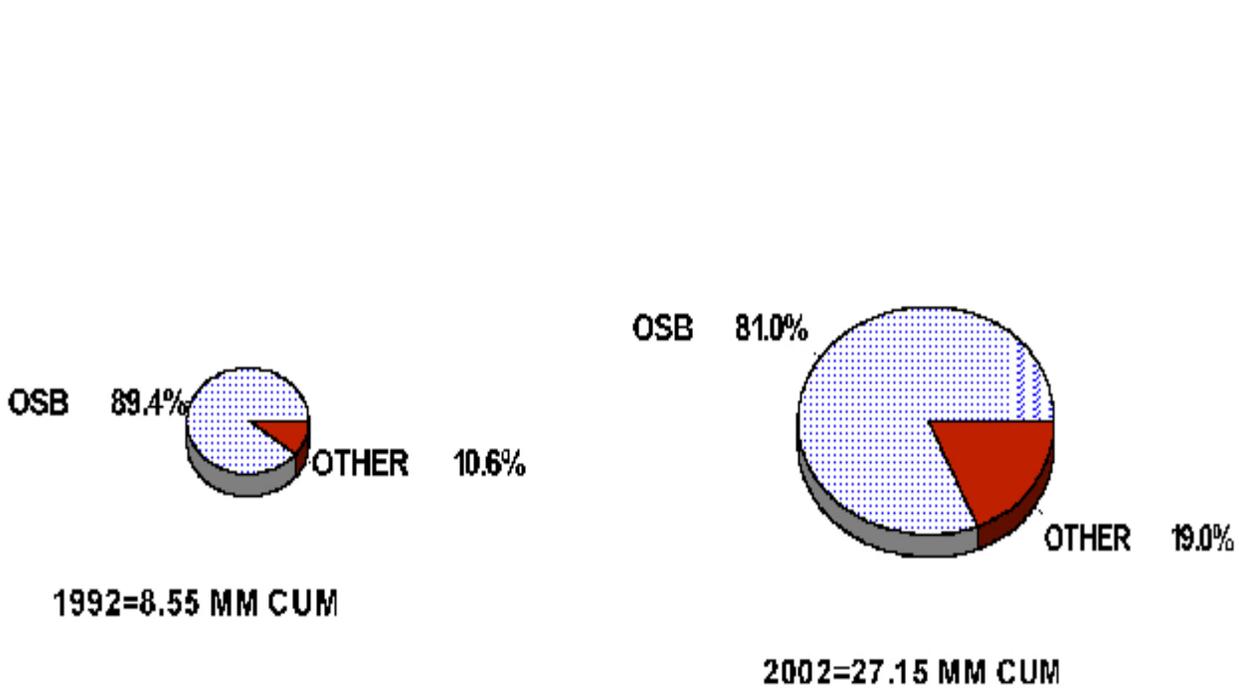
Engineered wood products are those over which we have some control in specifying various parameters such as strength, stability and dimensions. We accomplish this through a batch or continuous manufacturing process in which we combine ingredients to create a new product, usually a composite of wood and glue. This is in obvious contrast to those wood products over whose properties we have little control and for which we must classify or categorize them by naturally occurring characteristics. Thus the grading of lumber and plywood veneer is essentially a separation process in which we elect to place a manufactured item in certain grades according to criteria we have developed and which have been accepted as standards. If the product we make meets the standard it is accepted in the marketplace. Our ability to modify these characteristics is extremely limited, if at all present, e.g. we can cut out knots and defect in veneer and replace these with patches; we can do the same with lumber and edge or end glue together the resulting pieces to make a clear piece, except of course for the glue lines.

EWP can be structural or non-structural. For the purposes of this study we classify particleboard, MDF, cement/fiber, wood/plastic and similar combinations as non-structural and thus outside our purview. The structural EWP that we consider here are shown in Table 1. What is the genesis of the ***rise in SEWP*** usage referred to before? That SEWP production and consumption is rising for almost all components is beyond doubt. Figure 1 displays growth for these products over only the last ten years. The growth in prior years and that to come is no less spectacular.¹ There are

¹ See especially: *Engineered Wood Products: Arrived Just In Time*, Guss, L., Forest Products Journal, July/August, 1995; *Engineered Wood Products: The Future Really Is Now*, Guss, L., PETE Conference Proceedings, 10/94; *Why the Stampede to Engineered Wood*, Leicester, R., Building Innovation & Construction

Figure 1

SEWP HAVE SURGED IN THE US



ther' includes wood I-joists, LVL, glulams, but excludes proprietary products

several obvious reasons that underlie this growth, and they are noted briefly here.

Table 1 - STRUCTURAL ENGINEERED WOOD PRODUCTS

Product	Comment
Glulam beams	This is the oldest and simplest SEWP; graded boards or dimension lumber are glued together to make a beam of dimensions and lengths not readily found in nature
LVL	This is a step up in sophistication in which graded and tested veneers are glued and layed up to produce lumber equivalents which are stronger than solid wood
Wood I-joists	An elegant candidate joist which uses SEWP as flanges and chords, and air to displace solid wood
Parallel strand lumber (PSL)	Still another step up in sophistication; by controlling the dimensions of the strands, species used and adhesive, we achieve closely definable properties
Parallel strand beams (Parallam ^R)	Comparable to PSL, controlling veneer strands, species used, adhesive, etc. allows close control of final properties
OSB	The only panel product considered here, OSB allows far more control than plywood, in terms of dimensions, thickness, density profile, resistance to elements, etc. by varying process, adhesive and species.

- Change in the timber base. Old growth is gone. Second growth in many species is juvenile, weaker, shorter, narrower. The strength attributes of 50 years ago no longer apply.
- More demanding applications. Residences are more complex, with arched ceilings, cantilevered floors, three car garages (and larger ones at that, requiring longer headers).
- Larger dwellings. These require more structural members of every type.
- Expenses of construction. These are so high that the elimination of call backs and the

reduction in on-site labor (as in nailing dimension lumber headers) are increasingly important. An associated reason is the acknowledged and widespread decline in construction skills, so that engineered wood products must compensate for the deficit in building knowledge.²

- And, most important, the increasing sweep and level of litigation. In this litigious society every flaw must have a perpetrator and every deficiency must be penalized. Thus architects and their structural engineers have focused more and more on *reliability engineering*, and reliability engineering in turn depends on predictable properties and thus we are led to SEWP.

While SEWP cure or contain many problems, in some sense their use can be a two-edged sword. Because they claim to be more reliable and more predictable than commodity products such as lumber and sheathing plywood, they have in fact to actually perform as they are claimed to. From those products for which much is claimed, much is expected - and they had better deliver.

It is worthwhile to digress a bit and examine the number and kinds of litigation and concerns in wood products and related building materials from a marketing point of view. Even a cursory sweep of the Internet displays some of these:

- A class action suit against a manufacturer of synthetic stucco
- Many suits concerning treated lumber, especially CCA, despite any evidence that children or others have ingested CCA and thereby incurred cancer
- New York City Department of Buildings alerts re: mis-manufacturers wood I-joists
- New York (again) developed a labeling program that requires that commercial and industrial buildings with trusses be so labeled, for the benefit of emergency (fire) personnel.
- Many suits concerning mold and fungi³, including the notorious siding issues with Louisiana-Pacific OSB and most producers of medium density siding, as well as burgeoning litigation generally. Texas alone had \$843 million of mold claims from 37,000 policy holders in 2001.
- Continuing class action suits against Cemwood roofing (Weyerhaeuser, inherited via MacMillan Bloedel); and against Masonite (IP) Woodruff roofing
- Class action suit against Cladwood, a particleboard siding
- Many suits concerning formaldehyde fumes in particleboard wall paneling, mobile home deck, as well as carpet adhesive

²*Skilled Construction Labor Shortage*, Kathy Price-Robinson, APA Web, Spring, 2000

³ *EnviroSafe White Paper on Mold & Wood*, EnviroSafe Wood Treatment Products, LLC, J. Dockter, October 2002. This is an excellent, comprehensive review of all mold related issues.

Obviously, many of these suits have little relationship to SEWP. But the pattern of looking for issues that can be litigated is clear.

One of the most potentially threatened SEWP is also the largest in volume: OSB. Everyone in the wood products industry is aware of the giant leaps made by OSB in displacing softwood plywood and in creating its own unique applications. The largest single set of OSB applications is sheathing, both wall and roof. A recent article discusses the rising array of litigation concerning EIFS (Exterior Insulation & Finish Systems), especially stucco, and directly relates stucco product failures to the use of OSB sheathing in place of plywood! This is an unproven assertion at this time, but is sure to be taken up by EIFS defendants' attorneys.

This is the basis for an expanded marketing strategy for SEWP, and for a pro-active stance. This approach is not without hazard, i.e. defending against a possible SEWP issue of itself raises the question. But it is better to be prepared than not. Good examples of such preparation are the Wood I-Joist Manufacturers' Association production of fire safety videos, and task forces. Another are the position papers issued by TrusJoist (Weyerhaeuser) about fire safety and wood I-joists, long accused of being more than acceptably susceptible to fire. In fact, wood I-joists are of major concern in many jurisdictions (Chicago) and a number of guidelines have been developed for enhanced fire safety⁴. (Figure 2 shows some of the concerns for wood I-joists).

What is a manufacturer to do? I suggest that only a pro-active stance will be effective. Seek out any possible areas of problem and forestall them by corrective action. What are some specific instances? An excellent article by experienced litigation attorneys⁵ discusses three groups of candidates for mold litigation:

- products that might support mold growth when wet (plywood, OSB, any cellulosic material)
- products that might support mold growth when they do not operate as intended (sheathing systems, sealants, EIFS systems)
- products that claim to prevent or eliminate mold (treated wood products)

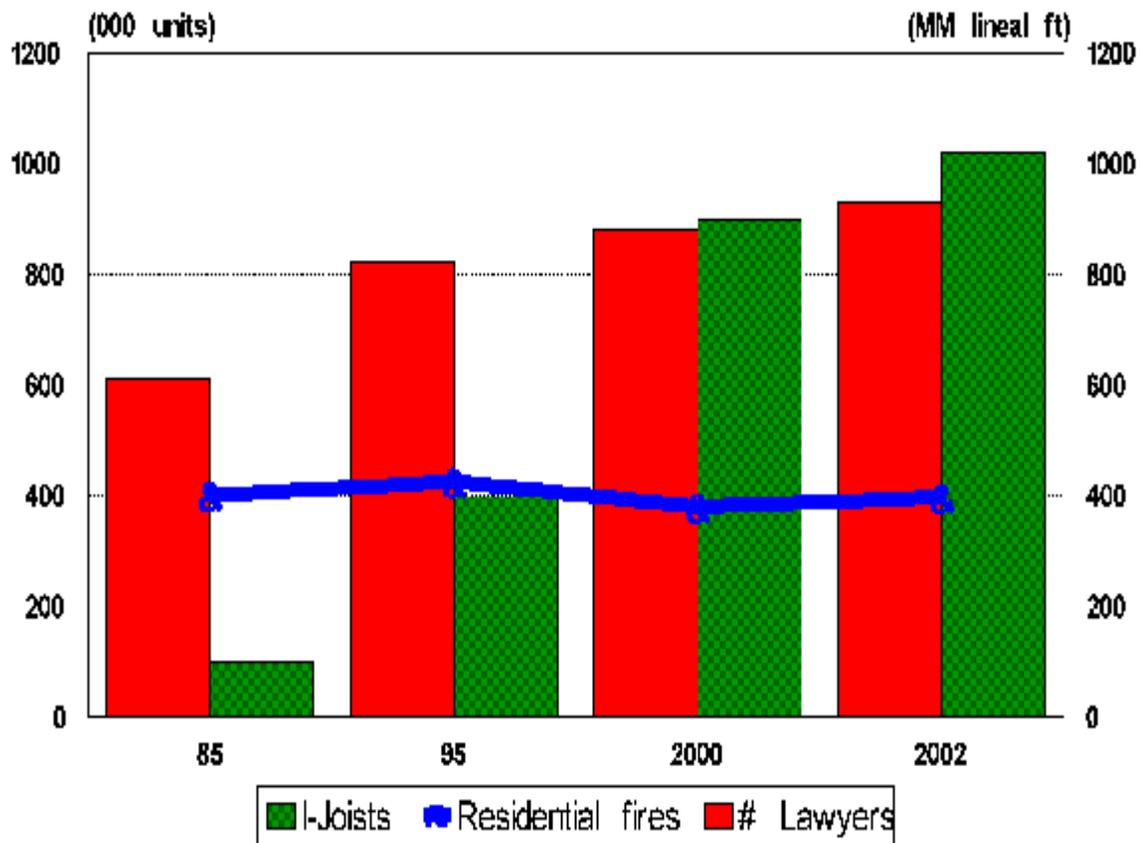
Any manufacturer of a wood product can thus be liable. Perhaps the best protection is a thorough review of the manufacturers product by structural engineers, attorneys experienced in liability litigation and a Certified Industrial Hygienist (for mold issues). Moreover, all ingredients should be examined for potential mold support, including adhesives and additives in composite panels and other SEWP.

⁴ *Addition of Generic, Tested Fire Assemblies in the 2001 ASD Guideline for Wood I-Joists*, Wood Design Focus, pp 18-20, Brooks, et al

⁵ *Manufacturers Beware: The Epidemic of Mold Litigation Hitting the United States is Coming After you Next*, Sweeney, J.P. & Schwartzott, J. M., Mealey's Litigation Report, Construction Defects, 2/2003, pp 25-29

Figure 2

Wood I-Joist Production, Residential Fires & # of Lawyers



Source: APA; USDC, LGA estimates & projections

Leonard Guss Associates, Inc.

A second level of defense is rigid adherence to standards and specifications and the avoidance at all costs of selling material as meeting standards when they do not. A case in point is Louisiana-Pacific, which has pleaded guilty to selling OSB as meeting APA standards when it knowingly did not (this cost LP \$37 million in fines and a potential \$500 million in civil lawsuits). It seems redundant to state that a manufacturer must assure that the product being produced is well made and to appropriate standards. There are, however, instances of poor manufacture, insufficient glue spread, too short dwell time in the press, inaccurate levels of temperature and pressure, etc. Any and all of these lead to inferior products, and to product failure, and to lawsuits.

A third level of defense is to recognize that major customers, such as home builders who apply stucco finishes, may have serious disagreements with published information on OSB, and with the contention that all OSB that meets APA standards is similarly effective. Perhaps the categories of OSB (Exterior, Exposure 1, etc) should be re-examined harshly. Perhaps the grading agencies need to become more rigid in their examination of samples. Industry should conduct more and systematic research among these first line customers, to discern attitudes, provide information and, when challenged, treat these challenges with respect and retest the product.

Finally, individual manufacturers need to be truthful, even modest, about claims of performance, especially when the manufacturer is offering a 'new & improved' version of the SEWP. There have been a number of enhanced OSB panels offered recently by reputable manufacturers. It is absolutely incumbent upon them to make sure that the information provided and claims made are sustainable and visible.