

**Würth Baer Supply**

# **HARDWOOD PANEL GUIDE**



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## Exotic Veneers

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PS Anegre



QTR Anegre



Ribbon Sapele



Bird's Eye Maple



PS Natural Bamboo



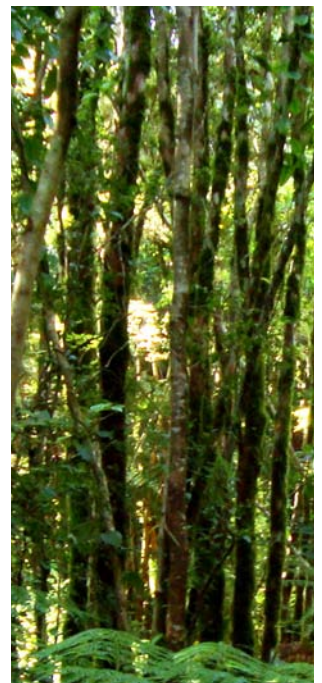
QTR Caramel Bamboo



PS Jatoba



PS Teak



QTR Teak



QTR Zebrawood

## Engineered Veneers

Hardwood Panels with an engineered face veneer can be used anywhere a panel with a traditional hardwood veneer is used, including retail environments, hospitality, office furniture, etc. The engineered veneer on the hardwood panel is produced by slicing thin layers from lesser valued trees, recombining them into multi-ply panels over undulating press plates and resliced, which results in veneers that convincingly mimic high-character species such as Zebrawood.



QTR Wenge



QTR Zebrawood



QTR Teak



PS Teak



QTR Ebony Light



QTR Ebony Brown



(RIFT) White Oak



QTR Walnut



PS Walnut



PS Cherry



QTR Cherry



QTR Maple





## Domestic Veneers

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Natural Ash



Natural Birch



White Birch



Red Birch



Red Oak



Natural Maple



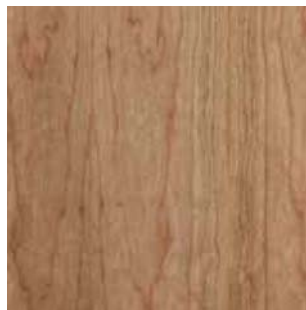
White Maple



White Ash



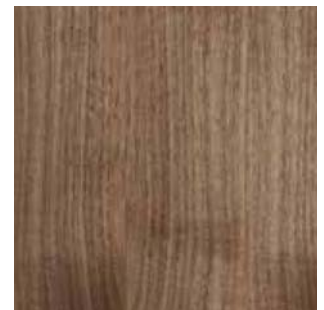
Okoume



Cherry



Hickory



Walnut



Alder



Mahogany



ES Beech

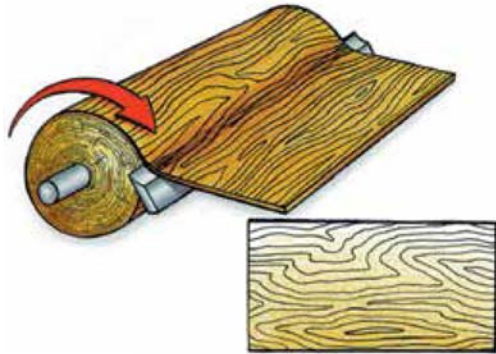


White Oak

## Slicing Options

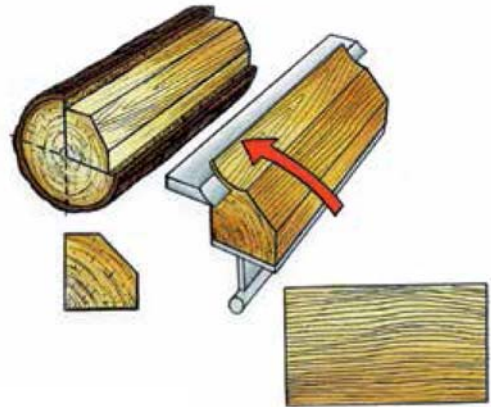
### Types of Veneer Cuts

Depending on the manner in which a log is cut, strikingly different visual effects can be achieved with the wood's grain and characteristics. Two logs of the same species, cut in different ways, produce distinctive, individual veneers.



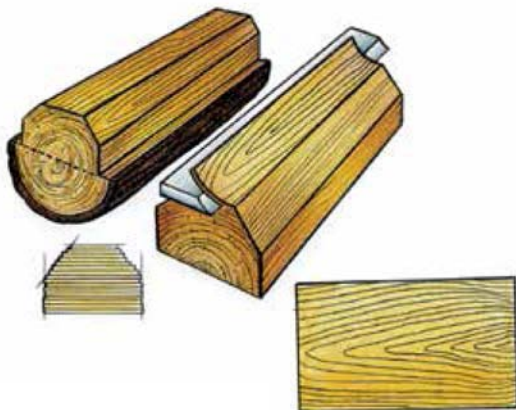
#### Rotary

The entire log is cut or "peeled." It can yield full sheets of veneer with broad grain pattern and no plain or quarter-sliced appearance.



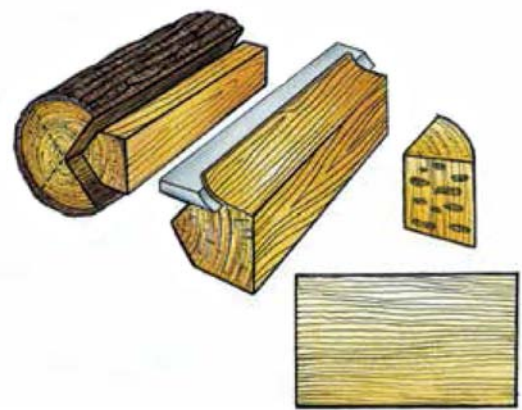
#### Rift Cut

A cut angle of 15 degrees to the radius of the flitch is used to minimize the ray flake affect in oak.



#### Plain Slicing

The half log, or flitch, is mounted with the heart side flat against the flitch table of the slicer. The slicing is done parallel to a line through the center of the log to produce a distinct figure.

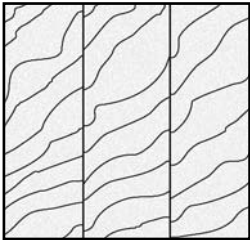


#### Quarter Slicing

This method produces a series of stripes - straight in some woods, varied in others. A flake pattern is produced when slicing through medullary rays in some species, principally oak. Most species produce the same look as rift cut.

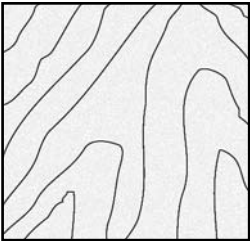
## Panel Options

Natural coloration and arrangement of veneer, comprising the panel face, determine the resulting visual effect. Different matching techniques are used for specific panel applications.



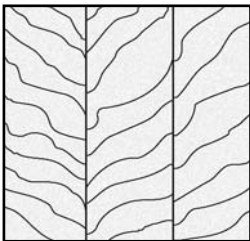
### **Slip Match**

Adjacent veneer sheets are joined side by side, same sides up, for a uniform grain pattern.



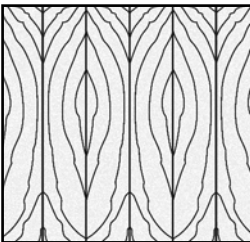
### **Whole Piece**

One single piece of veneer is used, with continuous grain characteristics running across the sheet.



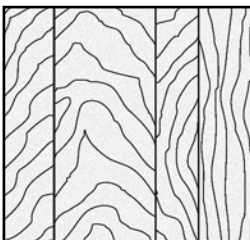
### **Pleasing Match**

Veneers are matched by color or similarity, not necessarily by grain characteristics.



### **Book Match**

Every other piece of adjacent veneer is turned over, resulting in identical, but opposing patterns.



### **Random Match**

Veneers intentionally do not match at the joints, providing a casual effect.



## Grade Options

### Rotary Birch

Rotary cut birch is the most popular hardwood plywood. Available in select, uniform and natural veneers, birch ranges in color from cream to light brown. Adaptable as a paint or stain grade panel. Top quality birch plywood is used for cabinets in many kitchens and in fine furniture. Lower grade panels are often used for shelving and industrial (furniture) products.



### Grade "A" Birch

- Up to six 3/32" pin knots.
- Scattered small burls.
- Slight mineral streaks.
- Maximum of two hairline splits no longer than 1/16" x 6" tapering to a point.
- Book matched if spliced.

### Grade "B" Birch (Medallion)

- Maximum of six 1/4" sound pin knots of which four may be 1/8" repaired.
- Vine marks running with the grain and well scattered.
- Two small 5" rough grain areas.
- Maximum of two hairline splits no longer than 1/8" x 8" tapering to a point.
- If spliced, generally book matched or matched for color.

### Grade "C" Birch (2 Face)

- Maximum of six 1/2" sound knots of which two may be 1/4" repaired.
- Vine marks running with the grain.
- Two 8" areas of rough grain.
- Maximum of two repaired splits no longer than 3/16" x 8" per panel end tapering to a point..
- Spliced version may be mismatched for grain but no sharp color contrast at the joints.



### Grade "D" Birch (Monarch)

- Four 1" sound knots.
- Three 3/4" repaired knots.
- May have heavy vine marks with the grain.
- Maximum fifteen characteristics in total.
- Maximum of three repaired splits no longer than 3/16" x 10" per panel end tapering to a point.
- Generally whole piece, no sharp color contrast at the joint on spliced faces.





## Grade Options

### Rotary Red Oak

With its open and abundant heartwood, rotary red oak varies from reddish tan to brown. Its consistent coloration from panel to panel makes it a good choice for a wide variety of furniture, cabinets and fixtures.



### Grade "A" Red Oak

- Up to six 3/32" pin knots.
- Scattered small burls.
- Slight blending mineral streaks of 6".
- Up to 5% sapwood.
- Maximum of two hairline splits no longer than 1/16" x 6" tapering to a point.
- Book matched if spliced.

### Grade "B" Red Oak (Medallion)

- Maximum of six 1/4" sound pin knots of which four may be 1/8" repaired.
- Blending mineral streaks of 8".
- Up to 20% sapwood.
- Maximum of two repaired splits no longer than 1/8" x 8" tapering to a point.
- May be book, slip or color matched.

### Grade "C" Red Oak (2 Face)

- Six 1/2" sound knots of which two may be 1/4" repaired.
- Mineral streaks of 12".
- Up to 25% sapwood.
- Maximum of two repaired splits no longer than 3/16" x 8" per panel end tapering to a point..
- Generally not book matched but no sharp color contrast at the joints.





## Grade Options

### Rotary Maple

Pleasing tight grained pattern suitable as both a stain and paint grade panel. Often used in combination with birch in cabinets and other fixtures. Color ranges from near white to reddish brown.



#### Grade "A" Maple

- Up to six 3/32" pin knots.
- Scattered small burls.
- Slight vine flecks.
- Maximum of two hairline splits no longer than 1/16" x 6" tapering to a point.
- Book matched or whole piece.

#### Grade "B" Maple (Medallion)

- Maximum of six 1/4" sound pin knots of which four may be 1/8" repaired.
- Vine marks allowed.
- Two small 5" rough grain areas.
- Maximum of two repaired splits no longer than 1/8" x 8" tapering to a point.
- If spliced, generally book matched, may be slip matched or matched for color.

### Rotary Ash

Rotary Ash is similar to Oak with its prominent, open grain. Its heartwood is light tan to brown in color and its sapwood a creamy white. Fine choice for cabinetry and furniture of all types.



#### Grade "A" Ash

- Up to six 3/32" pin knots.
- Scattered small burls.
- Slight, clear worm tracks.
- Maximum of two hairline splits no longer than 1/16" x 6" tapering to a point.
- Book matched or whole piece.

#### Grade "B" Ash (Medallion)

- Maximum of six 1/4" sound pin knots of which four may be 1/8" repaired.
- Some worm tracks that do not detract from the appearance of the panel.
- Maximum of two repaired splits no longer than 1/8" x 8" tapering to a point.
- If spliced, generally book matched, may be slip matched or matched for color.

## Grade Options

### Backs



#### **"1" Back**

- Up to eight scattered 3/8" knots.
- Two 8" areas of rough grain.
- Matched and mismatched veneer components.
- Maximum of two splits no longer than 1/8" x 8" per panel end tapering to a point.



#### **"2" (Medallion) Back**

- Scattered small knots and up to eight 3/4" solid knots.
- Three 1/2" repaired knots.
- Rough grain allowed.
- Maximum of three repaired splits no longer than 3/16" x 10" per panel end tapering to a point.



#### **"3" (Monarch) Back**

- Maximum fifteen 1/2" to 1-1/2" knots.
- Maximum five 1" repaired knots.
- Bark streaks.
- Vine marks.
- Mineral streaks.
- Unlimited small defects.
- Veneer laps
- Maximum of three repaired splits no longer than 3/8" x 12" per panel end tapering to a point.
- Any matching.

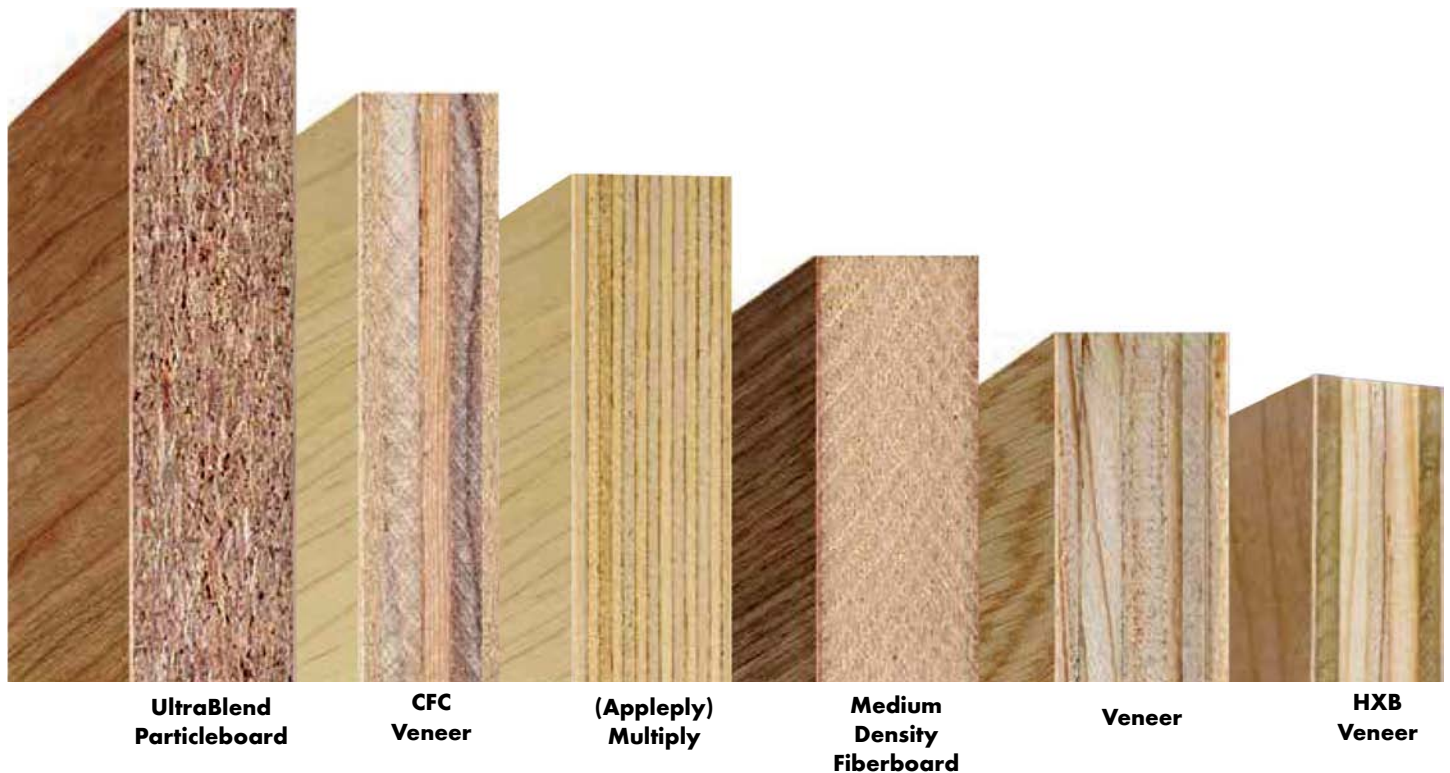
#### **"4" (Reject) Back (Not pictured)**

- Unlimited knot holes.
- Any number of tight knots and burls.
- Splits: 1" wide quarter of panel, 1/2" wide half of panel, 1/4" wide full length.





## Core Options



### UltraBlend Particleboard

Multi-layered substrate, produced using a blend of western softwoods. It is ECC certified 100% pre-consumer recycled wood fiber particleboard. The combination of sanding to extremely smooth, tight and grainless surfaces on both sides, with a controlled distribution pattern of particles in the core, results in a perfect, dimensionally stable panel.

### CFC Veneer

Combination Fiber Core (CFC) veneer core combines MDF cross bands with softwood veneer innerplies. The MDF cross bands provide an ultra smooth surface to reduce telegraphing through the face, while the veneer innerplies maintain the strength and screw-holding power of a veneer core panel. This option is recommended for high-end veneers.

### (Appleply) Multiply

A premium quality Multi-layer veneer core panel constructed of nearly void free uniform birch veneer. This all hardwood core produces an attractive uniform edge for those requiring an exposed edge finish. Often used for drawer sides, this panel is also preferred for its consistent cutting performance.

### Medium Density Fiberboard

Makes for a very smooth, consistent panel. This is a great substrate for high-end veneer and for applications when routing and shaping are required.

### Veneer

Constructed using innerplies composed of Western softwoods. Veneer core panels are lightweight, dimensionally stable and have excellent screw-holding capacity.

### HXB Veneer

Combines the smooth finish of a Poplar veneer crossband beneath the hardwood face and back with the strength and durability of western softwood veneer innerplies. Together they create an excellent hardwood plywood panel that is smoother and has less potential for core telegraphing.

## Charateristics of Hardwood Veneer



Mineral Streak



Vine Mark



Burl



Sap



Gum Spots



Mismatched Splice



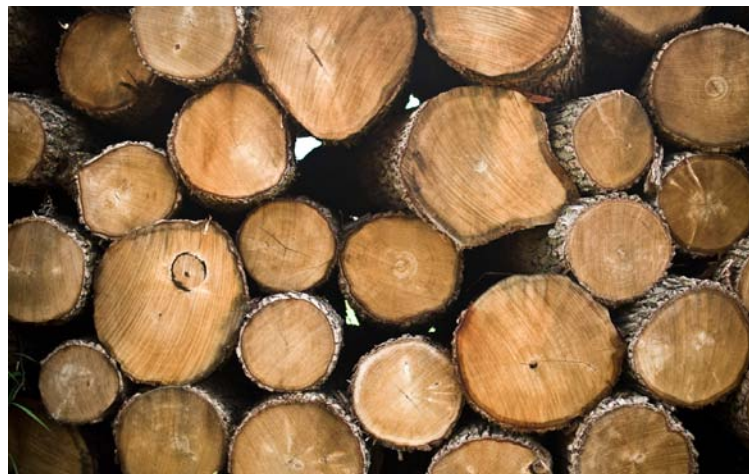
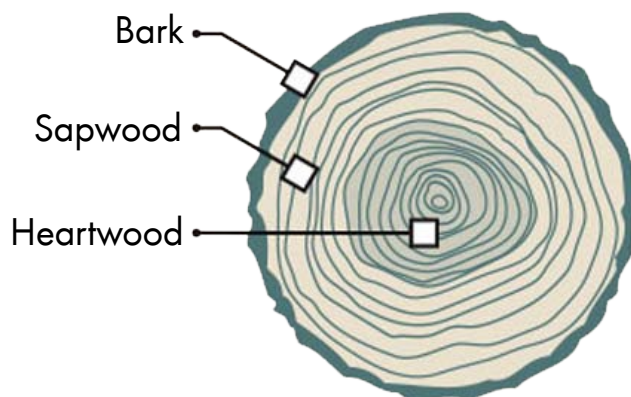
Rough Grain



Split Heart



Knot Holes, Various Sizes





## Hardwood Plywood Terms

**Backs:** The reverse side to the face of a plywood panel. Generally, the poorer side of any grade plywood panel calling for a front and back.

**Bark Pocket:** A small area of bark around which normal wood has grown.

**Core:** The innermost portion "center" of plywood usually composed of veneer. A core may also be made of fiberboard, particleboard or lumber.

**Crossbar:** An imperfection or irregularity in the grain of wood running at right angles to the length of the board.

**Crossbanding:** Inner ply veneer placed at right angles to the core, face and back of a plywood panel.

**Defects:** Anything interrupting the smooth flow of a wood surface. This includes loose knots, splits, voids, wormholes, bark pockets and others.

**Delamination:** The separation of the inner plies in a panel due to the failure of the adhesive bond.

**Face:** The best side of a plywood panel in which the outer veneers are of different grades.

**Grain:** The pattern, size and direction of the fibers in wood or veneer.

**Gum Spots:** Accumulation of resinous material often found on panel surfaces. May be removed by sanding.

**Half-Round Slicing:** Off-center slicing cut slightly across the annular growth rings resulting in half-round, plain sliced or rotary characteristics.

**Hardwood:** General term referring to the wood of many different deciduous trees as opposed to the softwood of evergreen or coniferous trees. Does not relate to the density of the wood.

**Heartwood:** The center portion of a tree consisting of mature wood that has stopped growing. Generally distinguishable from sapwood or the growing outer portion by its darker color.

**Knot:** Circular portion of a board or veneer that was once the base of a branch or twig growing from the trunk of a tree.

**Knot (Open):** Opening produced when a portion of a knot has dropped out or separated due to seasoning.

**Knot (Pin):** Sound knots less than 1/4" in diameter.

**Knot (Sound):** Knots that are solidly fixed by growth and retain their place in lumber or veneer.

**Knothole:** Opening produced when knots drop from the wood in which they were once embedded.

**Lap:** The overlapping of one piece of veneer on another in the same layer of ply.

**Medium Density Fiberboard (MDF):** A panel or core material manufactured from pressure cooked wood fiber, resin and wax.

**Mineral Streak:** A discoloration of hardwood and hardwood veneer.

**Particleboard:** A panel or core material manufactured from pressed sawmill shavings, resin and wax.

**Patches:** Filler material inserted into defects of veneers or panels for repair.

**Plain Sliced:** Veneer sliced from a log tangent to the tree's annual rings.

**Ply:** A single sheet of veneer forming one layer in a multilayered piece of plywood.

**Plywood, Hardwood:** A panel composed of layers of inner plies, or other core material joined with an adhesive to a face veneer of hardwood and a back veneer, usually also composed of hardwood.

**Quarter Slicing:** Quartered log sliced at right angles to the growth rings.

**Rift Cut:** Veneer cut from a quartered log on a 90 degree angle to the grain.

**Rotary Cut:** Veneer peeled from a whole log set in a lathe and turned against a special knife.

**Sapwood:** The light colored, living portion of a tree located between the heartwood and the bark.

**Slip Matched:** Veneer sheets that are laid side by side to form a whole sheet with a repetitive grain appearance.

**Splits:** Separations of the wood fiber running parallel to the grain.

**Veneer:** Peeled or sliced thin sheets of wood used as inner plies or as decorative faces.

Conversion Table U.S./Metric						
U.S.(inches)/ Metric (millimeters)	1/32" / 0.8mm	1/16" / 1.6mm	3/32" / 2.4mm	1/8" / 3.2mm	5/32" / 4.0mm	3/16" / 4.8mm
	1/4" / 6.4mm	5/16" / 7.9mm	3/8" / 9.5mm	7/16" / 11.1mm	1/2" / 12.7mm	9/16" / 14.3mm
	5/8" / 15.9mm	11/16" / 17.5mm	3/4" / 19.1mm	13/16" / 20.6mm	7/8" / 22.2mm	15/16" / 23.8mm
	1" / 25.4mm	1-1/8" / 28.6mm	1-1/4" / 31.8mm	1-1/2" / 38.1	1-3/4" / 44.5mm	2" / 50.8mm
	2-1/4" / 57.2mm	2-1/2" / 63.5mm	3" / 76.2mm	4" / 101.6mm	5" / 127.0mm	6" / 152.4mm

# Plywood Quote/Order Form

Select one:

Quote ☐ Order ☐

**Fax to: 888-558-2237**

Date: \_\_\_\_\_

Purchase Order: \_\_\_\_\_

Customer Name: \_\_\_\_\_

Quote Request: \_\_\_\_\_

Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

Address: \_\_\_\_\_

Fax: \_\_\_\_\_

Account #: \_\_\_\_\_

Email: \_\_\_\_\_

Face Species: \_\_\_\_\_

Face Grade: (check one) A ☐ B ☐ C ☐ D ☐

Back Species: \_\_\_\_\_

Back Grade: (check one) 1 ☐ 2 ☐ 3 ☐ 4 ☐

Panel Thickness: (check one) 1/4" ☐ 1/2" ☐ 5/8" ☐ 3/4" ☐ 1" ☐ 1-1/8" ☐

☐ Other Thickness: \_\_\_\_\_

Panel Width: \_\_\_\_\_

Panel Length: \_\_\_\_\_

Veneer Cut: (check one) ☐ Rotary ☐ Plain Sliced ☐ Rift ☐ Quarter Sliced ☐ Other \_\_\_\_\_

Core Material: (check one) ☐ Veneer ☐ Particle Board ☐ MDF ☐ Armorcore ☐ ApplePly

Number of Panels Requesting: \_\_\_\_\_

Date Needed By: \_\_\_\_\_

Comments/Special Requests: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

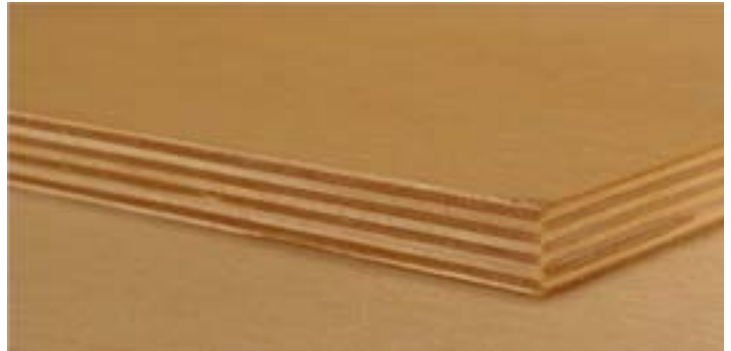
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## Domestic/Russian (Baltic) Ply Grades

<b>Russian/Baltic</b>		
<b>Thickness</b>	<b>Plys</b>	<b>Grades</b>
3.0 mm	3	B/BB , BB/BB , BB/CP
4.0 mm	3	B/BB , BB/BB , BB/CP
6.5 mm	5	B/BB , BB/BB , BB/CP
9.0 mm	7	B/BB , BB/BB , BB/CP
12.0 mm	9	B/BB , BB/BB , BB/CP
15.0 mm	11	B/BB , BB/BB , BB/CP
18.0 mm	13	B/BB , BB/BB , BB/CP
21.0 mm	15	B/BB , BB/BB , BB/CP
24.0 mm	17	B/BB , BB/BB , BB/CP
27.0 mm	19	B/BB , BB/BB , BB/CP
30.0 mm	21	B/BB , BB/BB , BB/CP



<b>Domestic</b>		
<b>Thickness</b>	<b>Plys</b>	<b>Grades</b>
1/4"	3	A,B,C,D/1,2,3,4
3/8" , 1/2"	5	A,B,C,D/1,2,3,4
5/8" , 3/4"	7	A,B,C,D/1,2,3,4
3/4"	9 (SPECIFIED)	A,B,C,D/1,2,3,4
1"	9	A,B,C,D/1,2,3,4
1 1/8"	11	A,B,C,D/1,2,3,4



# HARDWOOD PANEL GUIDE

Würth Baer Supply  
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F: 888-558-2237  
[www.Würthbaersupply.com](http://www.Würthbaersupply.com)

**Other locations:**

Decatur, IL  
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Kansas City, MO  
Fenton, MO  
Edison, NJ  
Pennsauken, NJ  
Syracuse, NY  
Guilderland Center, NY

Brooklyn Heights, OH  
Columbus, OH  
Middletown, OH  
Bethlehem, PA  
Harrisburg, PA  
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