Hardwood Plywood from China
ITC Inv. Nos. 701-TA-565 and 731-TA-1341

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Presentation at the ITC

On behalf of the
Coalition for Fair Trade in Hardwood Plywood

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Overview

Conditions of Competition

Long-Term Trends

Conclusions
Conditions of Competition

- Substitutability
- Demand
- Capital Intensive Industry
- Certification
The Hardwood Plywood (HWPW) industry competes on the following characteristics:

- Grade
- Core
- Overall Thickness
- Face Species
The ITC Identified the Key Characteristics of HWPW

"Hardwood plywood products are differentiated by species, quality of veneer, thickness, number of plies, type of core (veneer, particleboard, MDF, or other), and the type of adhesive used in the manufacturing process."

Chinese Importers Confirm the Key Physical Characteristics

White Birch / Betula Platypylla

General Information
Chinese White Birch plywood is the centerpiece of our imported plywood product line. This highly versatile wood is produced from carefully selected whole piece rotary-cut Birch veneers harvested in China and Russia. Our import hardwood China Birch panels are sure to offer exceptional value to all USA plywood distributors and companies that manufacture plywood.

Grades
Proprietary Face/Back grades are: A-2, B-2, C-2, C-3, C-4, D-2, E-E and F-F.

Characteristics
Creamy uniform white color with occasional small brown pin knots, tight grain, closed pores, hard and durable, finely-textured, smoothly sanded, satin-like sheen. White Birch has exceptional machining properties and is suitable for natural, colored, and painted finishes.

Origin
People's Republic of China (Chinese Birch Plywood), Russia (Russian plywood)

Thickness and Dimension
5.2mm (1/4"), 9mm (3/8"), 12mm (1/2"), 15mm (5/8"), 18mm (3/4") and 25mm (1").

Most panels are 4x8 but we also offer 48.5x96.5, various oversized panels including 4x9, 4x10, 5x8, 5x9 and 5x10 and Cut-to-size panels. All panels tightly calibrated to ensure exceptional thickness tolerances.

Source: www.feaco.com/products/imported-hardwoodplywood/white-birch/, 12/7/16
Chinese Importers Confirm the Key Physical Characteristics (cont’d)

**Thickness and Dimension**

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**Glue Types**

We offer E-1, E-2, CARB II Certified, NAF, NAUF and Moisture Resistant MR Type II interior glues.
Melamine & WBP Phenolic Type I Exterior glues.

**Cores**

We offer our White Birch plywood panels in a wide variety of cores from our standard multiply Poplar veneer core to high-end lamination grade veneer cores. Speciality cores include sturdy combination cores, ultra-lightweight veneer cores, MDF cross band veneer core and finger-jointed lumber cores.

**Applications**

Cabinetry, Furniture, Trim work, Fixtures, Closets, Counter Tops, Entertainment Centers, Lamination.

**Features**

Our Chinese White Birch plywood is manufactured in select factories under tight supervision by our team of employees and inspectors for a consistently high quality panel. Our product features durable packaging consistent with strict FEA regulations for maximum product protection and easy handling.

In collaboration with our Chinese manufacturing partners, we offer a complete array of industrial and appearance plywood for most any application. Now marketed under the NWHPLY brand name, this plywood product line offers a variety of species with an array of core options that provide whatever your application requires. Glue options include CARB 2 certified, ULEF and MR.

**Thicknesses:**
3 mm, 5.2 mm, 9 mm, 12 mm, 15 mm, 18 mm, 19 mm, 21 mm, 25 mm, 30 mm

**Dimensions:**
4' x 8', 4' x 9', 4' x 10', 4' x 12'
5' x 8', 5' x 9', 5' x 10', 5' x 12'

**Glue:**
CARB 2 certified, ULEF, MR

**Cores:**
- Premium Veneer Core (VC)
- MDF
- MD/VC

Chinese Importers Confirm the Key Physical Characteristics (cont’d)

Plywood Products from China

WHITE BIRCH WPF
Size: 4x8
Thickness Available: 2.7-25MM
Grades Available: B1, B2, B4, C1, C2, C4
Applications: Cabinets, Furniture, Lamination, General Woodworking & Manufacturing

Core Options
- Poplar VC

Glue Options
- E2
- CARB

Source: www.libertywoods.com/products/china/ accessed on 12/5/16
US Manufacturers Confirm the Key Physical Characteristics

A standard beyond the standard

ANSI/HPVA defines hardwood plywood as "a panel composed of an assembly of layers or plies of veneer or veneers in combination with lumber core, particleboard core, MDF core, hardboard core, or of a special core material joined with an adhesive. Except for special constructions, the grain of alternate plies is at right angles and the face veneer is a hardwood species."

Specifications

<table>
<thead>
<tr>
<th>Species</th>
<th>various</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face grades</td>
<td>A,B,C,D,E</td>
</tr>
<tr>
<td>Back grades</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Sizes</td>
<td>4x6, 4x7, 4x8, 4x10, 5x8, 8x4</td>
</tr>
<tr>
<td>Thickness</td>
<td>1/8&quot; to 1-1/4&quot;</td>
</tr>
<tr>
<td>Core types</td>
<td>JayCore®, KayCore®, veneer core, particleboard core (PBC), medium density fibercore (MDF), combination core, Classic Core®, lumber core</td>
</tr>
</tbody>
</table>

Source: [http://www.columbiaforestproducts.com](http://www.columbiaforestproducts.com) 12/7/16
# Comparison of Wood Species Sold

<table>
<thead>
<tr>
<th>Species</th>
<th>US</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birch</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Red Oak</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>White Oak</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cherry</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Walnut</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Maple</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ash</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lauan</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mahogany</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pine</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Alder</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Poplar</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
## Substitutability - All Grades Available

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Birch</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Maple</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Oak</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Walnut</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Excerpt of email from Chinese importer regarding similar grades.

Nice day.

1. B2 is the best grade exported to the US. B2 equivalent to A.

1. About the Sliced out of Walnut. Maple. Cherry: The face & back is B2 Grade.

2. About the Rotary cut of Birch: The face & back is B2 Grade.

Because we have been working with "hardwoods usply bluelinx". So we will give you the best quality.
Excerpt of email from Chinese importer regarding similar grades. (cont’d)

The latest quotation as attachment.

<table>
<thead>
<tr>
<th>Technics</th>
<th>face&amp;back</th>
<th>Thickness</th>
<th>FOB Qingdao/m³</th>
<th>FOB Qingdao/pc</th>
<th>Loading by 40HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sliced cut</td>
<td>Walnut</td>
<td>12mm</td>
<td>$641/m³</td>
<td>$22.90/pc</td>
<td>1440pcs/18pallets/51.44m³</td>
</tr>
<tr>
<td></td>
<td>Maple</td>
<td>12mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cherry</td>
<td>12mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walnut</td>
<td>18mm</td>
<td>$532/m³</td>
<td>$28.51/pc</td>
<td>954pcs/18pallets/51.12m³</td>
</tr>
<tr>
<td></td>
<td>Maple</td>
<td>18mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cherry</td>
<td>18mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Rotary cut | Birch   | 12mm | $484/m³ | $17.28/pc | 1440pcs/18pallets/51.44m³ |
|            |         | 18mm | $441/m³ | $23.65/pc | 954pcs/18pallets/51.12m³ |
# Overall Panel Thickness Sold

<table>
<thead>
<tr>
<th>Thickness in Inches</th>
<th>US</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 &quot; and thinner</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3/8 &quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
US and Chinese Producers Provide All Core Types

<table>
<thead>
<tr>
<th>Core Type</th>
<th>US</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veneer</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Particleboard</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MDF</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
US and China HWPW Compete Head-to-Head Among Product Characteristics

Head-to-Head

- Core (VC, MDF, PB)
- Widths and Lengths
- Glue
- Quality
- Species
- Availability

Not Significant

- Face Veneer Thickness
- Core (types of VC)
- Moisture
- Strength
- Decorative vs. Non-Decorative Uses
Apparent Domestic Consumption and US Housing Starts

Source: USAD FAS database, US Dept. of Census
HWPW is a Capital Intensive Industry

- A greenfield plant costs over $100 million
- High fixed costs require that US manufacturers operate at a high level of capacity utilization
- High capacity utilization is best achieved by long runs of high-demand SKUs.
- Prolonged inability to operate at high capacity levels leads to plant shutterings.
Certification

Both US and Chinese producers are certified to:

- California Air Resources Board Formaldehyde Emissions Standard (CARB)

- EPA Formaldehyde Emissions requirement will be nationwide in 2017

- Timber legality under the US Lacey Act

Source: HPVA
Long-term trends are consistent with injury by Chinese imports.

- Domestic industry capacity and production declined
- Plants were shuttered
- Apparent domestic consumption increased
- Chinese import penetration and market share increased
- Domestic industry shipments and market share decreased.
US Production and Chinese Imports of HWPW

Source: HPVA Annual Stock Reports, 2002-2015, USDA FAS Database