New study finds:

• Demand for decorative laminates in the United States is forecast to increase 5.3 percent annually to 15.4 billion square feet in the year 2005, valued at $6.1 billion.

• Although kitchen and bath products (countertops and cabinet and vanity surfaces) and furniture will continue to account for the largest shares of the overall market, the most rapidly growing market segment will remain laminate flooring.

• Leading producers in the US decorative laminates industry include Wilsonart (acquired by Illinois Tools Works in 1999), Formica, Panolam Industries (operating as Pioneer), the NEVAMAR unit of International Paper, Patrick Industries, Casco Impregnated Papers (Akzo Nobel) and Dynea Overlays (Industri Kapital).
Decorative Laminates, a new study from The Freedonia Group, provides you with an in-depth analysis of major trends in the industry and the outlook for product segments and major markets -- critical information to help you with strategic planning.

This brochure gives you an indication of the scope, depth and value of Freedonia’s new study, Decorative Laminates. Ordering information is included on the back page of the brochure.

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Demand for decorative laminates in the United States is forecast to increase 5.3 percent annually to 15.4 billion square feet in the year 2005, valued at $6.1 billion.

High pressure laminates, characterized by their superior resistance to dents, abrasions and stains, will record the most rapid growth due in large part to the continuing rapid expansion of laminate flooring.

Although kitchen and bath products (countertops and cabinet and vanity surfaces) and furniture will continue to account for the largest shares of the overall market, the most rapidly growing market segment will remain laminate flooring.

Low pressure laminates account for the bulk of total demand, and are being used more frequently in conjunction with high pressure materials, in order to maximize both product quality and cost competitiveness.

Leading producers in the US decorative laminates industry include Wilsonart (acquired by Illinois Tools Works in 1999), Formica, Panolam Industries (operating as Pioneer), the NEVAMAR unit of International Paper, Patrick Industries, Casco Impregnated Papers (Akzo Nobel) and Dynea Overlays (Industri Kapital).
## Decorative Laminates Demand

(million square feet)

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<th>2000</th>
<th>2005</th>
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<td>sq ft/000$ GDP</td>
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<td>1.45</td>
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<td>435</td>
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<td>11.3 8.2</td>
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<td>4.8 3.9</td>
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<td>$/sq ft</td>
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<td>0.37</td>
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<td>6080</td>
<td>7330</td>
<td>4.8 4.0</td>
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Decorative Laminates #1456

Order form on last page
The Market Environment Section discusses factors influencing decorative laminate demand, including consumer spending and the outlook for construction.

This information provides you with an understanding and an analysis of the climate in which the decorative laminates industry operates.

Volatility

Decorative laminates are used primarily in industries which are very sensitive to overall economic trends. In times of slow economic growth (such as much of the early 1990s), demand for new construction materials, furniture, and fixtures weakens, leading to slower laminate production. However, conditions of strong overall economic growth lead to expanded manufaActure of the products in which laminates are used.

However, advances in laminates demand consistently exceed gains in Gross Domestic Product (GDP), due to unusually strong gains in laminate flooring, which is still relatively new to the US, and the strong home renovation component to overall demand. Generally, while slow economic growth stifles new building construction, the same is not necessarily true of building renovations and repairs. In fact, property owners frequently engage in renovations of existing structures at such times, to improve the saleability of homes in a weak real estate market, to make rental properties more attractive or to improve the quality of life in a home at a time when purchasing a new home is not a viable option.

This dynamic functions as a counter-cyclical balance, helping laminates producers weather rough economic times. In times of stronger overall economic growth, such as the latter years of the 1990s, growth in laminates demand benefits from increasing production of furniture and gains in new construction activity, which improves results in almost all product niches.

Demand for laminates also benefits from the performance and economic advantages of laminates over competing materials. Decorative laminates are strong, resistant to stains, dents and scratches, and are considerably less expensive.
These Sections provide demand for historical years and forecast growth to 2005 and 2010.

This information helps you:

- Analyze your company’s growth potential in the industry.
- Outline your strategic plans for five and ten years out.
- Establish sales goals.

**Particleboard**

Demand for particleboard substrates used in laminate manufacture will increase 6.1 percent per year to eight billion square feet in the year 2005. One reason for the increasing demand is the rapidly growing flooring market. Particleboard, composed of wood particles and fibers pressed into a board using synthetic resins, is more dimensionally stable than many other wood boards, and its smooth surface allows for effective bonding with nearly all laminating adhesives. As a result, particleboard will remain the primary substrate in use.

In addition, most particleboard plants in the US have added better dryers, sanders and refining equipment over the last five years. This has improved the quality of their product for laminating purposes, allowing particleboard to expand its lead on MDF as a laminating substrate.

Applications in the laminating field for particleboard include office furniture, kitchen cabinets, countertops and flooring. Types of laminates commonly adhered to particleboard include high pressure laminates, saturated paper laminates, vinyl films and decorative foils.

**Vinyl Film Laminates Demand**

(million square feet)

<table>
<thead>
<tr>
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<td>Furniture Shipments (bil 1996$) sq ft/000$ furniture</td>
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<td>52.9</td>
<td>58.1</td>
<td>68.0</td>
<td>79.0</td>
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<td>Vinyl Film Laminate Demand</td>
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<td>1818</td>
<td>2375</td>
<td>2890</td>
<td>3510</td>
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<tr>
<td>Kitchen &amp; Bathroom Cabinets</td>
<td>500</td>
<td>650</td>
<td>990</td>
<td>1250</td>
<td>1550</td>
</tr>
<tr>
<td>Household &amp; Office Furniture</td>
<td>375</td>
<td>370</td>
<td>320</td>
<td>280</td>
<td>250</td>
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<td>Store Fixtures</td>
<td>204</td>
<td>255</td>
<td>320</td>
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<tr>
<td>Wall Panels</td>
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<td>320</td>
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<tr>
<td>Other</td>
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<td>43</td>
<td>55</td>
<td>70</td>
<td>90</td>
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<tr>
<td>$/sq ft</td>
<td>0.54</td>
<td></td>
<td></td>
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<tr>
<td>Vinyl Film Laminate Demand (mil $)</td>
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<tr>
<td>% vinyl film</td>
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<td>LP Laminates Demand</td>
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<td>7147</td>
<td>8725</td>
<td>10325</td>
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Decorative Laminates #1456

Order form on last page
The Markets Section analyzes trends and considers the threats and opportunities in each of the major markets for decorative laminates.

The information presented will help you:

- Focus your sales and marketing efforts on high growth areas.
- Propose new areas for development.

DECORATIVE LAMINATE MARKETS

Store Fixtures - Laminates Demand

Demand for decorative laminates in store fixture markets will increase from 1.3 billion square feet in 1990 to 2.4 billion square feet in the year 2005, valued at more than $900 million. This will account for about 15 percent of total demand. Gains will be derived from increasing (albeit decelerating) retail sales activity and greater penetration by laminates.

Laminates compete with a number of other materials in the store fixtures market. Store fixtures are usually constructed of wood or metal. A relatively small segment of the overall market. About ten percent of the manufacturers of store fixtures use laminates in some of their products, although this can range from complete surface coverage to just a few strips of edgebanding as an accent on a glass or wood display case. In the more specialized niche of custom built fixtures (those built to retailer specifications), laminates are much more prominent, with nearly three-quarters of the custom built fixtures containing laminates.

Individuals, the most commonly used decorative laminate in store fixture manufacture is high pressure laminate, which offers the greatest impact and scratch resistance. These are primarily used for the tops of counters and other fixtures. Edgebanding is, of course, also widely used. As a group of products, low pressure laminates account for the majority of demand with products like saturated papers, low basis weight papers and vinyl films each approaching high pressure products in terms of volume. Low pressure laminates are used for fixture sides and other vertical surfaces which do require the high impact resistance of high pressure products.

Furniture Laminates Demand by Type

(million square feet)

<table>
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<td>500</td>
<td>690</td>
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<td>1150</td>
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<td>220</td>
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Industry Structure

Gain a better understanding of your competition and analyze your company’s position in the industry with information about:

- industry composition & market share
- acquisitions & divestitures
- cooperative agreements
- competitive strategies
- marketing & distribution
- research & development

INDUSTRY STRUCTURE

Research & Development

Research and development is an important aspect of the continuing evolution of the US decorative laminates industry. In the last few years, improvements have been made with respect to the printing processes used, the durability of the wearlayer (the clear top layer) and substrate cores. Improvement in the printing process used to create laminates. Improvements in image separation and the adoption of multiple stage printing processes, wherein accents and shades of color are printed in each stage rather than just at the end, have created designs which look more natural, three-dimensional and detailed. This is particularly true of wood grain patterns. Also, the increasing use of pearlescent inks has made many laminate patterns more vibrant and deeply hued. These advances have impacted virtually every segment of the market.

Advances have also been made in the protective wearlayer, a clear plastic layer which protects the underlying pattern. In the past, wearlayers generally contained aluminum oxides, which made the wearlayer much more durable. This was especially the case with laminate flooring, which requires enhanced wear characteristics. However, aluminum oxides tend to obscure fine nuances in the grain pattern and sometimes give laminates a muddy look. Newer finishes are clearer, crisper and allow the full grain pattern to show through. Manufacturers have also developed a number of methods for adding texture to their laminates, such as the embossed-in-register method, which yields laminates with an authentic wood or masonry texture.

Perhaps the most impacted segment of the industry in terms of recent technological developments has been laminate flooring. In addition to the aforementioned
Company Profiles

The Profiles Section analyzes 42 companies active in the U.S. decorative laminates market. These profiles represent a sampling or cross-section of the types of companies involved in the industry.

Divisions, subsidiaries, joint ventures, etc., are discussed under appropriate parent companies.

Sources for profiles included:

- Information provided by key staff members in the respective companies
- Annual reports
- 10-K reports
- Security analysts reports
- Corporate product literature

COMPANY PROFILES

Akzo Nobel NV
Velperweg 76
6800 SB Arnhem
Netherlands
31-26-366-4433
http://www.akzonobel.com

Casco Impregnated Papers America Company
1051 Jenkins Brother Road
Blythewood, SC  29016
803-754-4810
http://www.cascosurf.com

The Company is active in the decorative laminates industry through the Industrial Products business of the Coatings division. The Industrial Products business’ operations include Casco Products, a producer of impregnated papers, adhesives and thermoplastic microspheres. The company’s impregnated paper products, which include decorative surfacing materials, are produced by the Casco Impregnated Papers subsidiary. As of 2000, impregnated paper manufacturing facilities were located in North America (2), Europe (5) and Asia. Casco Products participates in the US market through Casco Impregnated Papers America Company. In 2000, Casco Products had sales of $482 million, of which $121 million were derived from North America. Of those figures, Casco Impregnated Papers accounted for $200 million and employed 920.

Casco Impregnated Papers produces decorative surfacing materials for applications in the woodworking, furniture, flooring and automotive industries. The company’s products are characterized by resistance to heat, impacts, moisture, chemicals,
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<tr>
<td>American Melamine Industries</td>
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<td>Pioneer Plastics</td>
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<td>Pionite Decorative Surfaces</td>
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<td>Patrick Industries Incorporated</td>
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<td>Perstorp AB</td>
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<tr>
<td>Pickering Incorporated</td>
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<td>Riken Vinyl Industry Company Limited</td>
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<td>Roseburg Forest Products Company</td>
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<td>Sekisui Chemical Company Limited</td>
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<td>Kleerdex Company</td>
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<td>SierraPine Limited</td>
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<td>Stevens Industries</td>
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<td>Domco Tarkett Incorporated</td>
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<td>Timber Products Company</td>
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<td>Uniboard Canada Incorporated</td>
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<td>Belanger Laminates Incorporated</td>
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<td>VyTech Industries Incorporated</td>
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<td>Westvaco Corporation</td>
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<td>Woodcraft Industries Incorporated</td>
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<td>PrimeWood Incorporated</td>
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<td>Woodtape Incorporated</td>
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Freedonia does not just collect and reprint data; Freedonia develops data. Our analysts thoroughly investigate an industry by extensively interviewing key industry participants and analyzing information from sources such as associations, government and trade literature. Once this research is complete, Freedonia establishes one set of forecasts. All writing, editing and forecasting is done in-house to assure quality and consistency. In cases where data does not exist, Freedonia develops the data based on input/output ratios, bills of materials and flow charts. The following chart summarizes Freedonia’s methodology:

**Forecasting Methodology**

Freedonia Industry Study

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The Freedonia Group, Inc. is a leading international industry study/database company.

Since 1985, Freedonia has published over 1,600 titles covering areas such as chemicals, coatings and adhesives, building materials, plastics, industrial components and equipment, health care, packaging, household goods, security, and many other industries.

Freedonia has produced a wide variety of titles, including:

- Foamed Plastics
- Hard Surface Flooring
- Cabinets
- World Prefabricated Housing

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Consistency
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Reliable forecasts
Because all of our forecasts consider the environment in which a product or industry is operating, as well as threats and opportunities to the market, Freedonia forecasts are reliable indicators of future performance.

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All studies are produced by conducting interviews with key industry participants and end-users.

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- Financial Analysts
- Information Centers
- New Product Developers
- Merger & Acquisition Specialists

Since 1985 we have provided research to customers ranging in size from global conglomerates to one person consulting firms. More than 90% of the industrial companies in the Fortune 500 use Freedonia research to help with their strategic planning.

Some of Freedonia’s customers in the decorative laminates market include: Akzo Nobel, Armstrong World Industries, Illinois Tool Works and Westvaco Corporation.
Prefabricated Housing
US demand for manufactured, panelized, modular and precut housing will outpace site-built housing through 2005, when prefabricated will account for 30% of all housing starts. The cost advantages of factory production such as improved scheduling, bulk purchasing of materials, and insulation from weather delays, will aid demand. This study analyzes the $17 billion US prefabricated housing industry to 2005 and 2010 by product and region. It also presents market share data and profiles leading producers.

#1458. 8/01. $3,600

Nonresidential Prefabricated Building Systems
US demand for nonresidential prefabricated building systems will rise to $11.5 billion in 2005. Metal buildings will remain dominant, aided by separately-sold components used with non-metal framing. Modular buildings will lead other types as innovations allow for more complex, multistory facilities with various facades. This study analyzes the US nonresidential prefabricated building systems industry to 2005 and 2010 by type, market and region. It also details market share and profiles key companies.

#1443. 8/01. $3,600

Foamed Plastics
Demand for foamed plastics in the US will reach 7.8 billion pounds in 2005. Opportunities in insulation and cushioning will support demand for foamed urethane, while foamed polystyrene demand will be driven by advantages in packaging and insulation. Construction will remain the leading market based on heightened energy efficiency standards. This study analyzes the $13.7 billion US foamed plastics industry to 2005 and 2010 by type and market. It also evaluates market share and profiles key companies.

#1436. 6/01. $3,700

Hard Surface Flooring
US hard surface flooring demand will surpass one billion square yards in 2005. Laminate, wood and ceramic tile flooring will be the fastest growing segments and continue to supplant carpets and rugs. Demand for laminate flooring will keep growing at double digit rates. The nonresidential market will remain dominant and grow the fastest. This study examines the $7 billion US hard surface flooring industry to 2005 and 2010 by product and market. It also evaluates market share and profiles key firms.

#1415. 5/01. $3,600

World Prefabricated Housing
World demand for prefabricated housing will reach 1.3 million units in 2004. Gains will be bolstered by housing activity in developing Asia/Pacific and Latin America, where prefabricated housing will find use as both low-cost units to reduce shortages and as high-quality, well-insulated houses for well-to-do consumers. This study analyzes the US $54 billion world prefabricated housing industry to 2004 and 2009 by type, market and region, and for 19 countries. It also details market shares and profiles key companies.

#1370. 1/01. $4,300

Decorative Laminates - Private Companies Report
Two private companies are among the four largest producers in this $4.4 billion US industry, with at least $300 million in related sales each. Three other private firms have over $50 million in US laminate sales. This report profiles 120+ privately-held US companies (e.g., Formica, Panolam Industries, Roseburg Forest, Stevens Industries, Uniboard Canada) and lists them by product and location. The report also forecasts industry demand, presents market share data and examines acquisition trends.

#1285. 6/00. $3,200

Cabinets
US demand for cabinets will grow over 5% annually through 2004. Residential improvements (e.g., kitchen and bathroom) will provide the best opportunities. Continuing increases in kitchen sizes and the number of bathrooms per unit will partially offset a decline in housing starts. Demand in the South and West will outpace the national average. This study analyzes the $9.6 billion US cabinets industry to 2004 and 2009 by material, market and region. It also profiles key firms and details market share data.

#1272. 6/00. $3,600

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