

Wood Flooring

Sector Overview

Wood flooring, and hard flooring surfaces generally, have grown in popularity in the past decade. This is due to health concerns, style, new products and ease of care. In 2003, demand for floor covering in the U.S. was 29.3 billion square feet with hard flooring surfaces accounting for 30.5% or 8.9 billion square feet.

There exist two major types of wood floors: engineered and solid. Engineered wood floors are relatively new but are increasing in market share. They usually are made of 3 or 5 layers of veneer, with only the top layer being the highest grade finished wood. Engineered floors are cost-effective for high grade surfaces and exclusive species. They are also dimensionally stable.

Solid wood continues to hold the majority of the wood floor market. It is traditionally shipped unfinished in major species such as oak, maple and birch. Although it is sold at moderate prices, the installation and finishing increase the total cost and time requirements significantly. To address the ease of installation of engineered and laminate floors, solid wood flooring is increasingly being made available pre-finished.

Wood flooring is dominated by hardwood species. However, niche markets exist for softwoods in rustic and vertical grain grades.

Material Use

ESTIMATED DEMAND FOR FLOORING IN THE U.S., 2004

		BILLION FT ²
Flooring		30.5
Hard Surfaces	30.5%	8.9
Vinyl	44%	3.9
Tile	24%	2.1
Laminate	10%	0.9
Wood	13%	1.2
Solid	65%	0.8
Engineered	35%	0.4

Source: Estimate based on Freedonia, National Floor Trends, Forintek



Wood Use

SPECIES USED IN U.S. PRODUCTION OF WOOD FLOORING, 2002

SPECIES	% USED
Red Oak	68
White Oak	18.1
Hard Maple	8.9
Hickory	1.2
Yellow Birch	1.1
Ash	0.9
Cherry	0.8
Other	0.5
White Pine	0.1
Soft Maple	0.1
Southern Yellow Pine	0.1
Ponderosa Pine	0
Radiata Pine	0
Douglas-fir	0

Source: Forintek, Virginia Tech

Grades and components

Most wood flooring is made of hardwood lumber. While the National Hardwood Lumber Association does not set out specific guidelines for wood flooring, their grades transfer into the flooring grades set out by the NOFMA – The Wood Flooring Manufacturers Association. NOFMA has Clear, FAS, No. 1 Common, and No. 2 Common grades for solid wood flooring. The National Lumber Grades Authority (NLGA) also sets out three specialty grades for softwood flooring.

The wood flooring industry is generally a consumer of lumber rather than components. The nature of flooring production allows flooring producers to achieve high product yields from their lumber inputs.

COMPARATIVE SPECIES' PROPERTIES

		RED OAK	SUGAR MAPLE	BLACK CHERRY
Specific Gravity		0.63	0.63	0.50
Hardness (N)	Side (green)	4400	4300	2900
	End (air-dry)	5700	6400	4200
MOE (MPa)	Green	9300	10700	9000
	Air Dry	12500	12600	10300
MOR (MPa)	Green	57	65	55
	Air Dry	99	109	85
Shrinkage OD = oven dry	Radial (OD)	4.0%	4.8	3.7
	Tangential (OD)	8.6%	9.9	7.1
	Volumetric (OD)	13.7%	14.7	115
	Tang / Rad Ratio	2.15	2.06	1.92



Terminology

DESCRIPTION OF MAJOR FLOORING TERMS

TERM	DESCRIPTION
Solid wood flooring	Solid flooring typically of 3/4" thickness
Engineered wood flooring	Flooring made of 3 or 5 wood layers. known for its dimensional stability
Laminate flooring	Composite flooring with printed paper surface
Tongue and groove	Profile on flooring edges allowing for hiding nails during floor installation
Pre-finished	Solid wood flooring with factory finish
Strip flooring	Traditionally 2-1/4", 1-1/2", and 3-1/4" in width
Plank flooring	Wider flooring at 3", 4", 5" and 6" widths

Associations and Standards

NOFMA- The Wood Flooring Manufacturers Association started as an oak flooring association but now represents most domestic hardwoods. Their grades tend to focus on residential applications. The Maple Flooring Manufacturers Association(MFMA), while it now also represents birch and ash, has a much narrower focus. They focus on technical non-residential floors such as gymnasiums.

ASSOCIATIONS

The Wood Flooring Manufacturers Association	www.nofma.org
National Wood Flooring Association	www.nwfa.org
Maple Flooring Manufacturers Association	www.maplefloor.org

Standards

NOFMA maintains a set of standards for their members. These standards focus on configurations, moisture content and grades. Moisture content is to be 6 to 9% for solid wood flooring and 5 to 11% for engineered floors. NOFMA grades are discussed above.

MFMA maintains a set of standards and grades for maple, birch and ash floors used in recreational applications. The MFMA is concerned with performance standards in recreational applications.





Prospect Summary

Hard flooring surfaces such as wood, laminate, tile and vinyl have been very strong recently. Laminate floors have stepped in at the lower end of the market to facilitate the move from carpet to hard floors. Solid wood and engineered floors form the mid to high range of hard flooring, along with tile.

One of the most important attributes for wood floors is hardness. Hardness has been boosted with factory finished solid and engineered floors. Bamboo, a very hard wood substitute, is also making inroads in the flooring market.

Softwoods hold a very low market share in wood flooring due to their lack of hardness. However, there are some niche markets and technical opportunities for them. Niche markets include rustic softwood floors with antiqued surfaces or the inclusion of knots and stain for cabin grades. Also, plank flooring, a configuration well suited for softwoods, is growing in market share. From a technical perspective the general move to pre-finished flooring may benefit softwoods as factory finishes can be made much harder than installed finishes. This may help bridge the hardness gap and allow softwoods to compete in higher end vertical grain and non-rustic markets.

Sources

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