

INDUSTRY  
PROFILE

MD9505  
QUEEN  
HD  
9505  
.C3  
I5  
N4  
1988  
c.2

IC

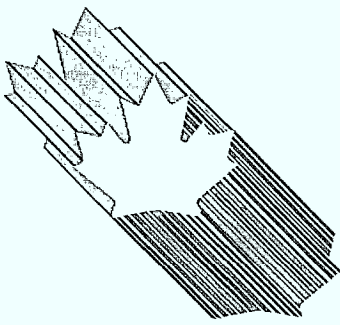


Industry, Science and  
Technology Canada

Industrie, Sciences et  
Technologie Canada

**Non-Structural, Wood-Based  
Panel Products**

Canada



# I N D U S T R Y P R O F I L E

## NON-STRUCTURAL, WOOD-BASED PANEL PRODUCTS

1988

### FOREWORD

.....

In a rapidly changing global trade environment, the international competitiveness of Canadian industry is the key to survival and growth. This Industry Profile is one of a series of papers which assess, in a summary form, the current competitiveness of Canada's industrial sectors, taking into account technological and other key factors, and changes anticipated under the Canada-U.S. Free Trade Agreement. Industry participants were consulted in the preparation of the papers.

The series is being published as steps are being taken to create the new Department of Industry, Science and Technology from the consolidation of the Department of Regional Industrial Expansion and the Ministry of State for Science and Technology. It is my intention that the series will be updated on a regular basis and continue to be a product of the new department. I sincerely hope that these profiles will be informative to those interested in Canadian industrial development and serve as a basis for discussion of industrial trends, prospects and strategic directions.

### 1. Structure and Performance

#### Structure

The non-structural wood-based panel products industry has four sub-sectors. These include manufacturers of *hardwood plywood and hardwood veneer, particleboard and medium density fibreboard (MDF), hardboard and insulation board.*

*Hardwood plywood* is generally manufactured from hardwood veneer and is made up of a number of veneer plies (depending on the desired thickness) which are glued together, usually at right angles. For many applications, particleboard, MDF or other wood-based products can be used as core material in place of veneer. *Hardwood veneer* is produced from logs using a rotary or slice cut and is then assembled into sheets. Veneer thickness and orientation can be varied to achieve a particular strength and appearance. The process involves considerable manual labour using both aesthetic and technical skills.

*Particleboard* is manufactured from wood particles that are dried and mixed with a resin binder. It is then laid out as a mat and pressed at high temperature and pressure to form a panel. *Medium density fibreboard (MDF)* is manufactured from wood fibres bonded together with a synthetic resin adhesive. The fibres are dried before they are formed into a mat for pressing. Density ranges from 660 to 860 kg/m<sup>3</sup>.

*Hardboard* is manufactured from wood fibres by a wet process. The fibre is produced by a mechanical refining process carried out at elevated temperatures. The density is high — between 900 and 1000 kg/m<sup>3</sup>. *Insulation board* is also manufactured from wood fibres by a wet process. The density is lower — in the 240 to 330 kg/m<sup>3</sup> range.

The majority of products are sold as standard size commodity sheet materials mainly for industrial uses such as office and residential furniture, kitchen cabinets and bathroom vanities. Construction is another important outlet, including the new, repair, renovation and do-it-yourself (DIY) markets. Products are generally used in non-structural applications in residential and commercial buildings. For example, hardwood plywood panels with high-quality veneers are used as prestigious decorative walls in offices, stores and dens. Particleboard is ideal for built-in shelving. One notable exception is insulation board. Approximately 30 to 40 percent of its production is consumed as sheathing material and, therefore, it has a structural application. Canadian wood-based panel products are manufactured to national standards using a non-waterproof type of bonding agent. With the exception of hardboard siding, they are generally only suitable for interior or protected use. Wood-based structural panel products for exterior use (softwood plywood and waferboard/OSB) are described in a separate industry profile.

Minister

DEPARTMENT OF REGIONAL  
INDUSTRIAL EXPANSION  
LIBRARY

JUN 14 1989

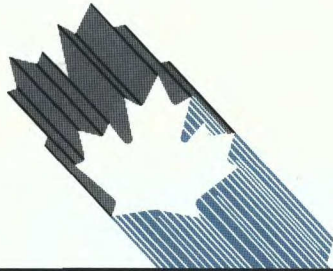
ACXU  
BIBLIOTHEQUE  
MINISTÈRE DE L'EXPANSION  
INDUSTRIELLE REGIONALE

Canada



Industry, Science and  
Technology Canada

Industrie, Sciences et  
Technologie Canada



**Imports, Exports and Domestic Shipments 1986**

In 1986, total shipments for the industry were worth approximately \$590 million, accounting for about 5.8 percent of total wood products shipments. Employment in direct manufacturing is estimated at about 6800 and represents some six percent of total employment in the wood products industry. In 1986, 65 percent of total shipments were consumed domestically. Exports of non-structural wood-based panel products have historically ranged between 30 and 40 percent of industry shipments, of which about 90 percent were directed mainly to U.S. markets. For 1986, total exports amounted to \$206 million, representing 35 percent of total shipments.

Hardwood plywood/veneer accounted for 60.2 percent of total industry exports, followed by particleboard/MDF, hardboard and insulation board, with shares of 22.3, 10.2 and 7.3 percent respectively. Within each sub-sector, however, exports for 1986 represented 52.5 percent of shipments for hardboard, 51.2 percent for hardwood plywood/veneer, 22.7 percent for insulation board and 19.2 percent for particleboard/MDF.

Imports, which have traditionally accounted for roughly one quarter of the domestic market, originate mostly in the United States (60 percent) and Asia (30 percent). In 1986, more than half of the imports (55 percent) were in the hardwood plywood/veneer sub-sector and involved wood not indigenous to Canada.

The overall industry consists of about 50 hardwood plywood/veneer mills, only a handful of which are consistently involved in plywood production, 12 particleboard and two MDF mills, six insulation board plants and three hardboard plants.

The relative importance of each sub-sector is illustrated in the following table.

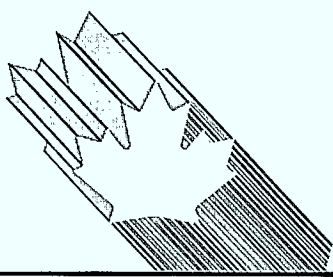
**NON-STRUCTURAL WOOD-BASED PANEL PRODUCTS INDUSTRY 1986**

Sub-sector	Shipments*	Exports	Imports	Employment*
		(\$ millions)		
Hardwood Plywood/Veneer	242	124	68	3 950
Particle-board/MDF	239	46	18	1 500
Hardboard	40	21	32	600
Insulation Board	69	15	6	750
<b>Total</b>	<b>590</b>	<b>206</b>	<b>124</b>	<b>6 800</b>

\* *ISTC estimate*

The non-structural wood-based panel products industry depends primarily on a renewable raw material supply obtained from two major sources. These are "roundwood," in the form of both large and low-grade hardwood logs; and "residues," principally sawmill by-products such as wood-shavings and sawdust, and small quantities of recycled newsprint. The other important raw material is urea-formaldehyde resin which serves as a bonding agent.

For the hardwood plywood/veneer sub-sector, the major raw material is veneer from large-diameter hardwood logs. For higher quality grades, the veneers used are mainly U.S. imports or manufactured from U.S. logs. For industrial uses, however, indigenous poplar is used almost exclusively. In fact, large hardwood plywood mills in central Canada depend on poplar.



Wood raw material for particleboard is almost entirely mill residues — sawdust and wood shavings. For economic reasons, mills in this sub-sector are generally near regions with a high concentration of sawmills and other wood transformation industries. Wood costs currently represent approximately 26 percent of total manufacturing costs. Equally important as a raw material input is the resin which is used as a bonding agent. Current resin costs account for about 24 percent of total manufacturing costs. In the manufacture of MDF, softwoods and hardwoods in the form of roundwood, slabwood, forest thinnings and factory residues, can be used. Roundwood and slabwood are converted into chips with a typical thickness of 20 mm. Timber residue chips are obtained directly from sawmills. They are steamed under pressure and then forced between the rotating discs of a refiner to produce fibre. As there are only two MDF plants in Canada, no precise information on input costs is available. In the United States, however, MDF wood and resin costs are generally similar (depending on region) to those of the particleboard industry. There is no reason to believe that the situation is different in Canada.

Hardboard and insulation board are manufactured from fibre or fibre bundles produced out of wood obtained from the same sources and using a similar refining process as with MDF. The production phase, however, involves a wet process in which the fibres, suspended in water, form a felted mat as excess water drains through a wire screen. For hardboard, the mat is then pressed at a high temperature and pressure. Interfibre bonding is achieved as a result of the natural resin present in the wood raw material. Only a minimal amount of synthetic resin binder is added. For insulation board, the mat is lightly pressed at room temperature and then put through a dryer. No synthetic resin is used and bonding is achieved with the natural fibre resin and additional starch. The major difference between the two types of board is density. High density hardboard has high internal bond strength, while insulation board is characterized by its low density.

Ownership of the non-structural wood-based panel products industry is generally Canadian (16 percent of industry shipments are under foreign control). Foreign ownership is most prevalent in the particleboard/MDF sub-sector where, out of a total of 14 mills, one is U.S.-owned, one is partially U.S.-owned and four are controlled by interests in the Federal Republic of Germany. These mills represent 36 percent of establishments and account for 51 percent of shipments in this sub-sector.

While the overall industry has production facilities throughout Canada, about 80 percent of total production is concentrated in the principal consuming provinces of Ontario and Quebec.

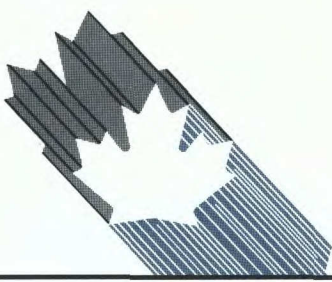
### **Performance**

During the late 1970s and early 1980s, overall industry performance declined because of the impact of alternative domestic and imported materials such as plastic and paper overlays, aluminum siding, non-wood-based insulation panels and imported Asian plywood doorskins. Most notable was the closure of a number of hardwood plywood plants that manufactured doorskins from domestic species; they could not compete against low-cost, Far East producers. Also during that period, plastics (high- and low-density melamine and paper overlays) displaced hardwood veneers as face material on furniture and kitchen cabinet panels. As well, waferboard, fibreglass and polystyrene panels replaced insulation board in residential construction. This led to the closure of three insulation board plants. Internal substitution occurred within the industry as well. Particleboard, upgraded with overlays such as paper foils and melamines and pre-finished hardboard, has in part replaced hardwood plywood in furniture and cabinetmaking.

From 1978 to 1983, the volume of shipments for the industry fell by an annual average rate of 1.1 percent. While complete shipment data are not yet available, it is reasonable to assume that the improvements which took place beginning in 1984, as indicated by high export levels, continued into 1988. Market improvements during the last three years were the result of strong housing activity and some adjustment measures adopted by the industry. For example, in response to reduced demand, the insulation board sub-sector developed specialized products such as commercial roof decking and concrete expansion joint material, for which there are growing market opportunities in North America.

Market demand for most non-structural wood-based panel products, originated mostly by furniture and kitchen cabinetmakers, tends to be about six to eight months behind housing construction. Recent forecasts indicate that new housing starts, both in Canada and the United States, should remain relatively strong through the first half of 1989, albeit at levels slightly below those achieved in 1987. Forecasts beyond 1989 indicate a reduced demand for new housing in response to changing demographics and an anticipated slowdown in economic activity.

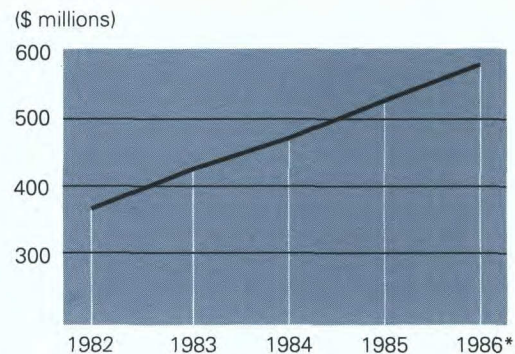
The industry has improved its capacity utilization considerably since the recession of the early 1980s. During the first half of the decade, the industry consistently operated below capacity with many companies experiencing extended periods of downtime. Beginning early in 1986, however, output increased due to improved market conditions and many plants now operate at or near capacity. In the particleboard/MDF sub-sector, these improved conditions increased capacity through plant expansions or new plants to the point where there is now overcapacity.



The non-structural wood-based panels industry has undergone substantial rationalization during the past 10 years. This has led to the closure of several hardwood plywood facilities, three particleboard mills, a large hardboard plant and three insulation board plants. During the same period, however, three new large and modern particleboard mills and two MDF mills have been established, while two particleboard mills are being constructed. Of the six remaining insulation board mills, one has recently expanded facilities while two others are currently being modernized. Total employment has not changed significantly during the period, although there has been a shift in employment, mainly from hardwood plywood to particleboard/MDF. Non-wood products such as brick and aluminum continue to exert pressure on the hardboard siding sub-sector. There has been an increase in the number of small but highly specialized producers and upgraders of hardwood veneers. Highly labour-intensive and using artistic and technical skills, these firms provide a custom service to larger hardwood veneer and plywood manufacturers in both Canada and the United States.

Exports have grown about three percent annually in volume during the past five years and were valued at \$206 million in 1986. Over this period, hardwood plywood/veneer exports remained virtually static, while exports of particleboard/MDF and insulation board have grown significantly — mainly to the United States. In 1986, total shipments to the United States represented close to 95 percent of industry exports. Imports, largely from the United States and the Far East, are mainly specialty hardwood plywood/veneer products manufactured from wood species not indigenous to Canada (U.S. oak veneer sheets and tropical plywood [doorskins]). In 1986, imports totalled \$124 million or 24 percent of domestic consumption, with hardwood plywood/veneer accounting for the largest share (55 percent) of industry imports.

While financial data are limited, industry information indicates that, with the exception of the particleboard and hardwood veneer sub-sectors, investment was not substantial in the early 1980s. However, given improved post-recession conditions, the industry indicates that its overall financial situation has improved significantly since 1984.



Shipments —————

**Total Shipments**

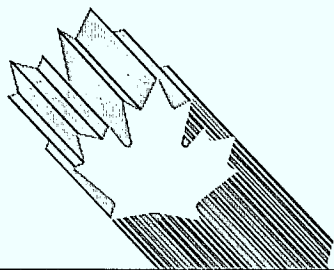
\* *ISTC estimate*

## **2. Strengths and Weaknesses**

### **Structural Factors**

Hardwood plywood/veneer producers are generally small to medium-sized, independent manufacturers, operating relatively labour-intensive plants which have not been modernized. Some veneer mills, however, are considered modern, as they use up-to-date machinery to improve productivity, make better use of raw materials and energy conservation. Because many temperate hardwood species (oak, walnut, cherry) are not available in sufficient quantities and qualities domestically, hardwood plywood/veneer production in Canada depends largely on hardwood logs from the United States. Consequently, the viability of the industry depends on the availability of suitable logs and their delivered cost.

Much of hardwood plywood/veneer is in strong demand by furniture and cabinetmakers, particularly in the U.S. market. This is because the Canadian industry is recognized for its high-quality standards. Canadian workers have traditionally demonstrated superior aesthetic and technical skills. Because the hardwood plywood/veneer sub-sector is generally made up of smaller, private firms, detailed production cost estimates are not available. However, as slightly more than half of Canadian production is exported, almost entirely to the United States, firms in the sub-sector are believed to be cost competitive with their U.S. counterparts. Also, due to the relatively high value of the product, transportation costs are not considered significant.



Particleboard/MDF producers are generally part of large, integrated, diversified forest products companies and, consequently, benefit from a broad industrial base. Canadian particleboard/MDF plants are generally modern and capable of producing high-quality products efficiently. The sub-sector has an adequate raw material base in the form of sawmill residues and low grade logs. To be viable, however, plants must be located close to their raw material sources. Detailed cost estimates indicate that Canadian firms are generally competitive with their U.S. counterparts in terms of resource, labour, productivity and manufacturing. Although transportation costs are significant, most Canadian mills are located sufficiently close to major domestic markets and those in the northeast and north central areas of the United States. However, due to the high bulk to value ratio, relatively high transportation costs hinder penetration of more distant markets in the United States and overseas.

The three remaining Canadian hardboard firms are also part of large integrated forest products companies. While technology and equipment have changed little over the years, firms have upgraded product lines to concentrate on value-added products such as exterior siding, decorative interior panelling and doorskins. Raw material supply (fibre produced from wood residues or low-grade roundwood) is considered adequate. Detailed cost estimates are not available. However, given export levels of more than 50 percent of production, almost entirely to the United States, the industry is generally believed to be competitive with its U.S. counterpart.

Of the six insulation board manufacturers, two are part of large integrated and diversified forest products companies. All plants are relatively labour-intensive and, generally, have not been modernized. While no detailed cost estimates are available, the sub-sector is generally believed to be competitive in U.S. border markets. The low-weight, low-value nature of insulation board precludes economical transportation over long distances.

**Trade-related Factors**

There are no tariffs on hardwood veneer entering Canada or the United States. Most other sub-sectors, however, face export and import tariffs.

**TARIFFS ON NON-STRUCTURAL WOOD-BASED PANEL PRODUCTS**

Sub-sector	Canada <sup>1</sup>	U.S. <sup>2</sup>	E.C.	Japan
		(Percent)		
Hardwood plywood	8.0	3.0-8.0	10.0	10.0
Hardwood veneer	nil	nil	6.0	5.0
Particleboard	5.0	4.0	10.0	8.0
MDF	6.5-9.2	3.0-6.0	10.0	3.5
Hardboard	6.5-9.2	3.0-6.0	10.0	6.5
Insulation board	6.5 <sup>3</sup>	nil	10.0	8.0

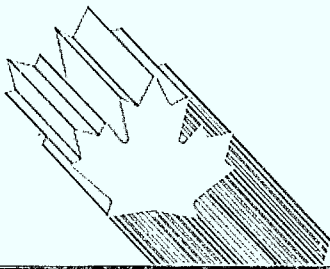
There are currently no known non-tariff barriers (NTBs) in the industry's export markets. Most products are used in non-structural applications and are not subject to building codes. However, U.S. product standards, which include regulations on formaldehyde emissions, pose potential barriers to Canadian exports of particleboard/MDF and hardwood plywood which are manufactured with urea-formaldehyde resins.

Important elements of the Canada-U.S. Free Trade Agreement (FTA) are the establishment of new trade remedy procedures and a binational dispute-settlement mechanism. A binational committee of experts has been established to direct the necessary work required to complete the development of common performance standards for softwood plywood. This stems from a recent decision by Canada Mortgage and Housing Corporation (CMHC) not to approve U.S. C-D grade plywood in housing financed by CMHC. Until this issue is resolved, the United States has indicated that it will not proceed with the phased-in elimination of tariffs on softwood plywood, waferboard/OSB and particleboard. Although Canada considers the U.S. position on tariff elimination inconsistent with the FTA, Canada has also delayed the implementation of tariff reductions. Particleboard producers in Canada will be affected by this delay and, consequently, the anticipated benefits of lower costs to the furniture and kitchen cabinet industries could also be delayed. The price for Canadian particleboard is normally the same as the U.S. product landed duty-paid in Canada.

<sup>1</sup> According to the FTA, with the exception of insulation board, Canadian tariffs on each of these product categories coming from the United States will be removed in five equal annual stages, commencing January 1, 1989. Products will be duty-free by 1993.

<sup>2</sup> According to the FTA, U.S. tariffs on each of these product categories coming from Canada will be removed in five equal annual stages, commencing January 1, 1989. Products will be duty-free by January 1, 1993.

<sup>3</sup> The phase-out period on insulation board is 10 years, making it duty-free by January 1, 1998.



### **Technological Factors**

In general, the level of technological development in Canadian mills is similar to that of the U.S. industry. Much of the technology used is European, Canadian or American and is available to all manufacturers.

Individual sub-sectors have demonstrated differences in both the development and implementation of technological innovation. Insulation board and hardboard industries are based largely on technology developed more than 20 years ago. Although there has been little advancement in recent years, hardboard producers are now examining the possibility of using their product as interior door and seat components for automobiles. Hardboard's strength and moulding characteristics make it highly suitable for such applications, as demonstrated in Japan, where approximately 45 percent of domestic production ends up in automobiles. By comparison, technological developments in manufacturing equipment, resin systems, fibre use and energy consumption have been adopted by many particleboard/MDF mills. New manufacturing and upgrading equipment have been installed by several Canadian veneer producers, particularly in newer plants.

### **3. Evolving Environment**

Market demand for non-structural wood-based panel products historically has been closely linked to activities in new housing construction. However, expenditures for repairs and renovations, both contractual and do-it-yourself, now exceed, in value, total expenditures on new housing. These expenditures are expected to continue to grow faster than the economy as a whole for 1988, and possibly beyond. This should provide increasing opportunities, particularly for particleboard, hardboard and insulation board producers. Particleboard, easily worked with ordinary hand tools, is used to build kitchen cabinets, bathroom vanities and built-in shelving. Its raw state can be painted or overlaid with melamine papers, vinyls and veneers to achieve the desired effect. Hardboard panels, prefinished in imitation wood grain, are particularly well-suited for dens and family/recreation rooms. Insulation board, useful as sound absorbing material in acoustic ceiling tiles, has now found a new market as a substrate in commercial new and re-roofing projects.

As renovation and repair expenditures are also growing in the United States, at least over the short to medium term, export markets should continue to provide opportunities for Canadian particleboard/MDF, hardboard, insulation board and veneer producers (provided the value of the Canadian dollar remains within an 80¢ to 85¢ range).

Investments in plant modernization, new product development and new technology installation can be expected to enhance raw material use and productivity. The impact on total industry employment, however, is not likely to be significant. The anticipated growth in the particleboard/MDF sub-sector should offset any reductions through productivity improvements and rationalization in the other sub-sectors.

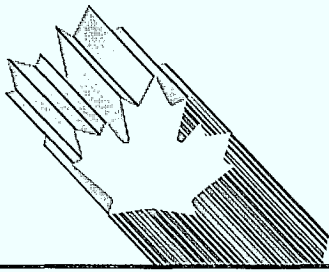
Canadian particleboard/MDF and hardwood plywood manufacturers continue to be concerned with uncertain future formaldehyde regulations in Canada and the United States. The industry in Canada has consistently reduced the level of formaldehyde emissions voluntarily in recent years. The Canadian industry constantly communicates with federal and provincial regulatory interests. In the United States the question is still being discussed.

Recognizing the protectionist U.S. initiatives that have confronted the Canadian industry over the past several years, the binational dispute-settlement mechanism under the FTA could be of major importance. This will provide enhanced security of access to the U.S. market as well as encouraging a positive trading environment. However, implementation of the FTA can be expected to increase U.S. competition significantly for Canadian furniture and kitchen cabinet industries.<sup>1</sup> This could result in industry rationalization and possible plant closures for the particleboard and hardwood plywood industries due to reduced business in Canada. However, this impact could possibly be offset in part as a result of increased business with U.S. manufacturers of furniture and kitchen cabinets.

### **4. Competitiveness Assessment**

The hardwood plywood sub-sector has declined in recent years with the closure of several plants. Although the Canadian industry is competitive with its U.S. counterpart, substitution by particleboard and hardboard is growing throughout North America and hardwood plywood appears to be losing ground in both domestic and U.S. markets.

<sup>1</sup> Refer to *ISTC industry profiles on Household Furniture, Office Furniture and Converted Wood Products.*



The hardwood veneer industry is generally competitive and accounts for close to 80 percent of the value and 70 percent of the volume of export shipments in the overall hardwood plywood/ veneer sub-sector. Although a substantial volume of production depends on U.S. logs, the competitiveness of the industry has not been affected. The reason being is that large volumes of veneer are re-exported to the United States to be made into plywood, mainly because of the high quality of Canadian veneer. Technological advances in veneer processing equipment, particularly in the veneer upgrading industry, should continue to improve productivity.

Particleboard/MDF output continues to expand and remains competitive in domestic and U.S. markets. In Canadian and U.S. mills, increased volumes are upgraded with surface overlays, such as wood veneers, high- and low-pressure melamine and paint, enabling this sub-sector to expand its range of end-use applications.

Hardboard producers are also considered competitive in the domestic and U.S. markets. However, substitution by alternative materials continues to be strong and there is a downward trend in demand for the product throughout North America.

The insulation board sub-sector is operating at a high level of output, reflecting the current strength of the construction industry. It is competitive in today's domestic and U.S. markets. Overall demand for insulation board has been gradually declining for some years in both countries. However, a large void created by the withdrawal of five large U.S. producers has allowed smaller-scale Canadian producers to increase U.S. exports significantly over the last five years.

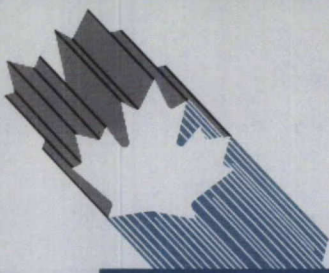
The FTA should enhance U.S. market access for existing and new product lines in the particleboard/ MDF, hardwood plywood, hardboard and insulation board sub-sectors. The FTA will not have a significant impact on hardwood veneer as these products have traditionally moved into the U.S. market duty-free.

For further information concerning the subject matter contained in this profile, contact:

Resource Processing Industries Branch  
Industry, Science and Technology Canada  
Attention: Non-Structural, Wood-based Panel  
Products  
235 Queen Street  
Ottawa, Ontario  
K1A 0H5

(613) 954-3051





**PRINCIPAL STATISTICS**

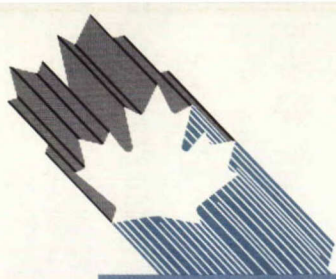
**SIC(s) COVERED\*: 2592, 2521, 2714 (1980 basis)**

	1973	1982	1983	1984	1985	1986
Establishments <sup>e</sup>	97	74	74	74	76	71
Employment <sup>e</sup>	6 800	6 800	6 800	6 800	6 850	6 800
Shipments (\$ millions)	246	372	424	475	525	590 <sup>e</sup>

**TRADE STATISTICS**

	1973	1982	1983	1984	1985	1986
Exports (\$ millions)	80	132	164	193	190	206
Domestic shipments (\$ millions)	166	240	260	282	335	384
Imports (\$ millions)	65	53	108	99	105	124
Canadian market (\$ millions)	231	293	368	381	440	508
Exports as % of shipments	33	35	39	41	36	35
Imports as % of domestic market	28	18	29	26	24	24
Canadian share of international market %	3	4	4	4	4	4
Source of imports (% of total value)			U.S.	E.C.	Asia	Others
		1982	53	1	36	10
		1983	47	1	42	10
		1984	61	1	30	8
		1985	61	1	32	6
		1986	60	3	30	7
Destination of exports (% of total value)			U.S.	E.C.	Asia	Others
		1982	89	8	1	2
		1983	90	6	1	3
		1984	92	4	1	3
		1985	91	4	2	3
		1986	86	7	3	4

**(continued)**



**REGIONAL DISTRIBUTION — Average over the last 3 years**

	Atlantic	Quebec	Ontario	Prairies	B.C.
Establishments – % of total	4	45	34	6	11
Employment – % of total	6	40	41	5	8
Shipments – % of total <sup>e</sup>	3	46	40	4	7

**MAJOR FIRMS**

Name	Ownership	Location of Major Plants
MacMillan Bloedel Limited	Canadian	Vancouver, British Columbia Nipigon, Sturgeon Falls, Ontario
G.W. Martin Ltd.	Canadian	Harcourt, Rutherglen, Sault Ste. Marie, Searchmont, Ontario
Commonwealth Plywood Co. Ltd.	Canadian	Ste-Thérèse, Princeville, St-Léonard-d'Aston, Tee Lake, Shawinigan, Belleterre, Quebec
Domtar Inc.	Canadian	Donnacona, Quebec Huntsville, Ontario
Weldwood of Canada Limited	American	Vancouver, British Columbia; Longlac, Ontario

<sup>e</sup> ISTC estimate

\* Includes hardwood plywood and veneer, hardboard, insulation board, particleboard and medium-density fibreboard sub-sectors.

**Note:** Since statistical and financial data are not generally available, it has been necessary to make a number of estimates in the preparation of this profile.

# Regional Offices

## Newfoundland

Parsons Building  
90 O'Leary Avenue  
P.O. Box 8950  
ST. JOHN'S, Newfoundland  
A1B 3R9  
Tel: (709) 772-4053

## Prince Edward Island

Confederation Court Mall  
Suite 400  
134 Kent Street  
P.O. Box 1115  
CHARLOTTETOWN  
Prince Edward Island  
C1A 7M8  
Tel: (902) 566-7400

## Nova Scotia

1496 Lower Water Street  
P.O. Box 940, Station M  
HALIFAX, Nova Scotia  
B3J 2V9  
Tel: (902) 426-2018

## New Brunswick

770 Main Street  
P.O. Box 1210  
MONCTON  
New Brunswick  
E1C 8P9  
Tel: (506) 857-6400

## Quebec

Tour de la Bourse  
P.O. Box 247  
800, place Victoria  
Suite 3800  
MONTRÉAL, Quebec  
H4Z 1E8  
Tel: (514) 283-8185

## Ontario

Dominion Public Building  
4th Floor  
1 Front Street West  
TORONTO, Ontario  
M5J 1A4  
Tel: (416) 973-5000

## Manitoba

330 Portage Avenue  
Room 608  
P.O. Box 981  
WINNIPEG, Manitoba  
R3C 2V2  
Tel: (204) 983-4090

## Saskatchewan

105 - 21st Street East  
6th Floor  
SASKATOON, Saskatchewan  
S7K 0B3  
Tel: (306) 975-4400

## Alberta

Cornerpoint Building  
Suite 505  
10179 - 105th Street  
EDMONTON, Alberta  
T5J 3S3  
Tel: (403) 495-4782

## British Columbia

Scotia Tower  
9th Floor, Suite 900  
P.O. Box 11610  
650 West Georgia St.  
VANCOUVER, British Columbia  
V6B 5H8  
Tel: (604) 666-0434

## Yukon

108 Lambert Street  
Suite 301  
WHITEHORSE, Yukon  
Y1A 1Z2  
Tel: (403) 668-4655

## Northwest Territories

Precambrian Building  
P.O. Bag 6100  
YELLOWKNIFE  
Northwest Territories  
X1A 1C0  
Tel: (403) 920-8568

*For additional copies of this  
profile contact:*

*Business Centre  
Communications Branch  
Industry, Science and  
Technology Canada  
235 Queen Street  
Ottawa, Ontario  
K1A 0H5*

*Tel: (613) 995-5771*