

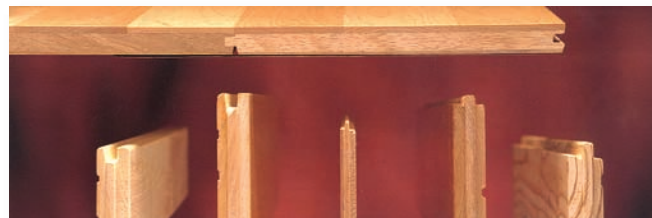
Technology Profile



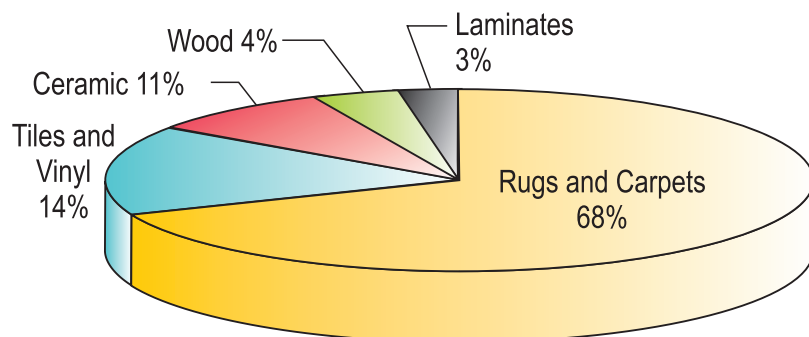
**Value
to
Wood**

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Wood-Based Flooring Products – Market Trends



The availability of new wood flooring products and installation methods has prompted an enthusiastic development of innovative wood-based flooring products in North America. The wood flooring market has been under constant evolution over the past ten years and has enjoyed continued growth. New products include laminates, solid and engineered wood strips.



Market share of various types of flooring in the United States in terms of area covered

Solid wood strip flooring

The solid wood strip flooring industry has been on the upswing in eastern Canada for the past 15 years as a result of major companies engaging in business with American distributors. In 2001, there were 34 companies in Canada offering prefinished strip flooring, according to Industry Canada and the *Ministère des Ressources naturelles, de la Faune et des Parcs du Québec*. The



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product is typically composed of a $\frac{3}{4}$ inch thick wood strip that is either $2\frac{1}{2}$ or $3\frac{1}{4}$ inches wide and available in a variety of lengths. Interestingly, it was the arrival of prefinishing that led to innovations in solid wood flooring. Ultra-violet (UV) cured varnishes increased the lustre of finishing systems dramatically. Adding aluminum oxide (ceramic-derived product) then made it possible to enhance resistance to wear. Other additives, such as anti-yellowing and anti-microbial agents, have been the latest in a string of major developments. The use of micro-V joints for tongue and grooves has also been seen as a breakthrough in prefinished flooring.



Solid wood strip flooring with micro-V joints in the tongue and groove system



Consumer preferences in the quality of solid wood flooring include its hypoallergenic properties, high durability, the variety of available finishes and species, surfaces that can be refinished, comfort as a walking surface and an attractive warm look.

Although wood flooring has been gaining market shares for a number of years now, solid wood strips have given up some of their segment share to engineered wood flooring.

« Solid wood strips have given up some of their segment share to engineered wood flooring. »

Engineered flooring strips – an expanding market

Engineered flooring was first developed in Europe in the 1970s, however it was not until the 1990s that it gained momentum in the North American flooring market. Differences in relative humidity conditions between Europe (less moisture) and North America, have resulted in the understanding that a product which performs well in Europe may not fare so well in North America.

The engineered strip consists of a premium quality top layer of sawn or sliced wood, applied to a substrate. A variety of substrates can be used, including North American plywood, thin-plyed European plywood, wood composites and softwood or hardwood stickers. These materials are not simply assembled: the choice of materials and their dimensions have a bearing on the product's overall performance.



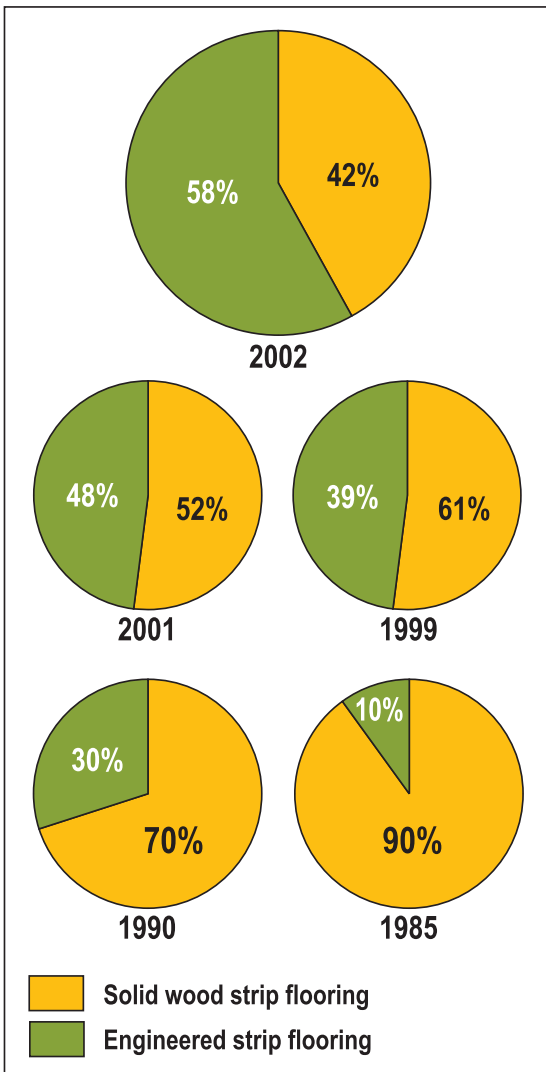
Engineered floor strip with a self-locking joint that is open

The engineered strip has the same qualities as traditional wood strips. Moreover, with one piece of wood which would have previously yielded only one floor strip, it is now possible to obtain 4 to 5 surface layers. Various installation methods can also be used, e.g. floors can be stapled, nailed or glued into place. The «glue-down» method enables the flooring to be laid directly onto concrete, as in the case of condominiums and other constructions built on bare ground (southern USA). Recently, the use of self-locking joints, until now reserved for laminates, has made an appearance in the European engineered flooring market.

The engineered strip has enjoyed the same growth as traditional wood flooring, however it is quickly becoming a substitute for these traditional strips. In the United States, engineered flooring went from 10% of the market sector in 1985, to 30% in 1990

Engineered floor strip with a self-locking joint that is closed





Changes in market shares for engineered flooring and traditional wood flooring

and to 58% in 2002 (in area covered). This situation suggests that engineered flooring in North America is following the same trend as in Europe. In 2001, 73% of the wood flooring sector in Europe was engineered where it retails for 30% less than traditional flooring. This indicates that it has become a «convenience product» with mass appeal, whereas traditional wood flooring is viewed as a top-end product. Increased pressure on wood resources and current market shares of products in North America point toward our market also heading in this direction.

High pressure laminates

High pressure laminates appeared in 1995 in North American market statistics and rapidly

grabbed market shares. These floors are known as "floating floors" in reference to the way they are installed. Generally, high pressure laminates are composed from surface to back, of a melamine-impregnated sheet, a decorative paper, high-density fibreboard (HDF) and a laminated paper. The melamine sheet at the surface adds highly desirable properties for flooring, such as exceptional hardness and excellent resistance to stains and wear (up to 10 times greater than aluminium oxide varnishes). Laminates are often accused of being a copy of wood, which is why a greater variety of decorative paper would limit repetitive patterns and embossed press plates have been developed to achieve the porous look of wood.

High pressure laminate floors use a «floating» installation method, which means that they are not actually attached to the subfloor but are held in place by gravity. The first versions required glue on both the tongues and grooves to hold everything in place. Today, 90% of these products have a «click and lock» system. These self-locking systems have made it possible to reduce installation times and increase the product's popularity. There have been complaints that laminated floors are noisy and their self-locking system is sensitive to humidity. Recently however, laminated floor panels have started to come with micro-V joints, again with the idea of offering a product that looks as much as possible like traditional wood flooring.

Laminated flooring has gone from 1.3% of the surface coverings market in the United States in 1999 to 2.7% in 2002, and according to market analysts, this upward trend should continue in 2003.

« With one piece of wood which would have previously yielded only one floor strip, it is now possible to obtain 4 to 5 surface layers. »

Market trend or niche market?

Every trade show has its share of new products. It is important to determine if they are part of an overall trend or represent a niche market. Self-locking joints in engineered flooring are currently seen as a trend in the European market and this type of tongue and groove system is expected to move into the North American market as well. For the past few years, wider traditional and engineered flooring strips have also been seen as a trend. Oiling rather than varnishing is offered in both Europe and North America, but since it appears to respond to very specific needs, it should be considered a niche product. The micro-V joint already makes floor cupping virtually unnoticeable. However, using a rounded edge instead of a V-joint in the tongues and grooves not only seems to be as effective, but also gives an antique look to the strips. This type of milling could become more commonplace in the future. Wood strips with hand-carved surfaces are popular with designers, however they are associated with a certain decorating style and as such, probably correspond to a limited market. Floor strips featuring an unfinished surface (very rough) or large open knots corresponds to a range of products associated with a rustique style.

The 2003-2004 *Value to Wood* research program includes various projects related to wood-based flooring products. For more information, visit www.valuetowood.ca (Research and Development).



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Ce Profil technologique est également disponible en français.



As part of the *Value to Wood* program, funded by Natural Resources Canada, Forintek's Industry Advisors are providing technical services to value-added wood product manufacturers in all regions of Canada. If you need information on any technical issue related to wood product manufacturing, you can:

- Send a request via valuetowood.ca (Help Desk).
- Contact a *Value to Wood* co-ordinator at one of the following locations:

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