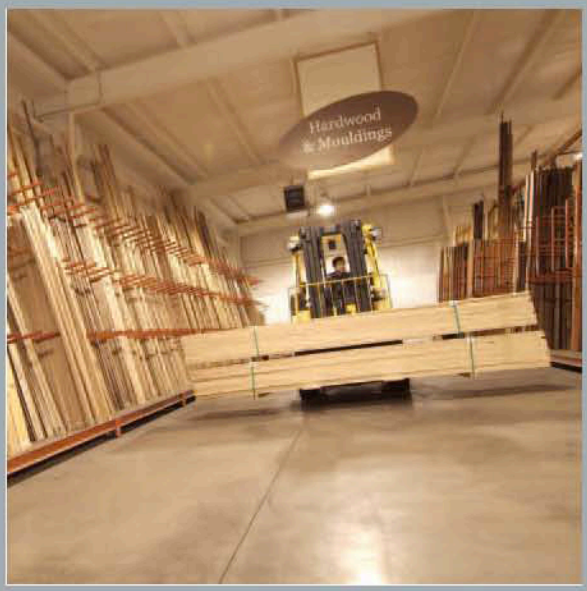
Hardwoods
incorporated

PRODUCT CATALOGUE



Hardwoods incorporated

- **Clarksville Tennessee Location**
  310 Dover Road
  Clarksville, TN 37042
  877-989-9663
  931-802-2534

Hours: 8:00 a.m. – 5:00 p.m. Monday – Friday

DISTRIBUTION CENTER CATALOGUE

OUR HISTORY

Our company was founded in 1952 in Knoxville, Tennessee by James W. Howard, Sr. He started as a lumber broker, selling to furniture manufacturers in eastern Tennessee. In the mid 1950s, he moved to Atlanta and leased some kilns on Glenwood Avenue. His brothers joined our company, which became known as Howard Lumber and Kilns. By 1960, we had built a plant in Mableton, Georgia, and Atlanta Hardwood became the sales arm for Howard Lumber. In 1966, our second plant opened in Huntersville, North Carolina to service the furniture industry in the Carolinas. In 1978, our first distribution center opened in an old service station in Smyrna, Georgia.

Today our company consists of 12 operating facilities. Our hardwood lumber is shipped throughout the world. With six distribution centers in Georgia, Alabama and Tennessee, we strive to provide the highest quality forest products. For more information we hope you will visit our Web site at hardwoodweb.com and trust that the intrinsic beauty of wood will inspire you, as it does us.

Jim Howard
President

The National Hardwood Lumber Association
Chicago, IL, October, 1960

ENVIRONMENTAL COMMITMENT

In choosing us, you get more than top quality hardwood products. You share in our commitment to a renewable wood resource and responsible forest stewardship. We are a multi-generational company with a long-term vested interest in sustainable forestry. With greater forest management and long-term stewardship, we know better wood can come from our forest resource. Decisions we make today will impact the overall health and quality of future timberlands.

While wood is inherently green, we also recognize that third-party certification is important in maintaining public confidence. Five of the six locations in our distribution group, Hardwoods Incorporated, have multi-site Forest Stewardship Council (FSC) chain-of-custody certification. Our first distribution location was certified in 2005. This certification allows all of our distribution centers, with the exception of Memphis, to handle FSC-certified products through the supply chain. Our scope covers the purchase, sale and distribution of lumber, plywood, veneer, panel products and mouldings. Additionally, Hardwoods Incorporated stocks a selection of materials that qualify toward the U.S. Green Building Council's LEED® green building program. We also offer special-order products that can be manufactured specifically to meet LEED requirements.

Through the years, we have been a leader in the Southeast in promoting products for green building standards. We source forest products, including lumber, mouldings, veneer and plywood, from mills that ascribe to a variety of certification programs, including Forest Stewardship Council (FSC), Sustainable Forest Initiative (SFI), American Tree Farmer, and Programme for the Endorsement of Forest Certification (PEFC). As additional credible certification programs are developed, we will continue to evaluate and expand our offering of certified forest products. Regarding imported hardwoods and veneers, we actively support and abide by the principles of the Convention in International Trade with Endangered Species (CITES) and the Lacey Act recently passed by the U.S. Congress which protects against illegal logging.

All of our facilities have made a commitment to be environmentally conscious. Internally we have a green task force focused on recycling. When available, we purchase bio-diesel for our truck fleet and forklifts. All of our internal wood wastes generated by our moulding plant, planer mills, trim saws and wood dunnage materials are utilized as fuel to make steam for our dry kilns. Our warehouses have incorporated skylights and all of our plants have low maintenance native landscaping. We recycle our office paper, steel banding and the waste oil in our maintenance shops. Our management encourages employee participation in and support of responsible environmental organizations and sustainable forest management. Additionally, we support numerous organizations which promote conservation and environmental stewardship, including The Trust for Public Land, Trees Atlanta, Hardwood Forest Foundation and Project Learning Tree.

We stand in awe of the wonders of Mother Nature and take seriously the vital role of sustainable forestry. Our future is linked to a healthy forest resource. So remember, when you think of wood, think of us.

ABOUT THE FOREST STEWARDSHIP COUNCIL (FSC)

FSC®
www.fsc.org

The mark of
responsible forestry

FSC® C068144

The Forest Stewardship Council (FSC) is an independent non-profit association that brings people together to find solutions which promote responsible stewardship of the world's forests. The FSC has been recognized as an international organization and its main goals are to promote environmentally appropriate, socially beneficial, and economically viable forest management.

There are two types of FSC certificates available; Forest Management (FM) Certificate and Chain of Custody (COC) Certificate. FM operations can claim the forest products they produce come from a responsibly managed forest. COC certification provides a guarantee that FSC-certified products move from the forest to the consumer, including all successive stages of processing, transformation, manufacturing and distribution.

Hardwoods Incorporated has obtained multi-site chain of custody certification. This certification allows our five certified distribution centers to handle FSC products through the supply chain (our sixth center, located in Collierville, TN, is not a certified location). Our scope covers the purchase, sale, and distribution of lumber, plywood, veneer and panel products. For more information on FSC, visit www.fscus.org.

ABOUT LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED)

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™, developed by the U.S. Green Building Council (USGBC), provides a list of standards for environmentally sustainable construction. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. To earn LEED certification, a building project must meet certain prerequisites and performance benchmarks ("credits") within each category.

Wood products can contribute four points (of a total of 69) which makes it an important product group whenever LEED certification is required. Hardwoods Incorporated offers several LEED compliant products. Call us for your next LEED project. We are your source for LEED & FSC certified products and know-how.

LEED-NC 2.2

EQ 4.4 Low-Emitting Materials 1 Point	**MR 4.1, 4.2** Recycled Content 2 Points	**MR 5.1, 5.2** Regional Materials 2 Points	**MR 6.0** Rapidly Renewable 1 Point	**MR 7.0** FSC-Certified 1 Point
MDF: • Arreis™ • Medex® • Medite® II • Medite® FR **Particle Board:** • Encore® • NU Green® **Plywood:** • PureBond® • GreenT™ **Extira® Panels** **Laminate:** • Arborite® **Melamine:** • Uniboard™	**MDF:** • Arreis™ • Medex® • Medite® II • Medite® FR **Particle Board:** • Encore® • NU Green® **Laminate:** • Arborite® **Melamine:** • Uniboard™	**MDF:** • Arreis™ • Medex® • Medite® II • Medite® FR **Particle Board:** • Encore® • NU Green® **Plywood:** • PureBond® • GreenT™ **Extira® Panels** **Lumber:** • Various Species **Veneer:** • Various Species	**Veneer:** • Bamboo **Laminate:** • Arborite®	**Available as FSC-Certified products:** • MDF • Particle Board • Plywood • Lumber • Bending Panels • Natural Veneers • Reconstituted Veneers • Flooring • Mouldings • Melamine

For more information on LEED, visit www.usgbc.org.

TABLE OF CONTENTS

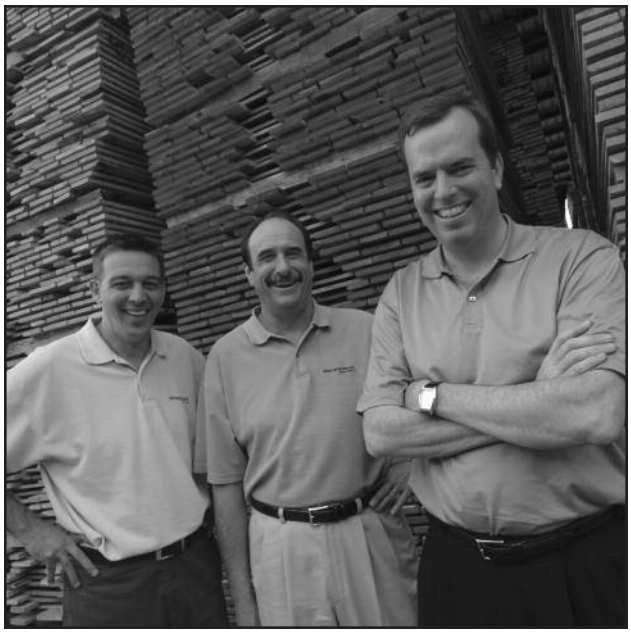
- ◆ **Lumber** 7
- ◆ **Plywood** 13
- ◆ **Architectural Panels & Veneers** 21
- ◆ **Industrial Panels** 41
- ◆ **Bending Panels** 47
- ◆ **Mouldings** 49
- ◆ **Melamine** 73

Miscellaneous Products 95

References 103

◆ **Products are available in these product categories that qualify for points in the LEED certification system.**

LUMBER



Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

LUMBER

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

An Extensive Inventory of Premium Hardwood Lumber

With more than 2 million board-feet of kiln capacity and more than 55 years of experience, we're ready to meet your wholesale lumber needs. More than 30 sawmills supply in excess of 50 domestic species of premium hardwood lumber to our concentration yards, which have grown to be among the largest in the eastern United States. We are committed to providing the best possible hardwood lumber and remanufacturing capabilities available, including:

- Remanufacturing: S2S, S4S and straight-line ripping, gang-ripping and moulding capabilities
- Computerized kiln controls with variable speed fans
- Covered air-drying sheds
- NHLA-trained lumber inspectors at each drying yard

Hardwoods Incorporated is also a distributor of premium African, Central and South American hardwood lumber, which is imported directly through our lumber division. Our customers have access to combined inventories of Appalachian and imported lumber, including more than 75 of the world's finest hardwood species, through a single source. This broadened inventory of hardwoods provides purchasing and shipping economies for our customers.

A limited selection of domestic and imported species are available as FSC-certified. Please contact a sales representative at the distribution center in your area for more information about FSC-certified products.

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

FSC®
www.fsc.org

The mark of responsible forestry

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TECHNICAL REFERENCE
NHLA "STANDARD" HARDWOOD GRADES

Grade Names	Face Graded	Minimum Board Size	Minimum Percentage of Yield	Minimum Size of Cuttings
FAS/1F	Best	6" & wider 8' & longer	83.3% CFC*	4" x 5' or 3" x 7'
Selects	Best	4" & wider 6' & longer	83.3% CFC*	4" x 5' or 3" x 7'
#1 Common	Worst	3" & wider 4' & longer	66.6% CFC*	4" x 2' or 3" x 3'
#2A Common	Worst	3" & wider 4' & longer	50% CFC*	3" x 2'

NOTE: Board size is calculated before surfacing and straight-line ripping
* CFC: clear face cuttings

NHLA MEMBER

The National Hardwood Lumber Association first established the North American Hardwood grading rules in 1897. Our company has been a member of NHLA for more than 55 years and our president served as past president of the NHLA board of managers.

The NHLA grades listed above are the "standard" hardwood lumber grades by which the majority of domestic lumber is sold. Hardwood grades can differ from one species to another. See the NHLA rule book for specific species and grade information at http://www.natlhardwood.org/pdf/Rulebook.pdf.

Many sawmills use proprietary grades when selling their lumber. (The individual mills make additions or subtractions to NHLA rules, i.e. 10" and wider; or selected 80% white). Although all of our distribution centers use NHLA rules, please specify your requirements for each order.

Imported hardwoods are usually sold under different grading rules. Most imported hardwoods species are sold 6' and longer and 4" and wider. We stock only the highest grades available commercially.

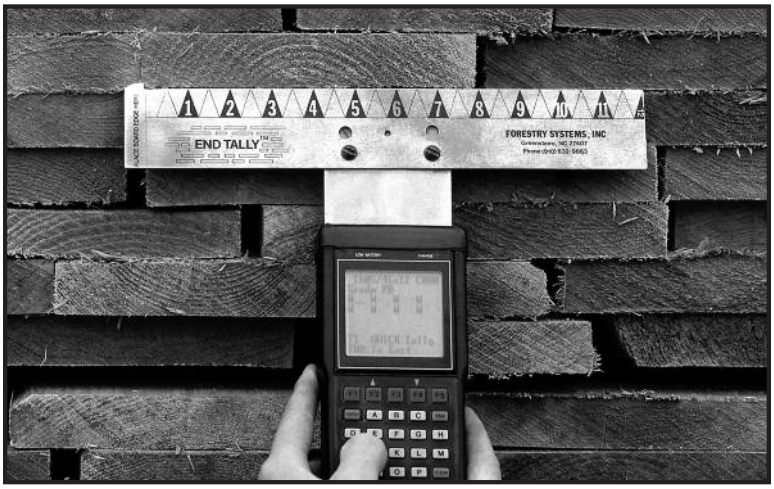
GROSS OR NET TALLY?

How to calculate board footage:

$$\frac{\textbf{thickness (inches) x width (inches) x length (feet)}}{\textbf{12}}$$

When lumber dries, the size (board footage) of boards measured actually shrinks. All hardwood lumber shrinks when it dries. Measured green before drying, 1,000 bd-ft of lumber might actually measure 920 bd-ft after kiln drying. A lumber tally based on the green measurement is called a gross tally. Lumber measured after drying is called net tally.

We will gladly quote lumber net or gross tally. In certain regions, i.e. the West Coast or in export markets, all lumber is sold net tally. In the Southeast and Appalachian areas, wholesale lumber is quoted more typically as gross tally.



Always inquire how the lumber is being measured. Rarely do distributors quote net tally after straight-line ripping. Most mills will estimate 20% footage loss in straight-line ripping, plus seven percent for kiln shrinkage.

In the end, your footage can be different, based on net or gross tally and additional loss during millwork services. Whether gross or net tally is used, the tally and invoice are calculated using different methodologies. We provide tallies on all shipments of more than 250 bd-ft.

MILLWORK SERVICES

Our distribution centers and affiliated yards offer a full range of millwork services. Our White County Mouldings plant in Cleveland, GA, is certified as a manufacturer of FSC-certified hardwood mouldings. We operate a state-of-the-art dimension plant capable of producing custom profiles, S4S, and finger-jointed mouldings. Talk with your Hardwoods Incorporated sales representative about ordering FSC-certified moulding profiles through our distribution centers. Our millwork services include:

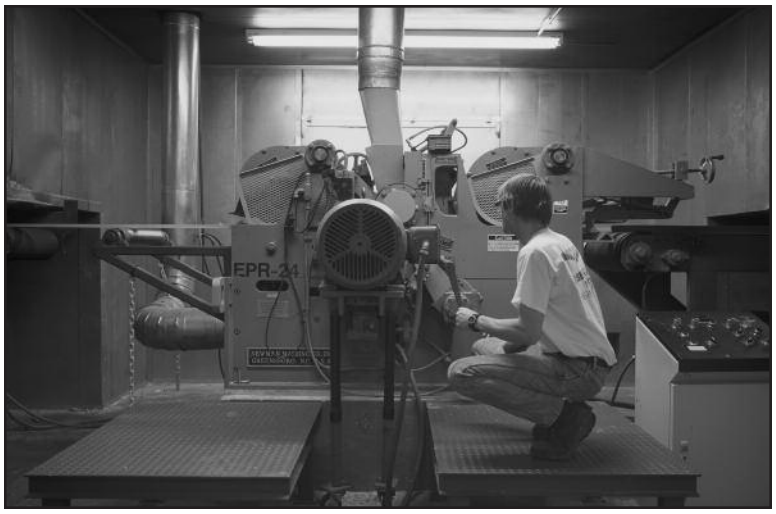
Planing: We operate six Newman hydraulic planers; four with straight knives for cabinet finishing. We can provide hit-or-miss or surface to your specified thickness.

Standard Surface Thickness			
4/4	13/16"	8/4	1-13/16"
5/4	1-1/16"	10/4	2-1/4"
6/4	1-5/16"	12/4	2-3/4"

Straight-line Ripping: Most 4/4 domestic species are stocked S2S and straight-line ripped, one edge. Our straight-line saws are equipped with laser lights to provide a "glue line" edge with minimal waste.

Gang-ripped Blanks: Customers with moulding capabilities can benefit from purchasing ripped-to-width blanks. All of our distribution yards have gang-rip capabilities.

Custom Flooring & Paneling: When you select the species and grade, we can create them as flooring or paneling, with tongue and groove or v-joint patterns.



Custom Moulding Profiles: With more than a thousand knives, we can mill any standard or custom moulding profile desired. Please see the moulding section, page 49, for more details about our capabilities.

DOMESTIC HARDWOOD AND SOFTWOOD LUMBER

Our distribution centers stock only the highest NHLA grades available in most species. (See Species Guide, page 103.) Lower grades are readily available from our concentration drying yards. A limited number of domestic wood species are also available as FSC-certified lumber. Please check with your sales representative for lead times.

Species	Grade	4/4	5/4	6/4	8/4	10/4	12/4	16/4
Alder	Superior	•						
	Cabinet	•						
Ash	FAS/1F	•	•		•		•	
Basswood	FAS/1F	•			•			•
	#1 Common	•			•			
Birch	FAS/1F	•			•			
	#1 Common	•						
Cedar, Aromatic Red	#1 Common	•						
Cherry	FAS/1F	•	•		•	•	•	
	#1 Common	•						
Cherry, Curly	FAS/1F	•			•			
Heart Pine	Select	•						
Hickory	FAS/1F	•						
	#1 Common	•						
Maple, Hard	SEL & BTR	•	•		•			
Maple, Bird's-eye	SEL & BTR	•						
Maple, Soft	FAS/1F	•	•		•			
	#1 Common	•						
Maple, Curly	SEL & BTR	•			•			
Maple, Quilted	SEL & BTR	•			•			
Oak, Red	FAS/1F	•	•		•			
	#1 Common	•	•					
Oak, Red Quarter Sawn	FAS/1F	•						
Oak, Red 10+ Wider	FAS/1F	•						
Oak, Red 12+ Wider	FAS/1F	•						
Oak, White	FAS/1F	•	•		•			
Oak, White Quarter Sawn	FAS/1F	•						
Poplar	FAS/1F	•	•		•	•	•	•
	#1 Common	•			•			
	10+ Wide	•						
Red Gum	FAB	•						
Walnut	FAS/1F	•	•		•			
White Pine, Eastern	Furniture Grade	•	•		•			
Wormy Chestnut	#2 or Better	•						

IMPORTED HARDWOOD LUMBER (SEE SPECIES GUIDE, PAGE 103)

We offer one of the widest selections of imported and exotic hardwood lumber in the Southeast. Typically, imported hardwood grades are comparable to select and better hardwood grades in the NHLA rule book. We offer only the top commercial grades available in all of our imported lumber. A limited number of imported wood species are also available as FSC-certified lumber. For information on current inventory and availability, please contact the distribution center in your area.

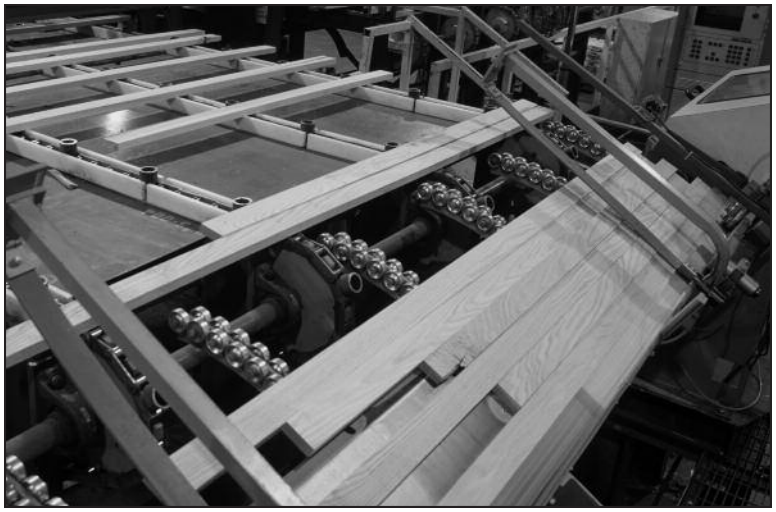
Species	4/4	5/4	6/4	8/4	10/4	12/4	16/4
Afrormosia	•	•	•	•			
Anigre	•	•	•	•			
Beech, European Steamed	•	•	•	•			
Bloodwood	•			•			
Bocote	•						
Bubinga	•	•	•	•		•	
Bubinga Pomele	•			•			
Canary Wood	•			•		•	
Cedar, Spanish	•	•	•	•		•	
Cocobolo	•			•			
Ebony, Black African	•			•			
Ebony, Brazilian	•						
European Brown Oak	•			•			
Goncalo Alves	•			•			
Granadillo	•						
Ipe	•	•					
Iroko	•			•			
Jatoba (Brazilian Cherry)	•	•	•	•			
Lacewood (Leopardwood)	•			•			
Limba, Black	•			•			
Limba, White	•						
Mahogany, African	•	•	•	•		•	•
Mahogany, Santos	•	•					
Makore	•	•	•	•			
Obeche	•						
Padauk (African)	•	•	•	•			
Purple Heart	•			•			
Red Grandis (Eucalyptus)	•	•	•	•			
Rosewood, Honduras	•						

Species	4/4	5/4	6/4	8/4	10/4	12/4	16/4
Sapele	•	•	•	•		•	•
Shedua	•			•			
Sipo	•	•	•	•	•	•	
Sycamore, European	•			•			
Teak, Genuine	•	•	•	•			
Tulipwood	•						
Walnut, Peruvian	•			•			
Wenge	•	•	•	•			
Yellowheart	•			•			
Zebrawood	•	•	•	•		•	

DIMENSION LUMBER (SEE SPECIES GUIDE, PAGE 103)

Dimension lumber is moulded four sides. Custom moulding and dimension lumber orders are available by request. Please contact the distribution center in your area for more detailed information or assistance with an order.

Species	1 x 2	1 x 4	1 x 6	1 x 8	1 x 10	1 x 12	2 x 6	2 x 8
Basswood Faceplate	•							
Cypress			•	•	•			•
Soft Maple			•	•				
Soft Maple Faceplate	•							
Pine Shelving (White #3)						•		
Poplar	•	•	•	•	•	•	•	•
Red Oak	•	•	•	•	•	•	•	•
Red Oak Faceplate	•							
Ipe-Decking		•	•	•				



State-of-the-art equipment, technology and an experienced team mean that we can process custom surfacing requests quickly. Let us quote your next order of custom-surfaced lumber.

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

PLYWOOD

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

Photo courtesy of Columbia Forest Products

Plywood to Meet Your Construction and Manufacturing Needs

Our distribution centers stock a wide selection of exotic and domestic plywood with a variety of cores. Our inventory is ideally suited to meet the needs of cabinet, furniture and fixture manufacturers. The following products are in stock and ready-to-ship:

- A through D & shop grade plywood
- Architectural grade sequenced matched & numbered plywood
- Prefinished plywood
- Softwood plywood
- Sustainable plywood

Many of these products can be manufactured with cores that qualify toward the U.S. Green Building Council's LEED™ green building program. For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative. FSC-certified and CARB-certified hardwood plywood products are also available upon request.

For custom lay-up panels and veneer sheets, please turn to the Architectural Panels and Veneers section on page 21, or call your sales representative for assistance.

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FSC® C068144

columbia FOREST PRODUCTS

PureBond™ A breath of fresh thinking from Columbia Forest Products.

www.columbiaforestproducts.com

Timber Products Company THE TREMENDOUS RESOURCE®

www.timberproducts.com

PLYWOOD

Our distribution centers feature hardwood plywood from leading plywood manufacturers. A full range of grades of hardwood plywood is available, including hardwood plywood produced with FSC-certified wood that is laminated with a formaldehyde-free glue that can qualify toward points in the U.S. Green Building Council's LEED™ green building program (see chart on page three). Please talk with your sales representative for assistance with LEED compliant materials.

TECHNICAL REFERENCE

This technical reference is provided as a quick guide to plywood grades, plywood faces, and plywood cores found on our in-stock plywood. For a more comprehensive guide, please turn to page 22, or read our publication "Veneer and Architectural Panels Technical Reference Guide." Please call your local sales or spec rep to request a free copy!

PLYWOOD GRADES

The following information provides a quick overview of the HPVA face and back grade definitions.

Front Face Grade	Description
AA	Architectural grade. The best quality face grade for high-end uses, such as architectural paneling, doors and cabinets, case goods and premium furniture. Generally available by special order.
A	Where AA is not required, but excellent appearance is very important, as in cabinets and furniture. Select grade veneer for quality and color. A select veneer is composed of entirely heartwood or sapwood and is matched for both grain pattern and color. If spliced, leaves must be spliced and book-matched for a pleasing effect of color and grain. Minor infrequent burls, pin knots and inconspicuous small patches are allowed. Frequency of defects depends on species.
B	Where the natural characteristics and appearance of the species are desirable. B grade is composed entirely of heartwood or sapwood, but is matched for color only. Similar to A grade, but allows more numerous and larger burls, pin knots and color streaks.
C	Allows more numerous and larger burls, pin knots, color variations and rough-cut veneers. C grade is sound and smooth.
D	Sound grade free of open defects, but allows unlimited and more repaired defects than the C grades.
E	Sound grade with all repaired defects allowed.
SHOP	Shop grade contains minor imperfections and is guaranteed to be a minimum of 85% useable. Usually, the panel is a high-grade product, but due to some defect, did not make the standards for the high grade. It may have a broken corner, a small area of void, or a sanding error.

NOTE: Face grade allowable defects vary by species

Back Face Grade	Description
1	Allows color variation, no large sound knots, tight knots cannot exceed 3/8" in diameter. Core laps are not permitted. Worm holes and splits are required to be filled.
2	Color is not a consideration. Sound knots cannot exceed 3/4" in diameter. Repaired core laps and repaired knots permitted.
3	Knot holes of 1" in diameter are permitted.
4	Reject back grade not sound. Allows many open defects.

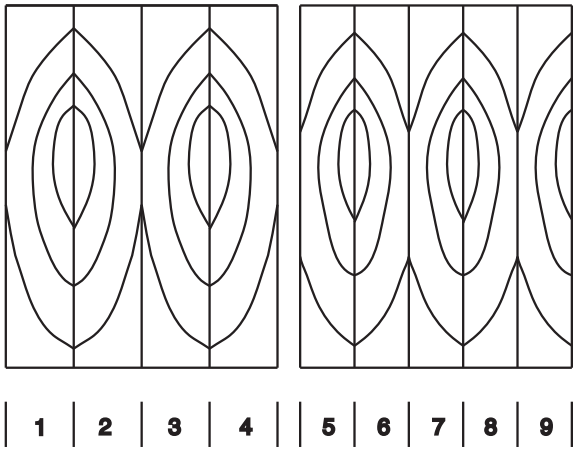
PLYWOOD FACES

The following is a description of the different faces found on most stocked plywood. Please check our plywood inventory (pages 17 to 20), or call your sales representative for further assistance.

Book- and Balance-Matched Face (BB)

Our architectural grade sequenced-matched and numbered panels have a plain-sliced or quarter-sliced book and balance matched face. Each panel face is assembled from veneer leaves of uniform width. (When edge-trimmed, the end leaves may be slightly smaller.) Panels may contain an even or odd number of leaves and distribution may change from panel to panel within a sequenced set.

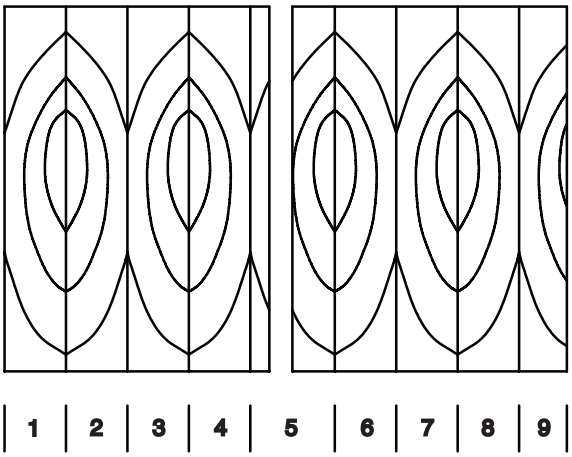
The plain-sliced species typically come in sets of 20 or more panels, while the quarter-sliced sets 20 or less.



Running Book-Matched Face (RB)

The majority of our stock plywood panels have a plain-sliced, running book-matched face. Plain-sliced veneer leaves are book matched, and then assembled from as many leaves as necessary to make a face. Any portion left over from the last leaf may be used as the start of the next panel.

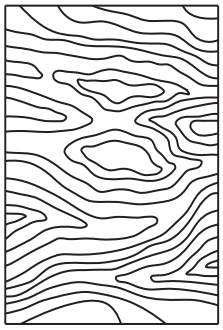
Running-matched panels can be sequenced and numbered, but are seldom used for adjacent wall panels.



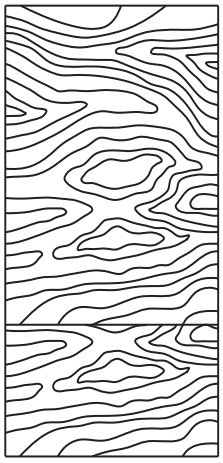
Whole-Piece Face (WPF) and Spliced Face (SF)

A single sheet of rotary-cut veneer that reveals a continuous grain pattern throughout the sheet. The majority of rotary-cut 4'x 8' panels are whole-piece face, whereas larger panels are typically split face.

Rotary-cut plywood appears bold and random. Matching at veneer joints is extremely difficult. Except to create a specific design effect, rotary-cut plywood panels are rarely used in fine architectural woodwork. Whole-piece faces are available only in rotary cut.



Whole-Piece Face



Spliced Face

PLYWOOD CORES (SUBSTRATES)

Medium-Density Fiberboard (MDF) Core

To form fiberboard, wood particles are reduced to fibers in a moderate-pressure steam vessel, combined with a resin, and bonded together under heat and pressure. Medium-density fiberboard (MDF) is one of the most rapidly growing composite board products. The surface is flat, smooth, uniform, dense, and free of knots or grain patterns. It makes a superb carrier for veneers and can be enhanced to a fire-retardant, moisture-resistant or bendable core. (See below.)

Particleboard Core (PB)

Particleboard is produced from wood particles of various sizes that are bonded together with a synthetic resin or binder under heat and pressure. This product is commercially classified by "density," which is measured by the weight per cubic foot of the panel product. Medium-density industrial particleboard is used in the broadest applications of architectural woodwork. It is especially well suited as a core (substrate) for high-quality veneers and decorative laminates. It can be enhanced to a fire-retardant, moisture-resistant or bendable core. (See below.)

Veneer Core (VC)

To form veneer core, three or more layers (plies) of wood veneers are pressed and glued into a single sheet. Layers of veneer are pressed together in alternating perpendicular layers balanced on either side of a central core layer. This type of plywood is more prone to surface irregularities and defects, but exhibits greater strength in bending and in stress than other core types. High-quality, calibrated veneer core – with as many as 13 plies – is recommended for architectural veneer panels. This virtually eliminates surface irregularities and defects.

Veneer Core Grade	Description
J	Knot holes and other similar shaped openings are not allowed. Maximum width of splits or gaps is 1/8". Available, for the most part, by custom order.
K	Knot holes and other similar shaped openings cannot exceed 3/4" in diameter. Maximum width of splits or gaps is 1/4".
L	Holes cannot exceed 1" in diameter and splits and gaps cannot exceed 1/2" in diameter.
M	Holes cannot exceed 2 1/2" in diameter and splits and gaps cannot exceed 1".

Combination Core

Particleboard or fiberboard is combined in a balanced blend with veneer layers to form combination core.

Fire-Retardant Core

Particleboard and MDF cores can be treated during manufacturing to carry a UL stamp for Class I fire rating (flame spread 20; smoke developed 25).

Moisture-Resistant Core

Particleboard and MDF cores both are available with special resins that resist swelling when exposed to moisture.

Bendable Core

Kerfed particleboard and MDF cores are available for radius projects. Depending on the veneer (and veneer backer), a radius of 16 inches should be obtainable when applying a veneer prior to bending. Certain cores are capable of bending to five inches or less before applying the veneer face. See the section on bending panels, pages 47 and 48, for more information.

HARDWOOD PLYWOOD INVENTORY

Architectural Grade Hardwood Plywood Inventory

Species	Size	Grade	Core	Cut	Match
Anigre, Figured	3/4 x 49 x 97	AA-1	MDF	QTR	SM & N
	3/4 x 49 x 121	AA-1	MDF	QTR	SM & N
Cherry	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Mahogany, African	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Maple, White	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Walnut	3/4 49 x 97	A-1	MDF	PS	SM & N

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut SM & N = Sequence Matched and Numbered

Hardwood Plywood Inventory

Species	Size	Grade	Core	Cut	Match
Alder	1/4 x 48 x 96	A-1	MDF	PS	RB
	1/4 x 48 x 96	B-2	MDF	PS	RB
	1/4 x 48 x 96	B-4	VC	PS	RB
	3/4 x 49 x 97	A-1	VC	PS	PLANK
	3/4 x 49 x 97	B-2	VC	PS	RB
Ash, Natural	1/4 x 48 x 96	B-2	VC	RC	WPF
Ash, White	3/4 x 49 x 97	B-2	VC	PS	RB
	3/4 x 49 x 97	B-2	VC	RC	WPF
Birch, Natural	1/4 x 48 x 96	B-2	VC	RC	WPF
	1/4 x 48 x 96	B-2	MDF	RC	WPF
	1/4 x 48 x 96	B-4	VC	RC	WPF
	1/4 x 48 x 96	D-4	VC	RC	WPF
	1/4 x 48 x 96	SHOP	VC	PS RC	WPF SF RB
	1/2 x 48 x 96	B-2	VC	RC	WPF
	1/2 x 48 x 96	SHOP	VC	PS RC	WPF SF RB
	1/2 x 48 x 120	B-2	VC	RC	SF
	3/4 x 49 x 97	B-2	MDF	RC	WPF
	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	D-3	VC	RC	WPF SF RB
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB
	3/4 x 49 x 121	C-3	VC	RC	WPF SF RB

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut RB = Running Book Match WPF = Whole-piece face SF = Spliced face

Hardwood Plywood Inventory

Species	Size	Grade	Core	Cut	Match
Birch, Natural	1 x 48 x 96	B-2	VC	RC	WPF
	1-1/4 x 48 x 96	C-3	VC	RC	WPF
Birch, Natural (Prefinished 1 Side)	1/4 x 48 x 96	B-4	VC	RC	WPF
	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	C-3	VC	RC	WPF
Birch, Natural (Prefinished 2 Side)	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	C-3	VC	RC	WPF
Birch, Natural, Beaded	1/4 x 48 x 96	B-4	MDF	RC	WPF
Birch, White	1/4 x 48 x 96	B-2	MDF	RC	WPF
	1/4 x 48 x 96	B-4	VC	RC	WPF
	1/2 x 48 x 96	B-2	VC	RC	WPF
	5/8 x 48 x 96	B-2	MDF	RC	WPF
	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	B-2	MDF	RC	WPF
Birch, White, Beaded	1/4 x 48 x 96	B-4	VC	RC	WPF
Cedar, Aromatic	1/4 x 48 x 96	B-4	MDF	PS	PLANK
Cherry	1/4 x 48 x 96	A-2	VC	PS	RB
	1/4 x 48 x 96	A-4	VC	PS	RB
	1/4 x 48 x 96	A-4	MDF	PS	RB
	1/4 x 48 x 96	B-2	MDF	PS	RB
	1/2 x 48 x 96	A-1	MDF	PS	RB SM&N
	1/2 x 48 x 96	A-2	VC	PS	RB
	1/2 x 48 x 96	B-2	VC	PS	RB
	3/4 x 49 x 97	A-1	VC	PS	RB SM&N
	3/4 x 49 x 97	B-2	VC	PS	RB
	3/4 x 49 x 97	B-2	MDF	PS	RB
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB
Cherry, Beaded	1/4 x 48 x 96	B-2	MDF	RC	WPF
Hickory	1/4 x 48 x 96	A-4	VC	PS	RB
	1/4 x 48 x 96	B-2	MDF	PS	RB
	1/2 x 48 x 96	A-2	VC	PS	RB
	3/4 x 49 x 97	A-1	VC	PS	RB
	3/4 x 49 x 97	A-1	MDF	PS	RB
	3/4 x 49 x 97	B-2	VC	PS	RB
Hickory, Beaded	1/4 x 48 x 96	B-4	VC	RC	WPF

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut RB = Running Book Match WPF = Whole-piece face SF = Spliced face

Hardwood Plywood Inventory

Species	Size	Grade	Core	Cut	Match
Mahogany	1/4 x 48 x 96	A-4	VC	PS	RB
	1/4 x 48 x 96	B-4	VC	PS	RB
	1/2 x 48 x 96	A-1	MDF	PS	RB SM&N
	3/4 x 49 x 97	A-1	VC	PS	RB SM&N
	3/4 x 49 x 97	B-2	VC	PS	RB
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB
Maple, White	1/4 x 48 x 96	B-2	VC	RC	WPF
	1/4 x 48 x 96	B-2	MDF	RC	WPF
	1/4 x 48 x 96	B-4	VC	RC	WPF
	1/2 x 48 x 96	A-1	MDF	PS	RB SM&N
	1/2 x 48 x 96	B-2	VC	PS	RB
	1/2 x 48 x 96	B-2	MDF	PS	RB
	3/4 x 49 x 97	A-1	VC	PS	RB SM&N
	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	B-2	MDF	RC	WPF
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB
	3/4 x 49 x 121	A-4	VC	PS	RB SM&N
Maple, White (Prefinished 1 Side)	3/4 x 49 x 97	B-2	VC	RC	WPF
Maple, White (Prefinished 2 Sides)	3/4 x 49 x 97	B-2	VC	RC	WPF
Maple, White, Beaded	1/4 x 48 x 96	B-2	MDF	RC	WPF
Maple, Natural	1/4 x 48 x 96	B-4	VC	RC	WPF
	3/8 x 48 x 96	B-2	MDF	RC	WPF
	1/2 x 48 x 96	B-2	VC	RC	WPF
	3/4 x 49 x 97	B-2	VC	RC	WPF
	3/4 x 49 x 97	B-2	MDF	RC	WPF
	3/4 x 49 x 97	D-3	VC	RC	WPF SF RB
Maple, Natural (Prefinished 1 Side)	1/4 x 48 x 96	C-4	VC	RC	WPF
Maple, Natural (Prefinished 2 Sides)	3/4 x 48.5 x 96.5	C-2	VC	RC	WPF
	3/4 x 49 x 97	C-3	VC	RC	WPF
Maple, Natural, Beaded	1/4 x 48 x 96	B-2	VC	RC	WPF
	1/4 x 48 x 96	B-4	VC	RC	WPF
Pine, Knotty	1/4 x 48 x 96	B-4	VC	PS	PLANK
	1/2 x 48 x 96	B-2	VC	PS	RB
	3/4 x 49 x 97	B-B	VC	PS	RB
	3/4 x 49 x 97	B-2	MDF	PS	RB
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut RB = Running Book Match WPF = Whole-piece face SF = Spliced face

Hardwood Plywood Inventory

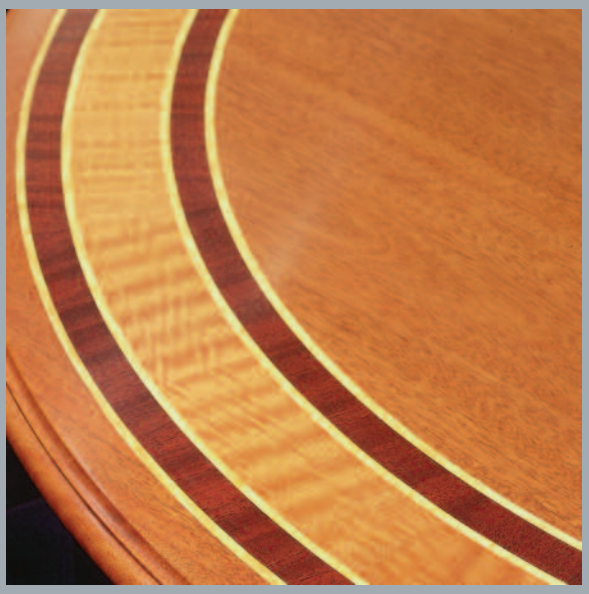
Species	Size	Grade	Core	Cut	Match
Oak, Red	1/4 x 48 x 96	A-1	VC	QTR	QTR
	1/4 x 48 x 96	B-2	VC	RC	WPF
	1/4 x 48 x 96	B-2	MDF	RC	WPF
	1/2 x 49 x 97	A-4	VC	RIFT	RIFT
	1/2 x 48 x 96	B-2	VC	RC	WPF
	1/2 x 48 x 96	B-2	MDF	RC	WPF
	3/4 x 49 x 97	A-1	VC	QTR	QTR
	3/4 x 49 x 97	A-2	VC	PS	RB
	3/4 x 48 x 96	A-2	MDF	PS	RB
	3/4 x 48 x 96	B-2	VC	RC	WPF
	3/4 x 48 x 96	B-2	MDF	RC	WPF
	3/4 x 49 x 97	SHOP	VC	PS RC	WPF SF RB
	3/4 x 49 x 121	A-2	VC	PS	RB
Oak, Red, Beaded	1/4 x 48 x 96	A-4	MDF	RC	WPF
Oak, White	1/4 x 48 x 96	A-2	VC	QTR	QTR
	1/4 x 48 x 96	A-4	VC	PS	RB
	1/4 x 48 x 96	B-2	VC	RC	WPF
	3/8 x 48 x 96	B-2	VC	RC	WPF
	3/4 x 49 x 97	A-1	VC	PS	RB
	3/4 x 49 x 97	A-1	VC	QTR	QTR
	3/4 x 49 x 97	B-2	VC	RC	WPF
Walnut	1/4 x 48 x 96	A-4	VC	PS	RB
	3/4 x 49 x 97	A-1	MDF	PS	RB
	3/4 x 49 x 97	A-1	VC	PS	RB, SM&N

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut RB = Running Book Match WPF = Whole-piece face SF = Spliced face

Softwood Plywood Inventory

Species	Size	Description
Fir	1/2 x 4' x 8'	AC Exterior
	1/2 x 4' x 8'	AB Marine Grade
	1/2 x 4' x 8'	MDO 2-sided
	3/4 x 4' x 8'	AC Exterior
	3/4 x 4' x 10'	AC Exterior
	3/4 x 4' x 8'	AB Marine Grade
	3/4 x 4' x 8'	MDO 2-sided

ARCHITECTURAL PANELS & VENEERS



Architectural Panels and Veneers

Our distribution centers offer architectural-grade veneer and panels for the most demanding applications. Whether your project requires one panel, a large sequenced-matched set, or a blueprint-matched set, our technical staff can assist you. It is our goal to do whatever we can to help you achieve great results with our veneer products. Our architectural grade product line-up includes:

- Ready-to-ship natural and reconstituted wood veneer sheets
- Ready-to-ship hardwood plywood on different cores and in different sizes
- Ready-to-ship architectural grade hardwood plywood
- Custom lay-up panels and veneer with short lead time
- Blueprint-matched veneers and panels with short lead time (custom lay-up)

SUSTAINABLE PANELS AND VENEER

We're happy to share our knowledge. Many of these products can be manufactured to meet standards that qualify toward the U.S. Green Building Council's LEED™ green building program. We are also able to provide CARB-certified hardwood plywood.

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

Our sales people and technical support staff are available to assist with your sustainable building requirements and other customized veneer needs. Call us for your next project or e-mail veneer@hardwoodweb.com.

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TECHNICAL REFERENCE – A GUIDE TO SPECIFYING WOOD VENEER

This technical reference is provided as a quick guide to veneer grades, veneer cuts, veneer matching, veneer cores and veneer backers. For a more comprehensive guide, we invite you to read our publication "Veneer and Architectural Panels Technical Reference Guide," which can be found on our Web site at www.hardwoodweb.com. We also offer a binder that includes more than 70 samples of the finest veneers available. Our veneer binder may be viewed in one of our distribution center showrooms, or may be made available to architectural firms and other organizations by request.

SOURCING AND SPECIFYING WOOD VENEER

Selecting a veneer can be based on countless design and functional issues. It is up to the design professional to weigh the species available against the intended use. Wood veneer is a natural material and a renewable resource. Veneer logs are available from more than 80 countries worldwide in both hardwood and softwood. Of the more than 70,000 different woods known to man, only about 200 species are available commercially as veneers.

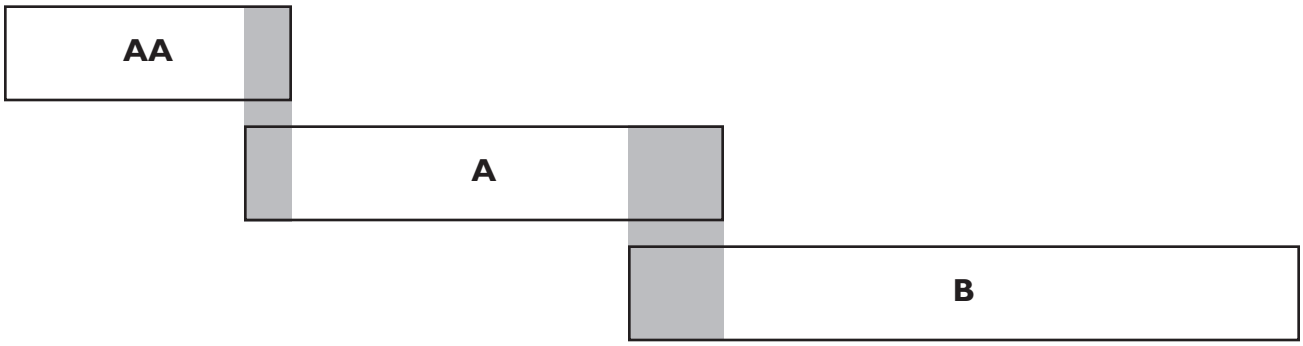
Sampling is a very important part of the selection and specification process. Samples allow you to explore differences in color and appearance of veneers. While type samples (typically 8" x 11") are an excellent starting point, live flitch samples should be requested for large, complex jobs. Flitch samples are pulled in a way that, when reviewed, they represent the overall appearance of the veneer. It is highly recommended that flitch samples be requested before making the final decision when specifying for large projects. Proper sampling ensures that what you see is what you get!

Specifying veneer and veneer panels requires knowledge about wood species, their veneer availabilities, and how to use those veneers correctly. In order to bring to life what was conceived in the beginning and guarantee customer satisfaction, the design professional must then be able to communicate ideas and intent correctly. Design intent is usually a combination of drawing and specifying. Together they provide the control criteria for quality and design.

VENEER GRADES

Panel Front Face

Grading to an aesthetic standard by humans cannot be accomplished without some level of subjectivity. For this reason, there is almost always some degree of "overlap" in appearance between the bottom end of one grade and the top end of the next grade down. Due to the wide variation in color, grain, and other natural characteristics, each grade has a range of appearance, from very desirable to barely acceptable, within that grade.



Voluntary grading standards have been adopted within the hardwood veneer industry. The industry grades for face veneers as established by the Hardwood Plywood and Veneer Association (HPVA), and, in general, are accepted industry-wide by organizations such as Architectural Woodwork Institute (AWI). The three top veneer face grades, as described by HPVA, are utilized in high quality architectural woodwork.

Front Face Grade	
AA	Architectural grade. The best quality face grade for high-end uses, such as architectural paneling, doors and cabinets, case goods and quality furniture. Generally available by special order.
A	Where AA is not required, but excellent appearance is very important, as in cabinets and furniture. Select grade veneer for quality and color. A select veneer is composed of entirely heartwood or sapwood and is matched for both grain pattern and color. If spliced, leaves must be spliced and book-matched for a pleasing effect of color and grain. Minor infrequent burls, pin knots and inconspicuous small patches are allowed. Frequency of defects depends on species.
B	Where the natural characteristics and appearance of the species are desirable. B grade is composed entirely of heartwood or sapwood, but is matched for color only. Similar to A grade, but allows more numerous and larger burls, pin knots and color streaks.

Please turn to page 14 for a description of all grades.

Panel Back Face

Back grades are designated by numbers: 1, 2, 3 and 4. Requirements of grade 1 are most restrictive, with grades 2, 3, and 4 being progressively less restrictive. For wall panel application, the back grade is not as critical. It is necessary only to balance the panel. For two-sided panels, i.e. doors, the veneer will be visible, and in this case, a 1 grade is recommended.

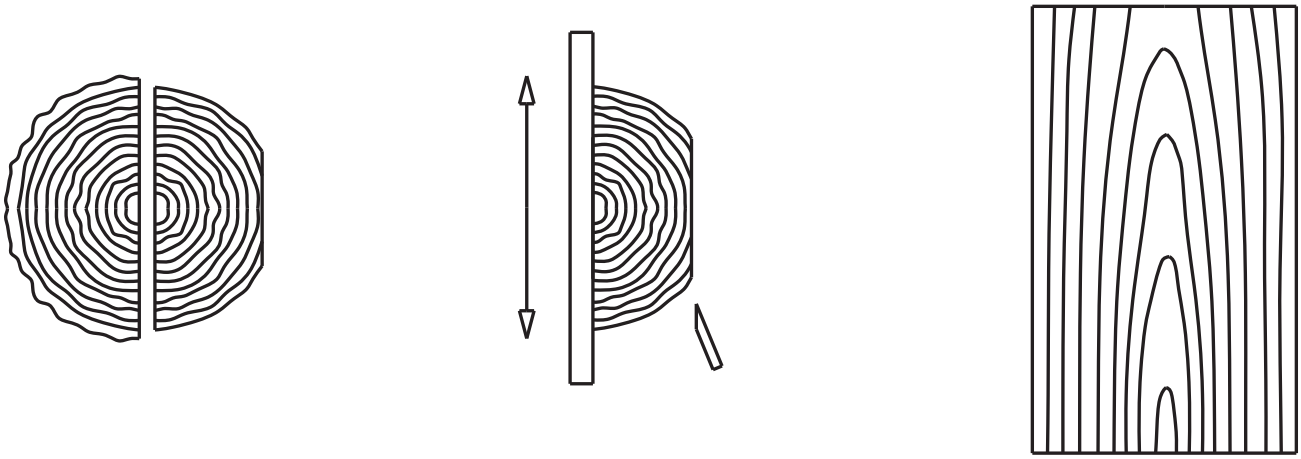
Back Face Grade	
1	Allows color variation, no large sound knots, tight knots cannot exceed 3/8" in diameter. Core laps are not permitted. Worm holes and splits are required to be filled.
2	Color is not a consideration. Sound knots cannot exceed 3/4" in diameter. Repaired core laps and repaired knots permitted.
3	Knot holes of 1" in diameter are permitted.
4	Reject back grade not sound. Allows many open defects.

VENEER SLICING (CUTS)

There are two main methods used to slice veneers; rotary cut and slicing. Rotary cutting produces wide sheets (normally a full face 50" wide) with a wild, variegated grain pattern. Slicing a log produces narrow leaves with a more pronounced, repeating grain pattern, which makes it more desirable for use in higher quality cabinets, store fixtures, wall panels, and furniture. In fact, most architectural jobs specify flat-cut or quarter-cut veneers. Certain cuts and figures are only available in select veneers.

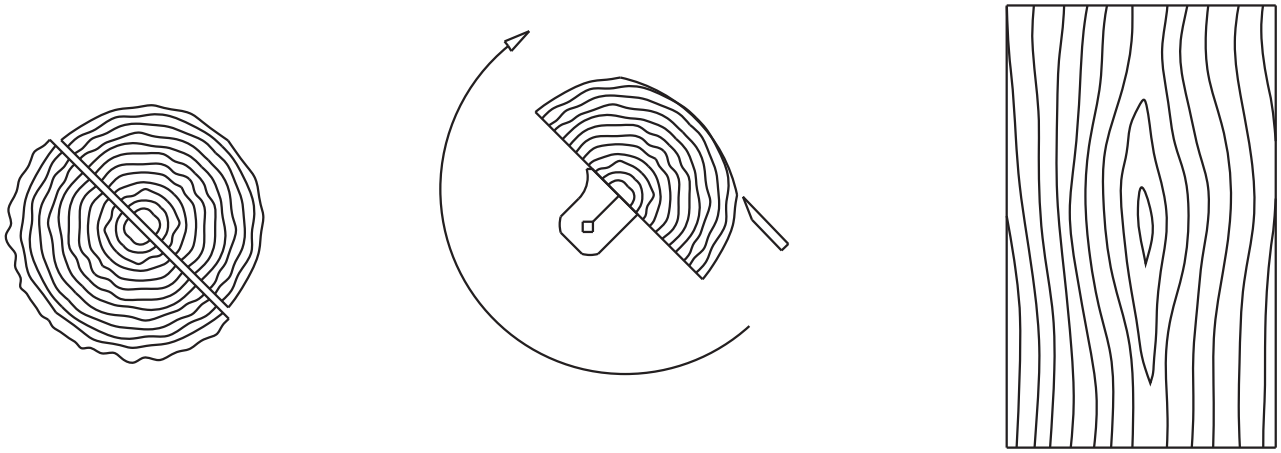
Plain Sliced (PS) / Flat Cut (FC)

This is the slicing method used most often to produce veneers for high-quality architectural woodworking. Slicing is done parallel to a line through the center of the log. Plain slicing typically produces cathedral patterns at the heart and straight patterns at the edges with a natural progression of pattern from leaf to leaf.



Half-Round Slicing

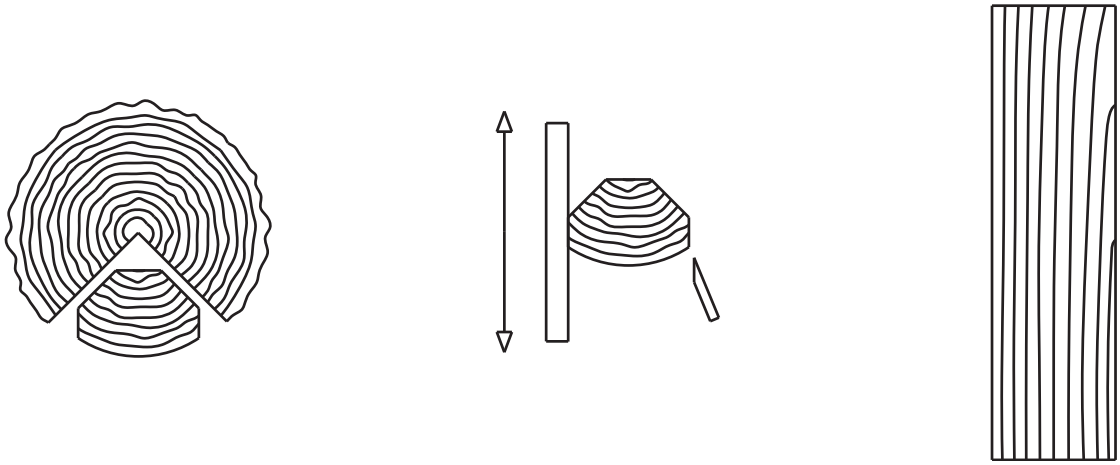
Half-round slicing is used primarily to accentuate the grain in various woods, such as in burls or bird's-eye maple, or to gain a wider width on a cathedral on a small dimension log.



Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Chalk Particle
Hardwoods incorporated

Quarter Cut (QTR)

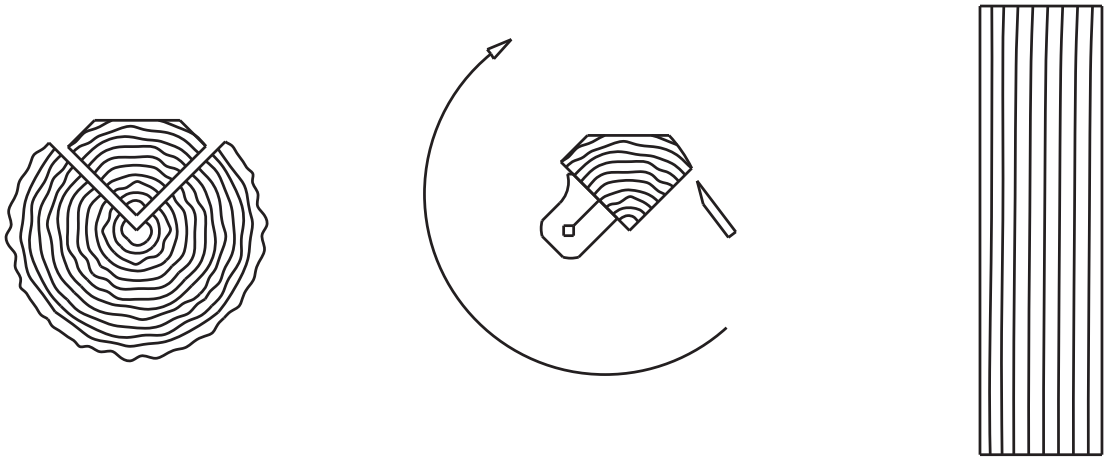
Quarter slicing simulates the quarter sawing process of solid lumber, roughly parallel to a radius line through the log segment. In many species, the individual leaves are narrow as a result. A series of stripes is produced, varying in density and thickness from species to species. Flake is a characteristic of this slicing method in red and white oak. Quarter-cut veneer can be easily sequenced and matched.



Rift Cut

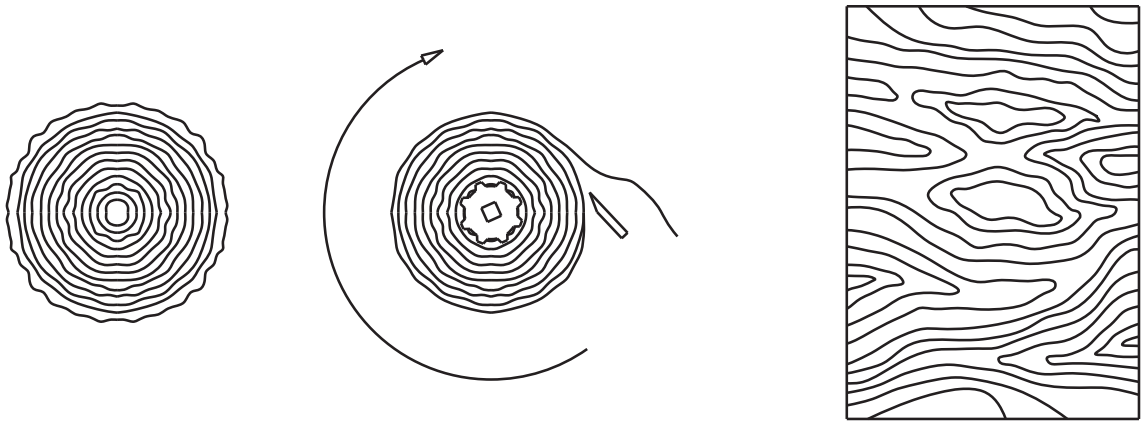
Rift veneers are produced most often in red and white oak, rarely in other species. Though rift-cut maple, walnut and cherry are often spoken of, these are actually the straighter grain portions of plain-sliced or quarter-sliced logs. Note that rift veneers and rift-sawn solid lumber are produced so differently that a "match" between rift veneers and rift-sawn solid lumber is highly unlikely. In both cases the cutting is done slightly off the radius lines minimizing the "fleck" (sometimes called flake) associated with quarter slicing. Rift slicing produces straight grain free from cathedrals and variations in grain. Rift-sliced veneer is easily sequenced and matched.

Comb Grain. Limited in availability, comb grain is a select product of the rift process distinguished by tight, straight grain along the entire length of the veneer. A slight angle is allowed in the grain. Comb grain is restricted to red and white oak veneers.



Rotary Cut (RC)

Rotary-cut veneers appear bold and random. Matching at veneer joints is extremely difficult. Most all softwood veneers are cut this way. Except to create a specific design effect, rotary-cut hardwood veneers are rarely used in fine architectural woodwork. Whole-piece faces are available only in rotary cut.



Reconstituted Wood Veneer Cuts

The different slicing methods mentioned in this section are not applicable when discussing **reconstituted wood** veneers. The wood to be used in **reconstituted wood** veneers is harvested from fast-growing African trees. The logs are peeled into rotary veneer, then clipped, dyed and glued together to form a laminated block. The way in which the reconstituted wood veneers are glued together and re-sliced determines the grain and figures. The result gives the appearance of these slicing methods, i.e. quarter-cut ash.

VENEER MATCHING

Veneer matching is a fine craft that, with skill, vision and experience, truly can be a form of art. It allows people to express what they imagine. The possibilities of patterns that can be created are virtually endless. There are three areas of matching in specifying panel products:

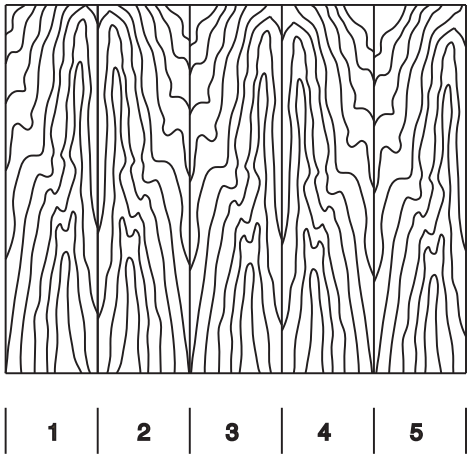
- Matching Between Veneer Leaves
- Matching Within a Face
- Matching Between Panels

Matching Between Veneer Leaves

Book Match (BM)

Every other leaf of veneer is turned over like the pages of a book. This creates a symmetrical pattern and a series of pairs. Book matching is the most commonly used match and may be used with plain-, quarter-, or rift-sliced veneers.

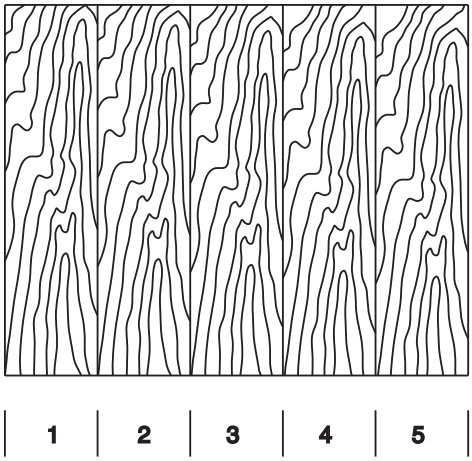
Barber Pole Effect – The alternating leaves in book-matched veneers may reflect the light and accept stain differently, and this may result in a noticeable color variation. Book matching also accentuates cell polarization, causing the perception of different colors. These natural characteristics are often called barber pole, and are not a manufacturing defect.



Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Chipboard Particle
Hardwoods incorporated

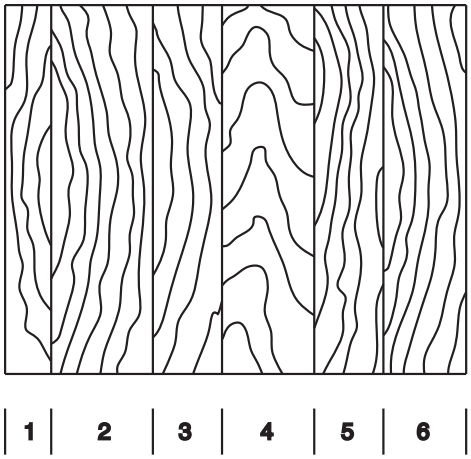
Slip Match (SM)

Adjoining leaves are placed (slipped out) in sequence without turning, resulting in all the same face sides being exposed. The joint may not be noticeable if grain is straight. Slip-matching is often used with quarter-sliced and rift-sliced veneers.



Random Match / Plank Match (PM)

Veneer leaves of different widths and cuts coming from different logs are placed next to each other in a random order and orientation. This produces a "board-by-board" effect in many species. Degrees of contrast and variations may change from panel to panel.

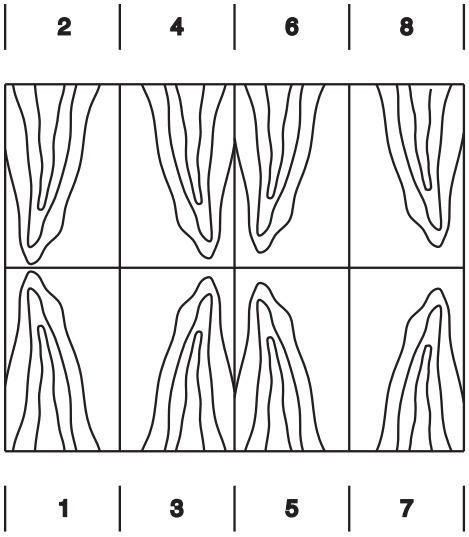


Pleasing Match

Veneer leaves are matched by color similarity, not necessarily grain characteristics.

End or Butt Match

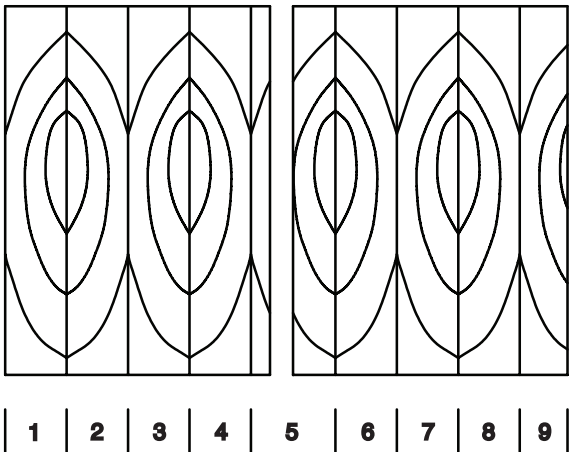
This matching style is often used to extend the apparent length of available veneers for wall panels and long conference tables. Leaves are individually book- or slip-matched, first end-to-end and then side-to-side, alternating end and side.



Matching Within a Face

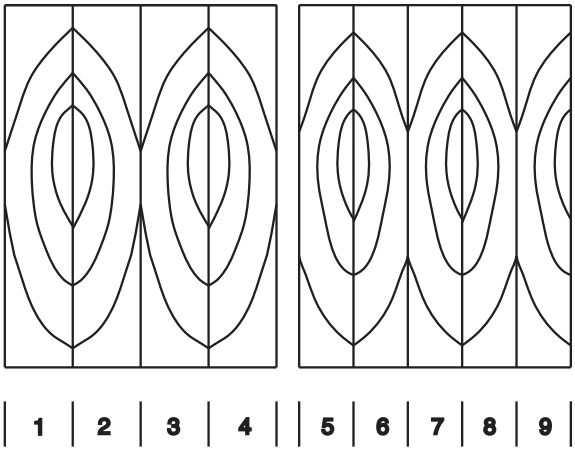
Running Match

Each panel face is assembled from as many leaves as necessary. Any portion left over from the last leaf may be used as the start of the next panel. Running matches are seldom "sequenced and numbered" for use as adjacent panels. Horizontal grain "match" or sequence cannot be expected.



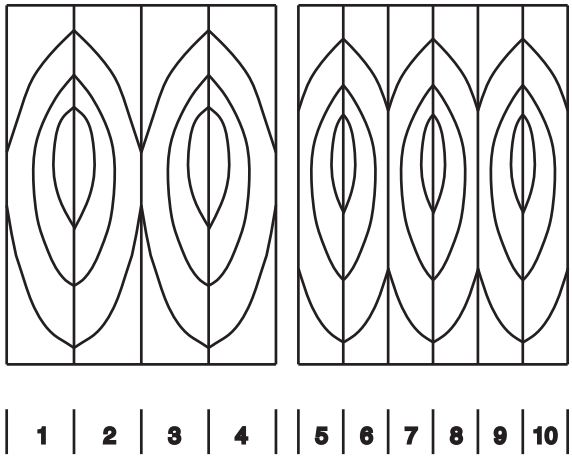
Balance Match

Each panel face is assembled from veneer leaves of uniform width. (When edge-trimmed, the end leaves may be slightly smaller.) Panels may contain an even or odd number of leaves and distribution may change from panel to panel within a sequenced set.



Center-Balance Match

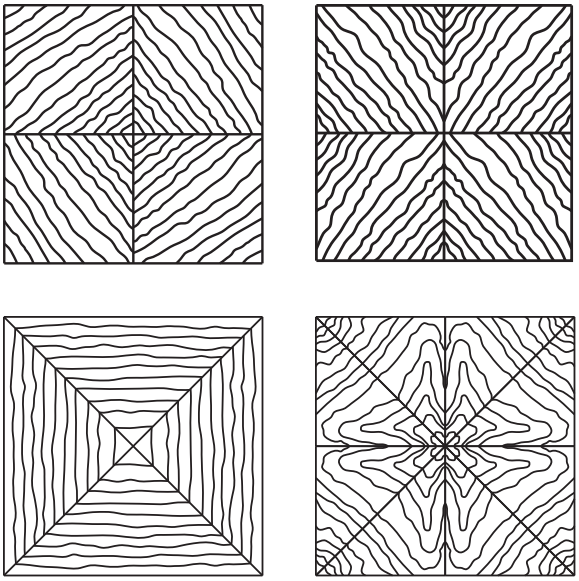
Each panel face is assembled from an even number of veneer leaves of uniform width. Thus, there is a veneer joint in the center of the panel, producing horizontal symmetry.



Panels Lumber Melamine Hardwood Plywood
Architectural Panels Colored Chalk Particle
Hardwoods incorporated

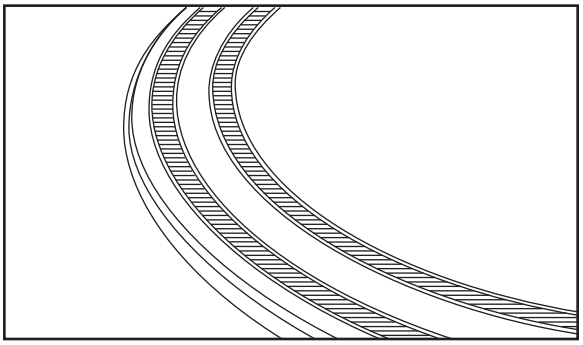
Special Matches

Special matches can include names such as box, diamond, basket weave, sunburst and reverse diamond, reverse box and checkerboard match. Because there are no standardized names for these matches, it is strongly recommended that the design professional include both names and drawings for the match to ensure the desired match is achieved.



Matching of Sketch Faces

In this procedure, the layout of veneer follows a particular sketch or design. These include inlays of various woods, borders, frames, imitations of stiles and rails, and curved inlay shapes. The design professional should work closely with the woodworker and veneer supplier to make sure design intentions are realized. Most all sketch faces are laser cut for accuracy.



Matching Between Panels

Veneer panels used in casework, or paneling in the same area, may be matched to each other. Correctly matching panels within a room or an area requires close coordination and understanding between the design professional and the woodworker or veneer supplier. It is necessary to sit down with a complete floor plan to determine how panels should be matched to each other. To meet your needs for architectural panels, we partner with a select number of custom architectural lay-up houses, all offering short lead times and the highest quality workmanship. Our distribution centers also offer custom-run hardwood mouldings to match the wood specie of most plywood panels. Please see the moulding section on page 49, or call your sales rep for further details.

Pre-Manufactured Sets, Full Width

These are one step above stock plywood panels, usually made and warehoused in 4' x 8' or 4' x 10' sheets in sequenced sets. They may be produced from a single flitch or a part of a flitch, usually varying in number from 6 to 12 panels. If more than one set is required, matching between the sets cannot be expected. Similarly, doors or components often cannot be fabricated from the same flitch materials, resulting in noticeable mismatch. This is often the most economical type of special panel products.

Pre-Manufactured Sets, Selectively Reduced in Width

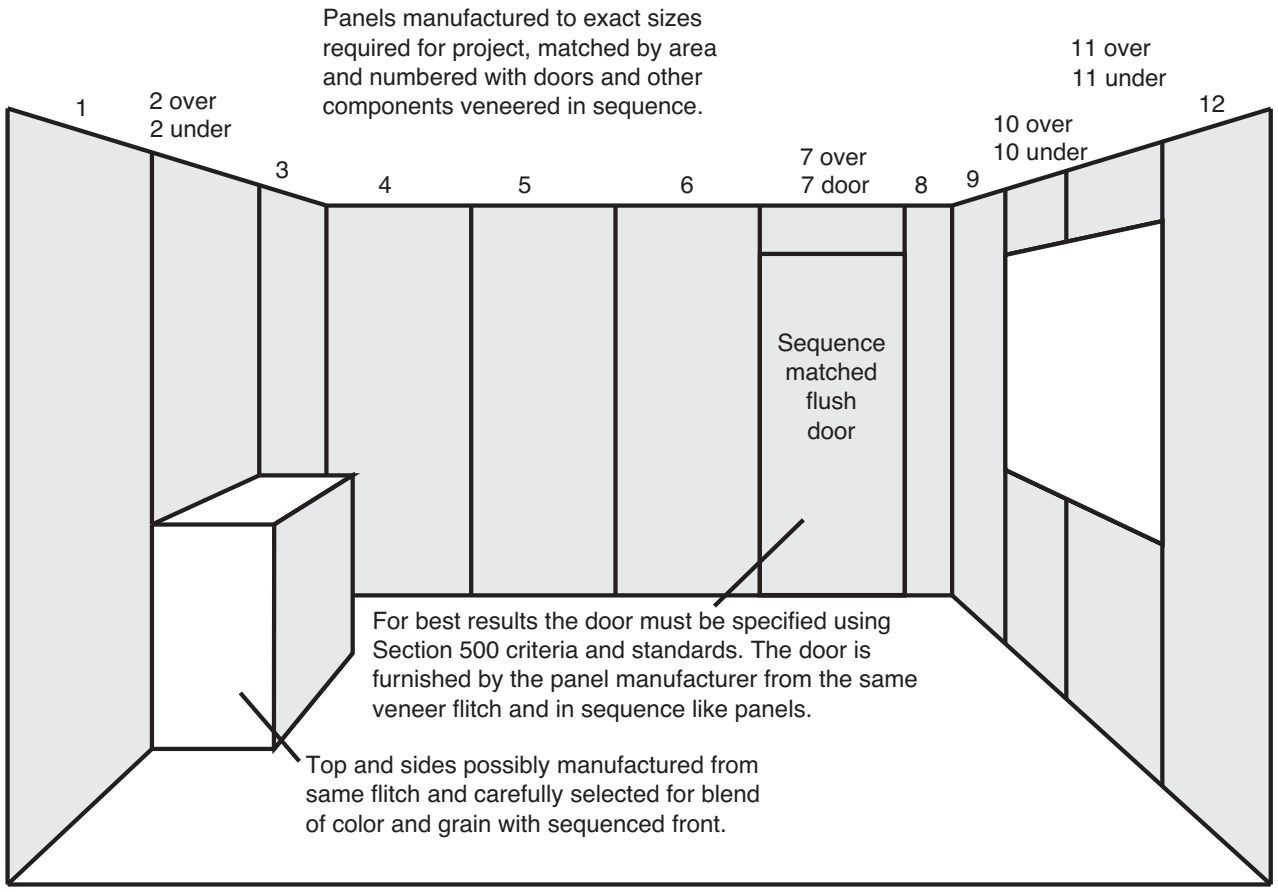
These are panels just like those in the previous section, usually made and warehoused in 4' x 8' or 4' x 10' sheets in sequenced sets. They are often selected for continuity, re-cut into modular widths, and numbered to achieve the appearance of greater symmetry. If more than one set is required, matching between the sets cannot be expected. Similarly, doors or components often cannot be fabricated from the same flitch materials, resulting in noticeable mismatch.

Sequenced-Matched Uniform Size Set

These sets are manufactured for a specific installation to a uniform panel width and height. If more than one flitch is required to produce the required number of panels, similar flitches will be used. This type of panel matching is best used when panel layout is uninterrupted, and when the design permits the use of equal-width panels. Some sequence will be lost if trimming is required to meet field conditions. Doors and components within the wall cannot usually be matched to the panels. Moderate in cost, sequenced uniform panels offer a good compromise between price and esthetics.

Blueprint-Matched Panels and Components

This method of panel matching achieves maximum grain continuity since all panels, doors, and other veneered components are made to the exact sizes required and in the exact veneer sequence. If possible, flitches should be selected that will yield sufficient veneer to complete a prescribed area or room. If more than one flitch is needed, flitch transition should be accomplished at the least noticeable, predetermined location. This method requires careful site coordination and relatively long lead times. Panels cannot be manufactured until site conditions can be accurately measured and detailed. This panel matching method is more expensive and showcases veneering in its most impressive manner.



Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Chipboard Particle
Hardwoods incorporated

PANEL CORE (SUBSTRATE)

Hardwood plywood is composed of at least three elements: a face, a back, and a core. Holding these pieces together is the glue line or glue. Each type of core has a specific use and represents a better value or better product for the specific use. Consideration should be given to special requirements, such as fire resistance, water resistance, weight, flatness, rigidity and strength required. FSC-certified and / or CARB-certified cores are available, as well as cores that are formaldehyde free. There are a large number of different cores offered through our distribution centers, including:

Medium-Density Fiberboard (MDF) Core

To form fiberboard, wood particles are reduced to fibers in a moderate-pressure steam vessel, combined with a resin, and bonded together under heat and pressure. Medium-density fiberboard (MDF) is one of the most widely used composite board products. The surface is flat, smooth, uniform, dense, and free of knots or grain patterns. It makes a superb substrate for veneers and can be enhanced to a fire-retardant, moisture-resistant or bendable core. (See below.)

Particleboard (PB) Core

Particleboard is produced from wood particles of various sizes that are bonded together with a synthetic resin or binder under heat and pressure. This product is commercially classified by "density," which is measured by the weight per cubic foot of the panel product. Medium-density industrial particleboard is used in the broadest applications of architectural woodwork.. It is especially well suited as a core (substrate) for high-quality veneers and decorative laminates. It can be enhanced to a fire-retardant, moisture-resistant or bendable core. (See below.)

Veneer Core (VC)

To form veneer core, three or more layers (plies) of wood veneers are pressed and glued into a single sheet. Layers of veneer are pressed together in alternating perpendicular layers balanced on either side of a central core layer. This type of plywood is more prone to surface irregularities and defects, but exhibits greater strength in bending and in stress than other core types. High-quality, calibrated veneer core – with as many as 13 plies – is recommended for architectural veneer panels. This virtually eliminates surface irregularities and defects. Please turn to page 16 for further information on veneer core grades.

Combination Core

Particleboard or fiberboard is combined in a balanced blend with veneer layers to form combination core.

Fire-Retardant Core

Particleboard and MDF cores can be treated during manufacturing to carry a UL stamp for Class I fire rating (flame spread 20; smoke developed 25).

Moisture-Resistant Core

Particleboard and MDF cores both are available with special resins that resist swelling when exposed to moisture.

Bendable Core

Kerfed particleboard and MDF cores are available for radius projects. Depending on the veneer (and veneer backer), a radius of 16 inches should be obtainable when applying a veneer prior to bending. Certain cores are capable of bending to five inches or less before applying the veneer face. For additional information on bending panels, please see page 47.

The information for this section was compiled from a variety of resources, including "Veneer Solutions," which is published by the Architectural Woodwork Institute. The publication may be purchased at www.awinet.org/store.

VENEER BACKER

Raw veneer may be difficult to handle and tends to split easily. The addition of a backer makes the veneer easier to handle. Application can be made easier and a better result achieved when the best backer for the veneer is specified. There are a large number of backers available both for natural veneers and reconstituted wood veneers.

Paper Backers

This is a veneer backed with a single layer of paper. The paper layer greatly reduces the potential for splitting during cutting and application. A selection of 10-, 20- and 30-mil paper-backed veneer is available with or without a pressure-sensitive adhesive.

Pressure-Sensitive Adhesive Backers

This is a veneer backed with a single layer of paper treated with pressure-sensitive adhesive. Veneers can be applied easily by peeling away a sheet that protects the adhesive. Once the adhesive is exposed, it is simple to position the veneer and apply pressure. Platen and bag presses work best, but a fiber knife or veneer scraper carefully worked in the direction of the grain will yield good results.

Wood Backers

A decorative wood veneer face with a utility grade wood backer applied at an opposing direction to the face veneer. Wood backers are also referred to as wood-on-wood.

Phenolic Backers

Veneers backed with an impregnated phenolic resin paper, similar to the backing on high-pressure laminate (e.g. Arborite, or Wilsonart). This surprisingly flexible product is ideal for use by installers already familiar with handling high-pressure laminates. It is installed using the same tools and procedures.

Polybak®

Polybak® is a single-ply sheet which can be used as a backer sheet for veneer. It is extremely flexible and up to two-and-a-half times stronger than other backers. The sheet is comprised of kraft paper impregnated with a proprietary polymer system that contains no formaldehyde, which is unique when compared to other commercial backers. It provides exceptional moisture resistance and high tensile strength. Polybak is a stable product with a virtually unlimited shelf-life.

Polybak Inventory

Size	Thickness	Color	Weight (lbs. per sq. ft.)
49 x 97 (4 x 8)	.02	Brown	0.12

ARCHITECTURAL GRADE PLYWOOD INVENTORY

Our distribution centers stock a variety of architectural grade hardwood panels all sequenced-matched and numbered. Don't find what you are looking for – call us for quotes on custom lay-up panels.

Architectural Grade Hardwood Plywood Inventory

Species	Size	Grade	Core	Cut	Match
Anigre, Figured	3/4 x 49 x 97	AA-1	MDF	QTR	SM & N
	3/4 x 49 x 121	AA-1	MDF	QTR	SM & N
Cherry	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Mahogany, African	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Maple, White	3/4 x 49 x 97	A-1	MDF	PS	SM & N
	3/4 x 49 x 121	A-1	MDF	PS	SM & N
Walnut	3/4 49 x 97	A-1	MDF	PS	SM & N

QTR = Quarter Cut PS = Plain Sliced RC = Rotary Cut SM & N = Sequence Matched and Numbered

VENEER SHEETS

Our distribution centers stock a large inventory of natural wood veneer and reconstituted wood veneer sheets, from the most exclusive "AA" grade, such as SanPly from Jacaranda and Nature's Palette from Brookside, to "A" and "B" grade veneers from various domestic vendors. Most veneer sheets are stocked backed with paper, wood or phenolic. Raw (un-backed) veneers, or other backer options, such as peel-and-stick, are also available. Call your local sales or spec rep for samples or quotes that satisfy your custom requirements.

Available Sizes: Most veneers are available as 4' x 8' with a limited number of species available as 2' x 8', 4' x 10', 5' x 8', and 5' x 10' sizes.

Available Backers: Most veneers are available with 10 mil and 20 mil paper backs, wood backs, phenolic backs and Polybak. Sheets with phenolic backs are available as 4' x 8' size sheets only. See page 32.

Many of our natural wood veneers are available as FSC-certified products or as controlled woods. Custom panels may be produced with veneers and core materials that qualify for points toward LEED certification. The most commonly requested veneers are included in the charts on pages 34, 35 and 36. Other veneer products are available upon request. Please talk with your sales representative for assistance with materials that meet standards for your next LEED project.

Available Natural Wood Veneers

Veneer Species	Color	Cut
Afromosia	Medium	QTR
Alder, Red	Medium	PM
Alder	Medium	PM
Anigre, Figured	Medium	QTR
Ash, Brown	Medium	QTR
Ash, European Figured	Light	QTR
Ash Burl, Olive	Light	RC
Ash, Tamo	Light	RC
Ash, White	Light	PS, QTR
Ash Burl, White	Light	RC
Avodire	Light	QTR
Avodire, Figured	Light	PS, QTR
Bamboo	Dark	QTR
Bamboo	Light	QTR
Beech, European Steamed	Light	PS, QTR
Beech, Figured European Steamed	Light	PS
Birch, Red	Medium	RC WPF, RC SF
Birch, White	Light	PS, QTR, RC WPF
Bubinga	Dark	QTR
Butternut	Medium	PS
Cedar, Aromatic Red	Dark	PS
Cedar, Spanish	Medium	PS
Cherry	Medium	PS, QTR
Cherry, Curly Figured	Medium	PS, QTR
Cherry, Quilted	Medium	PS
Cypress	Light	PS
Ebony, Macassar	Dark	PS, QTR
Elm Burl, Carpathian	Burl	RC
Elm, Red	Medium	PS
Etimoe	Dark	PS
Eucalyptus Pommele	Burl	QTR
Eucalyptus, Figured	Burl	QTR
Figueroa, Figured	Medium	QTR
Douglas Fir, Vertical Grain	Light	QTR
Hickory	Medium	PS

PS = Plain Sliced QTR = Quarter Cut PM = Plank Match RC = Rotary Cut WPF = Whole-Piece Face SF = Spliced Face

Available Natural Wood Veneers

Veneer Species	Color	Cut
Jatoba (Brazilian Cherry)	Dark	PS, QTR
Koa, Hawaiian	Dark	PS, QTR
Lacewood, Bleached	Light	QTR
Lacewood	Medium	QTR
Laurel, East Indian	Dark	PS
Limba, Black	Dark	QTR
Louro Preto	Dark	RC
Madrone Burl	Dark	RC
Mahogany, African	Medium	PS, QTR
Mahogany, African Broken Stripe	Medium	QTR
Mahogany, Crotch	Dark	PS
Mahogany, African Ribbon	Medium	QTR
Makore	Dark	QTR
Makore, Block Mottled	Dark	QTR
Makore Fiddleback	Dark	QTR
Maple	Light	PS, QTR, RC WPF, RC SF
Maple, Bird's-eye	Light	PS, RC
Maple, Curly	Light	PS, QTR
Maple, Figured	Light	QTR
Maple, Quilt	Light	PS
Mappa Burl	Light	RC
Mozambique	Dark	PS
Mozambique, Figured	Figure	QTR
Myrtle Burl	Medium	RC
Oak, English Brown	Dark	PS, QTR
Oak, Red	Medium	PS, QTR, RC, Rift
Oak, Red Heavy Flake	Medium	QTR
Oak, White	Medium	PS, QTR, RC, Rift
Oak, White Heavy Flake	Medium	QTR
Okoume	Medium	RC WPF
Orientalwood, Figured	Dark	QTR
Padauk	Dark	PS, QTR
Pearwood, Swiss	Medium	PS, QTR
Pine, Knotty	Light	PS PM
Pine, White	Light	PS, QTR

PS = Plain Sliced QTR = Quarter Cut PM = Plank Match RC = Rotary Cut WPF = Whole-Piece Face SF = Spliced Face

Available Natural Wood Veneers

Veneer Species	Color	Cut
Pine, Yellow	Light	PS, QTR
Poplar, White	Light	RC WPF
Prima Vera	Medium	PS, QTR
Purpleheart	Dark	PS, QTR
Redwood Burl	Dark	RC
Rosewood, African	Dark	PS
Rosewood, East Indian	Dark	PS
Rosewood, South American	Dark	PS
Sapele	Dark	PS, QTR
Sapele Pommele	Dark	QTR
Satinwood	Medium	QTR
Sycamore, Figured	Light	PS, QTR
Sycamore, English Figured	Light	PS, QTR
Teak	Medium	PS, QTR
Walnut	Dark	PS, QTR
Walnut Burl	Dark	RC
Walnut Crotch	Dark	PS
Wenge	Dark	PS, QTR
Zebrawood	Medium	PS, QTR

PS = Plain Sliced QTR = Quarter Cut PM = Plank Match RC = Rotary Cut WPF = Whole-Piece Face SF = Spliced Face

RECONSTITUTED WOOD VENEERS

Reconstituted wood veneers are slices of blocks or "flitches" made from pre-dyed veneer which has been laminated, and in some cases, deformed, to produce a special grain and color characteristic. Crafted exclusively from fast-growing hardwood trees from managed forests in Africa, reconstituted wood veneers offer a unique opportunity to preserve the environment.

A selection of reconstituted wood veneers is currently available as FSC-certified veneer products. Please check the charts of stocked products on pages 37, 38 and 29 for FSC-certified products. As additional certified reconstituted veneer products become available, we will make them available through our distribution centers. Call your sales representative for product updates and availability.

Our distribution centers offer the exclusive line of Brookside™ reconstituted wood veneers. For FSC-certified reconstituted wood veneer products, see chart on pages 37 and 38. The product offering from Brookside includes:

Brookline® Veneer
Brookline is produced from a solid laminated block of dyed veneer. When sliced, each block yields 25" x 11'3" or 25" x 8'3" sheets of veneer, depending on the pattern. We recommend using a hot or cold press to bond Brookline to the proper substrate. (Custom sizes available.)

Brookline® Paperback Veneers

Bonded through heat and pressure to a variety of backings, the backed veneers are stress-relieved, sanded and trimmed. The resulting product is an extremely flexible veneer that is ideal for laminating to curved or flat surfaces.

Braewood®

Braewood is created from two leaves of Brookline veneer which are spliced together and laminated to a paper impregnated with phenolic resin. The resulting product can be fabricated with the ease of a decorative laminate and requires only light sanding before finishing. The actual size of the finished face – 48" x 132" or 48" x 96" – is determined by the grain pattern.

Braewood® Pre-finished

This line of Braewood is finished with a specially designed matte polyurethane coating. The process yields a durable, transparent coating which is resistant to water and heat. Each sheet is post-formable and available with a protective peel sheet.

Other Products

Also available by special order: Brookline lumber, edgebanding, and melamine-finished Braewood. Ask for details!

Veneer Species	Color	Cut/Figure	Part Number	Available FSC
American Cherry, Quartered	Dark	QTR	891/X	
Antique Cherry	Dark		5017	
Ash	Light	QTR	2-323/XV	
Bamboo	Medium		939	
Bamboo	Medium		AW.26	
Birdseye Maple	Light	Bird's-eye	AW.22	
Brown Ash	Medium		300/3HS	
Carmine Birdseye	Dark	Bird's-eye	5109	
Carmine Birdseye Maple	Dark	Bird's-eye	AW.23	
Carpathian Burl	Medium	Burl	1240	
Ceylon Rosewood, Quartered	Dark	QTR	474/00/Y12	
Cherry	Dark		AW.17	
Cherry	Dark		8-913/MER	
Cherry	Medium	PS	2-921/CA2	
Cherry	Medium	QTR	2-921/Y17	
Cherry	Medium	PS	901/3HS	
Cherry Burl	Medium	Burl	5131	
Cherry, Quartered	Dark	QTR	AW.06	
Classic Mahogany	Dark	QTR	844/00/Y17	
Douglas Fir	Medium	QTR	926/V	
Ebony	Dark	QTR	633/Y17	

PS=Plain Sliced QTR= Quarter Cut RC=Rotary Cut

Available Reconstituted Wood Veneers by Brookside Veneer

Veneer Species	Color	Cut/Figure	Part Number	Available FSC
Elm	Medium		AW.16	
English Mahogany, Quartered	Dark	QTR	AW.12	
European Cherry	Medium		AW.09	
Figured Cherry	Medium		AW.25	
Figured Maple	Light		1265	
Figured Maple	Light		AW.24	
French Oak	Light		AW.10	
Birdseye Brandied Peach	Medium	Bird's-eye	FSC1117	X
Butternut	Light		FSC1100	X
Ebony	Dark		FSC607/00/Y12	X
Oak	Light		FSC2-230/00/Y17	X
Prima Birdseye	Light	Bird's-eye	FSC1261	X
Teak	Medium		FSC760/00/Y17	X
Gold Teak	Medium	QTR	740/00/Y32	
Golden Maple	Medium		5113	
Honey Oak, F/C	Medium	PS	260/00/F3-A-20	
Honey Teak, F/C	Medium	PS	706/F2-30	
Indian Rosewood	Dark		5023	
Italian Yew	Dark		5121	
Karelian Birch	Light		AW.27	
Light Chestnut	Light		AW.14	
Limba	Light	QTR	AW.02	
Macassar Ebony	Dark	QTR	603/00/XV	
Mahogany	Dark	QTR	813/V	
Makassar Ebony, Quartered	Dark	QTR	AW.20	
Maple	Light	PS	913/CAB-3	
Maple, Quartered	Light	QTR	2-380/X	
Maple, Quartered	Light	QTR	AW.04	
Medium Brown Oak	Dark	QTR	255/XV	
Oak, Quartered	Light	QTR	AW.08	
Old English Mahogany	Dark		5021	
Olive Ash, Burl	Medium	Burl	RRO	
Pear Wood	Medium		AW.15	
Plank Teak	Medium		5019	
Regatta Blue Birdseye	Dark	Bird's-eye	5107	

PS=Plain Sliced QTR= Quarter Cut RC=Rotary Cut

Available Reconstituted Wood Veneers by Brookside Veneer

Veneer Species	Color	Cut/Figure	Part Number	Available FSC
Rift Oak	Light		112/00/Y17	
Rosewood	Dark		450/3HS	
Sapele Pommele	Dark		1302	
Swiss Pear, Quartered	Medium	QTR	AW.05	
Sycamore	Light		AW.13	
Sycamore, Quartered	Light	QTR	AW.01	
Teak	Medium	PS	702/3HS	
Teak, Quartered	Dark	QTR	720/V	
Thailand Teak, Quartered	Medium	QTR	AW.19	
Tundra Concept	Medium		AW.28	
Walnut	Dark		AW.11	
Walnut	Medium	PS	509/3HS	
Walnut Burl	Dark	Burl	1215	
Walnut PF	Dark	PS	579/FNZ3	
Walnut, Quartered	Dark	QTR	AW.07	
Walnut, Quartered	Medium	QTR	2-580/X	
Wenge PF	Dark	QTR	947/Y32	
Wenge, Quartered	Dark	QTR	AW.03	
Zebrano, Quartered	Medium	QTR	AW.18	
Zebrawood	Medium	QTR	650/00/Y17	

PS=Plain Sliced QTR= Quarter Cut RC=Rotary Cut

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

INDUSTRIAL PANELS

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

Exceptional Substrates for a Variety of Construction Needs

High-quality engineered board products deliver consistency in strength, thickness and surface smoothness for reliable performance without the shortcomings of wood. Designed to resist warping and cupping, industrial panels are suitable for applications ranging from furniture manufacturing to substrates for laminates. These industrial panels are manufactured to exacting standards to ensure performance in the most demanding applications.

Each of our distribution centers stocks a selection of quality industrial panels, including:

- Particleboard
- Medium-density fiberboard (MDF)
- Specialty composite boards

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

FSC®
www.fsc.org

The mark of responsible forestry

FSC® C068144

UNIBOARD™

www.uniboard.com/en

SierraPine
COMPOSITE SOLUTIONS

www.sierrapine.com

INDUSTRIAL PANELS

TECHNICAL REFERENCE

The distribution centers offer many different industrial panel products for a variety of uses and applications. Included in the industrial panel inventory are particleboard, medium-density fiberboard (MDF), and specialty composite boards.

Particleboard is the economical choice for manufacturing fixtures, furniture, countertops, and many other products. The stability, flatness and smoothness of particleboard make it an ideal substrate for plywood, melamine and high-pressure laminate. During the manufacturing process, additives are incorporated to provide greater dimensional stability, fire resistance, and/or to enhance other properties.

MDF is widely used in the manufacturing of case goods, cabinet doors, furniture, moulding and millwork. The dimensional stability, flatness and excellent machining qualities of MDF have contributed to its broad acceptance among fabricators. Additives and different manufacturing technologies have expanded applications for composite panels.

Industrial Particleboard Inventory

	24 x 145	36 x 145	49 x 97	49 x 145	61 x 97	61 x121
1/2"			•			
5/8"			•			
3/4"	•	•	•	•	•	•
1"			•			
1 1/8"		•	•		•	

MEDIUM DENSITY FIBERBOARD (MDF), PREMIUM GRADE

Our distribution centers offer a broad selection of MDF panels. We offer five different composite panels from Sierra Pine, Ltd., Uniboard and other composite panel manufacturers. We also offer standard industrial grade MDF in many different sizes from various sources.

Uniboard Excel+ MDF

	4 x 8	5 x 8
3/4"	•	•

Uniboard Excel+ MDF is a premium quality, light-colored 100% softwood panel. It offers a uniform density profile that is ideal for surface and edge-machining applications and provides a stable core and superior surface for printing and laminating.

INDUSTRIAL GRADE MDF

We stock a selection of standard industrial grade MDF from a variety of sources. Stock sizes are indicated below.

MDF (Industrial Grade)

	4 x 8	4 x 10	5 x 8	5 x 10	5 x 12
1/4"	•	•	•		
3/8"	•		•	•	
1/2"	•	•	•	•	•
3/4"	•	•	•	•	•
7/8"			•		
1"	•				
1-1/8"	•				
2"			•		

ULTRALIGHT MDF

In addition to standard MDF, we stock ultralight fiberboard manufactured from 100% radiata pine with a 32-lb. density. This equates to a 30% lighter board than standard MDF, reducing freight costs, making handling easier, and reducing tool wear. It is the ideal substrate for store fixtures, furniture and all other applications where weight would be a concern.

MDF (Ultralight)

	4 x 8
1/2"	•
3/4"	•

SPECIALTY COMPOSITES

Encore™ FR Particleboard

Encore™ FR provides Class 1 fire protection in wall systems, store fixtures, furniture and case goods. Encore FR is an environmentally preferable Class 1 flame-retardant particleboard panel manufactured from recycled wood fiber. Additives are blended with the wood fiber to provide flame-retardant properties throughout the panel. This ensures the flame retardancy isn't compromised when the panel is machined or sanded, resulting in an extra level of protection compared to products made with surface flame retardant coatings. Encore FR is produced with no added urea formaldehyde and meets the most stringent emission standards in the world, including the Phase 2 requirements of the California Air Resources Board ATCM 93120. Encore FR is available with the option of FSC Chain of Custody certification and, as an added bonus, has enhanced moisture-resistant properties. This product is ideal for LEED® and other environmentally focused building projects requiring Class 1 certified materials.

	49 x 97	61 x 97	61 x 109
1/2"	•	•	•
3/4"	•	•	•

Encore contributes to the following LEED Credits – Materials & Resources (4, 5, 7) – Indoor Environmental Quality (4.4)

Arreis™ Sustainable Design Fiberboard

We carry the Arreis™ line of no-added formaldehyde, medium-density fiberboard from SierraPine. Arreis is engineered to meet the growing demand for sustainable products and has the same performance characteristics as standard MDF, yet is produced with a formaldehyde-free adhesive system and 100% post-industrial recycled wood fiber. FSC-certified product is available upon request.

Arreis contributes to the following LEED Credits – Materials & Resources (4.1, 4.2, 5.1, 5.2, 7) – Indoor Environmental Quality (4.4)

	49 x 97	61 x 97
1/4"	•	
1/2"	•	
3/4"	•	•
1"	•	

Medite® FR

Medite® FR is an MDF board developed specifically for use in situations where a Class 1 flame-retardant board is required. It is a sustainable Class 1 flame-retardant, medium-density fiberboard (MDF) panel manufactured from post-industrial recycled wood, meeting the most stringent formaldehyde emission standards in the world. SierraPine's patented manufacturing process utilizes a formaldehyde-free adhesive system to produce Medite FR. During processing, an additive is blended with the fibers to provide flame-retardant properties throughout the board. Unlike surface flame-retardant coatings, the flame-retardant properties of Medite FR aren't compromised when the panel is machined or sanded. Medite FR is the ideal product for interior applications that require a certified Class 1 product and where certain indoor air quality requirements are specified. FSC-certified product is available upon request.

Medite FR is SCS-certified for having recycled or recovered wood fiber content.

Medite FR contributes to the following LEED Credits: – Materials & Resources (4.1, 4.2, 5.1, 5.2, 7)

	49 x 97	Custom Sizes up to 5' x 18'*
1/4"	•	•
3/8"	•	•
1/2"	•	•
5/8"	•	•
3/4"	•	•
1"		•
1-1/4"		•

*Minimum order applies.

Medite® II

Interior Grade MDF, No Added Formaldehyde

Medite® II is an interior-grade, engineered wood-based panel manufactured from softwood fibers combined with formaldehyde-free synthetic resin. It is recommended for use in areas where moisture is not a concern. Medite II retains the light tan color of the wood fiber used in its manufacture.

The smooth surface ensures the best possible application of modern laminates and liquid coatings. Its consistent core produces excellent precision routing and shaping results.

Medite II is the substrate of choice in applications where formaldehyde emissions are a concern. Unlike other low formaldehyde boards, such as low-emitting urea formaldehyde, phenol formaldehyde or melamine formaldehyde, Medite II is manufactured with absolutely no added formaldehyde in any form. FSC-certified product is available upon request.

Medite II contributes to the following LEED Credits: – Materials & Resources (4.1, 4.2, 5.1, 5.2, 7) – Indoor Environmental Quality (4.4)

	49 x 97	Custom Sizes up to 5' x 18'*
3/8"	•	•
1/2"	•	•
5/8"	•	•
3/4"		•
1"		•
1-1/4"		•

*Minimum order applies.

Medex®

Moisture-Resistant MDF, No Added Formaldehyde

Medex® is an engineered wood-based panel product manufactured from wood fibers combined with formaldehyde-free synthetic resins. Engineered for high interior moisture areas, it is well known for its smooth surface, ease of workmanship and ability to take a precise machined edge or panel route. Medex retains the color of the wood fiber used in manufacture.

The smooth surface ensures the finest application of modern laminates and liquid coatings. The consistent core produces excellent precision routing and shaping results.

Medex is SCS-certified for having recycled or recovered wood fiber content and containing no added formaldehyde.

Sanding thickness tolerances are accurate to within 0.005 inches.

Independent tests have shown Medex to have formaldehyde emissions below the ambient outdoor levels found in much of rural North America. They have become the material of choice in those areas where the presence of formaldehyde is a concern and moisture resistance is needed. FSC-certified product is available upon request.

Medex contributes to the following LEED Credits: – Materials & Resources (4.1, 4.2, 5.1, 5.2, 7) and Indoor Environmental Quality (4.4)

	49 x 97	Custom Sizes up to 5' x 18'*
3/8"	•	•
1/2"	•	•
5/8"		•
3/4"	•	•
1"	•	•
1-1/4"	•	•

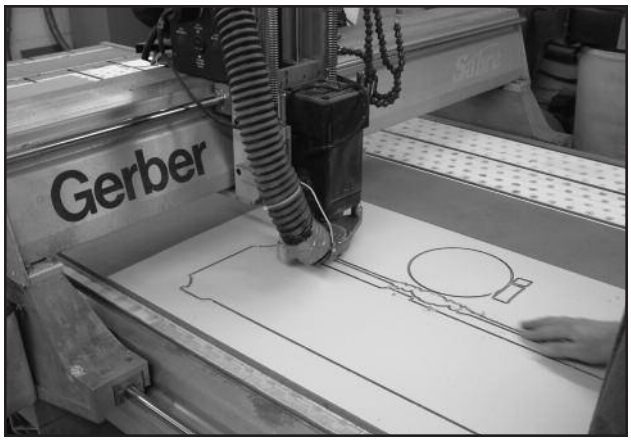
*Minimum order applies.

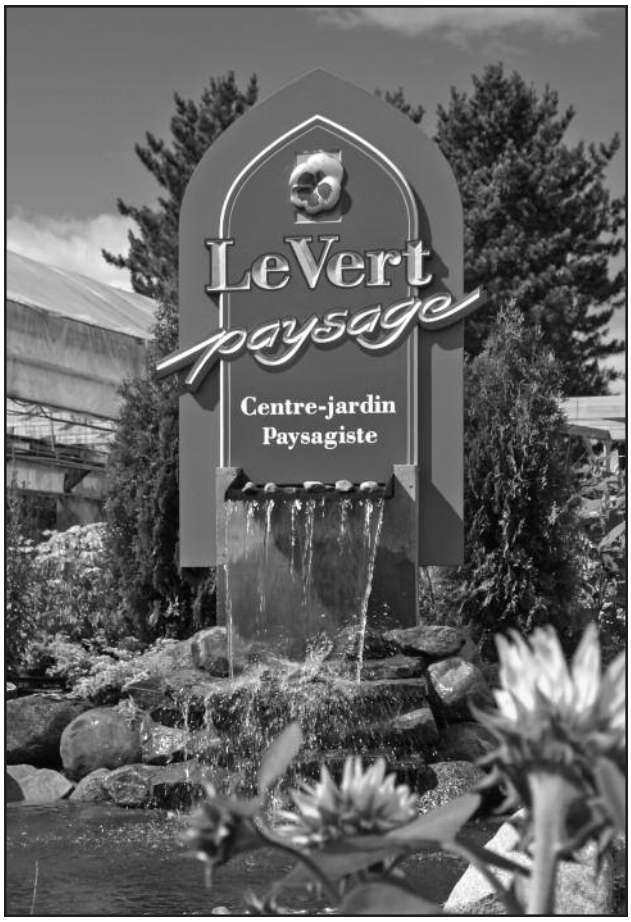
Extira®

Extira® is a treated, wood-based, moisture-resistant composite panel designed for exterior use. It must be primed and painted before being exposed to exterior applications. Finishing should be done with coating materials recommended by the coating manufacturer for use on wood or wood composite substrates. Ninety-degree edges should be eased to improve paint film coverage. Final qualification of coatings and end-use are the responsibility of the user.

- Alternative to wood in exterior paint-grade applications
- Treated with zinc borate for rot and termite resistance
- Phenolic-bonded for exterior durability and moisture resistance
- Essentially no formaldehyde emissions.
- 5-year limited warranty.
- 4' x 16' press

	49 x 97	25 x 194
1/2"	•	
3/4"	•	
1"	•	
1-1/4"	•	•

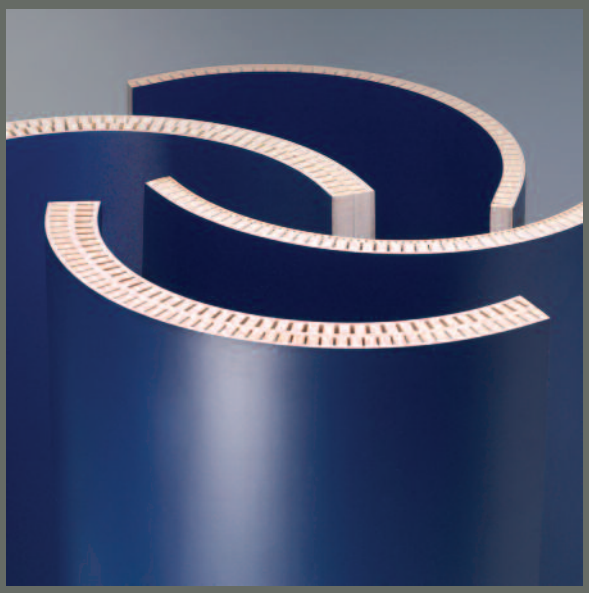




Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Molding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

BENDING PANELS

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle



Bending Panels for Unique, Customized Designs

Flexible MDF products from Neat Concepts provide adaptable, expansive design options for architects, designers and cabinet makers. Great new fabrication techniques are possible with bending panels because fabricators can easily create frameless, free-form custom curves. These revolutionary flexible timber materials are being specified for some of the most stylish interior designs in retail and refurbishment projects across the country.

Neatform is the ultimate material for constructing curved surfaces in commercial and domestic applications, for everything from reception desks to exhibition stands and innovative architectural features. The unique and innovative product is ideal for those wanting to create unusual, curved surfaces in custom installations.

Product benefits:

- A uniquely flexible bending substrate
- Durable and ideal for finishing
- Ready to paint or stain
- Follows the intended curve without bumps or hollows
- A full range of custom curves can be fabricated easily

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

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FSC® C068144

NEATCONCEPTS LIMITED

www.neatconcepts.com

BENDING PANELS

Our distribution centers stock a selection of versatile MDF products from Neat Concepts. The unique construction of bending MDF products from Neat Concepts enables it to be quickly formed into strong, smooth custom-curved surfaces with less weight than other techniques.

These MDF products have unique bending qualities which makes it easy to create unique, one-of-a-kind designs. This fantastic material allows professional and hobby interior designers alike to create unusually shaped accessories, furniture and features for homes and commercial environments.

NEATFORM™ BENDY MDF

Neatform™ Bendy MDF is a high-quality, bendable sheet material. It is a processed sheet of MDF, which is widely recommended by architects and designers and used by woodworkers where top quality curved shapes or surfaces are required.

Neatform has a smooth pre-sanded (120 grit) surface, which makes it ideal for painting, veneering or laminating. Combined with the consistency and dimensional stability of the high quality MDF used to make Neatform, it has become the preferred bendable material for many applications including: columns, counter fronts, wavy walls, ceilings, stage and film sets and commercial cabinet making. Neatform can also be used to fabricate lightweight components and can be used in conjunction with bending plywood to create components where structure, impact resistance and screw-holding ability are important.

Neatform can be attached directly to a framework or used to surface another material, such as bending plywood. Alternatively, using the double-skin technique, two sheets of Neatform can be glued together to create freestanding double sided curves, which enable greater design flexibility.

Neatform Bendy MDF Inventory

	Description	4 x 8	8 x 4
1/4"	Long-Cut 8' High Column	•	
1/4"	X-Cut 4' High Barrel		•
3/8"	X-Cut 4' High Barrel		•

BENDING PLYWOOD

Bending plywood is a flexible product that can be formed into curves as required and provides a smooth face surface. The high quality surface can be used as is or covered with the face material of your choice. It is perfect for columns, furniture and cabinetry.

Bending Plywood Inventory

	4 x 8	8 x 4	10 x 4
3/8"	•	•	•

Bending Birch Inventory

	4 x 8	8 x 4	10 x 4
1/8" (2-ply)	•		

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

MOULDINGS

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

The Incomparable Beauty of Hardwood Mouldings

Hardwood moulding is the ideal finishing touch for cabinets, furniture and residential and commercial spaces. Moulding adds style, polish and sophistication to every project. While we offer a selection of stock profiles in red oak, poplar, maple and mahogany, we can accommodate your custom order in a broad variety of domestic and exotic species. We cut our own knives and are continually adding to our collection of more than 1000 patterns.

In addition to the hundreds of hardwood profiles we offer, we also offer a veneer-wrapped alternative to traditional hardwood moulding. Our goal is to provide profile and species options to meet even your most ambitious architectural and design needs, including innovative, technologically advanced products, such as veneer-wrapped mouldings. Please see page 60 for information about our veneer-wrapped moulding products.

Please contact the distribution center in your area for custom orders or to inquire about species available.

A limited selection of domestic and imported species are available as FSC-certified. Please contact a sales representative at the distribution center in your area for more information about FSC-certified products.

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

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MOULDINGS

At Hardwoods Incorporated, we know that you are buying more than moulding when you select our products. You're choosing exceptional quality, professional expertise, and decades of manufacturing experience.

We specialize in serving the needs of architects and designers, custom cabinet makers, fixture manufacturers, builders and homeowners. Hardwoods Incorporated has one of the largest inventories of specialty hardwoods and related products in the Southeast. We carry our commitment to excellence to extraordinary levels with a fully integrated process that allows us to control quality from rough green lumber through the drying and manufacturing process, to sales in our distribution centers. This highly integrated production process affords us the ability to price our mouldings competitively while delivering the highest quality mouldings and services in the market.

More than a million linear feet of mouldings are produced each month at our Cleveland, GA, facility from a variety of hardwood species, including ash, basswood, birch, cherry, hickory, mahogany, poplar, hard maple, soft maple, red oak, white oak and walnut. All of the Appalachian hardwoods used to mill our moulding products are processed through company-owned dry kilns.

Each of our distribution centers stocks a variety of moulding products. If the moulding you prefer is not in inventory at the distribution center near you, it can be ordered for delivery within days.

Please see page 12 for S4S hardwoods.

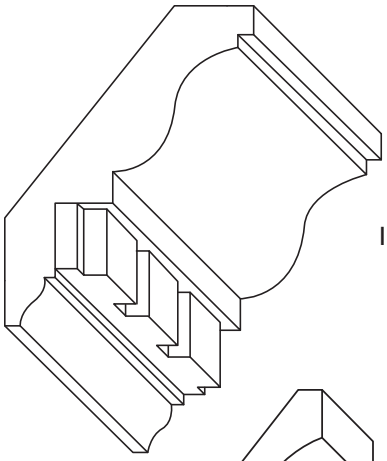
STOCK MOULDINGS

We stock a complete line of hardwood mouldings in a variety of species including, ash, basswood, birch, cherry, hickory, mahogany, poplar, hard maple, soft maple, red oak, white oak and walnut. Contact your local distribution center for product availability.

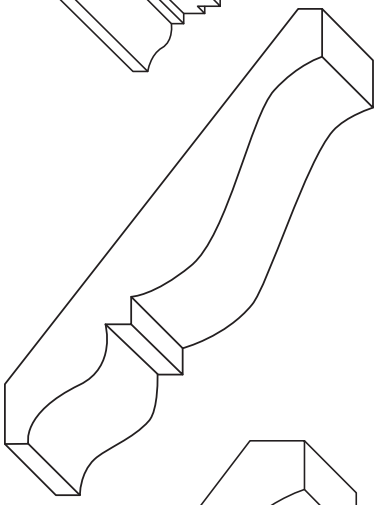
CUSTOM MOULDINGS

Custom mouldings are also available upon request. Orders for custom mouldings often can be filled within a 10-day period. Please call the distribution center in your area for current lead times. Please refer to the lumber section of this catalogue, page 9 for Millwork Services.

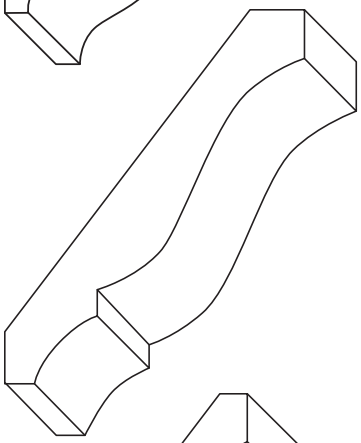
Crown Mouldings



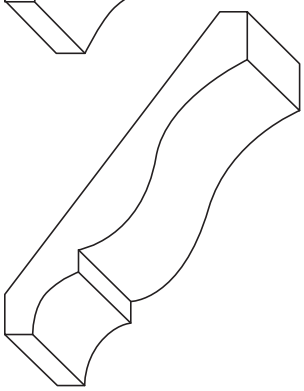
Crown
WCM7
1-1/16 x 5-9/16
Dentil
WCM707
11/16 x 15/16



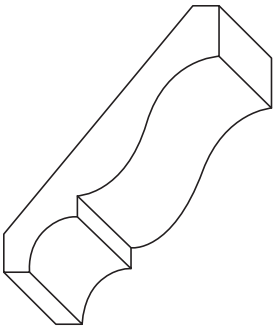
8" Crown
WCM9
1-1/16 x 7-9/16



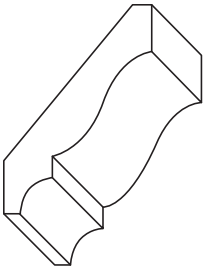
7" Crown
WCM15
1-1/16 x 6-1/2



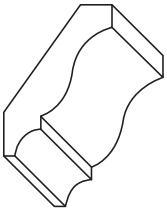
6" Crown
WCM17
11/16 x 5-5/8



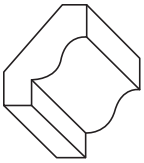
5" Crown
WCM47
11/16 x 4-5/8



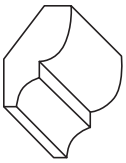
4" Crown
WCM49
9/16 x 3-5/8



3" Crown
WCM52
9/16 x 2-5/8

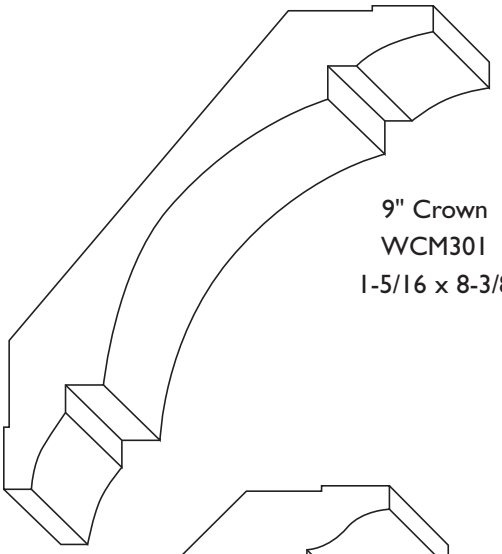


2" Crown
WCM60
9/16 x 1-3/4

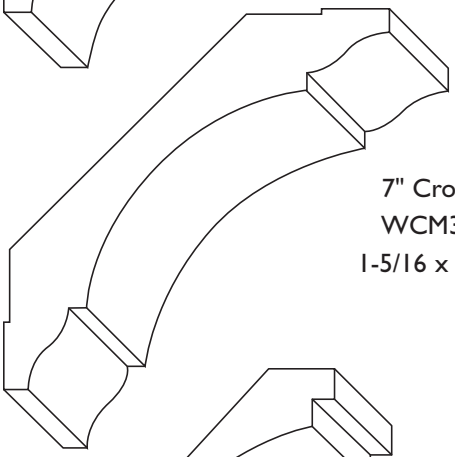


2" Crown
WCM74
9/16 x 1-3/4

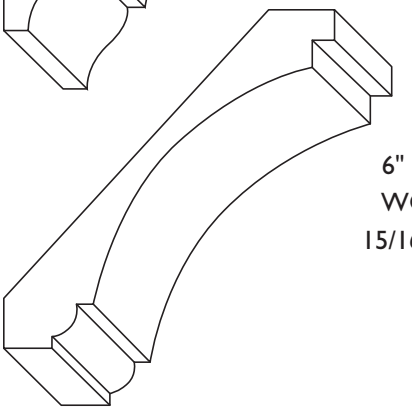
Moulding illustrations in this section are not depicted to actual size. Please contact the distribution center in your area for a more extensive selection of moulding profiles. For downloadable, scalable files of moulding profiles that can be reproduced at actual size, please visit our Web site at www.hardwoodweb.com.



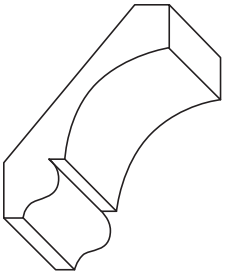
9" Crown
WCM301
1-5/16 x 8-3/8



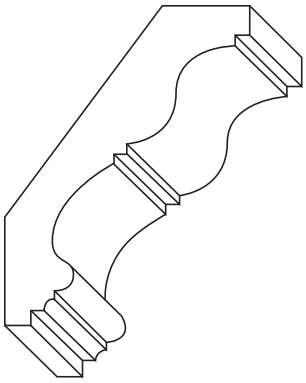
7" Crown
WCM375
1-5/16 x 6-5/8



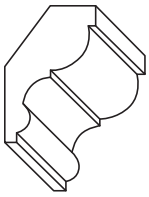
6" Crown
WCM325
15/16 x 5-7/8



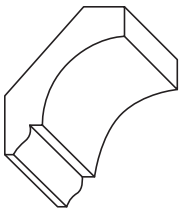
4" Crown
WCM309
3/4 x 3-11/16



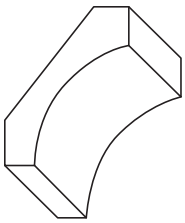
6" Crown
WCM346
1-1/4 x 5-9/16



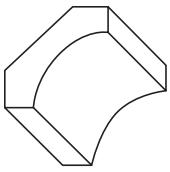
3" Crown
WCM339
3/4 x 2-3/8



3" Crown
WCM317
11/16 x 2-9/16



3" Crown
WCM370
23/32 x 2-3/4



2" Crown
WCM85
9/16 x 1-3/4

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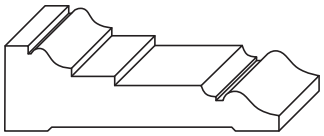
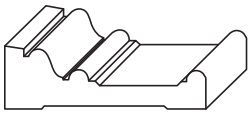
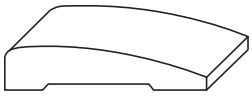
Casings



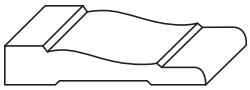
5" Casing
WCM591
1-1/2 x 4-3/4



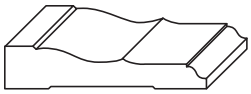
4" Casing
WCM3
1-1/16 x 3-1/2



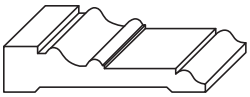
4" Casing
WCM326
3/4 x 3-1/2



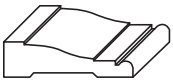
4" Casing
WCM344
3/4 x 3-1/2



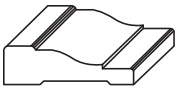
4" Casing
WCM345
3/4 x 3-1/2



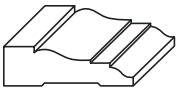
4" Casing
WCM573
13/16 x 3-1/2



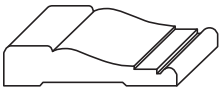
3" Casing
WCM351
11/16 x 2-1/2



3" Casing
WCM356
11/16 x 2-1/4



3" Casing
WCM366
11/16 x 2-1/4



3" Casing
WCM371
11/16 x 3

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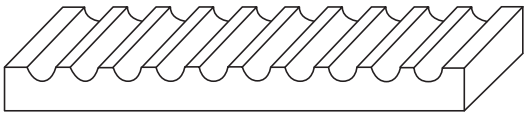
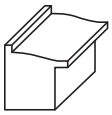
Back Bands

3" Casing
WCM711
5/8 x 2-1/4

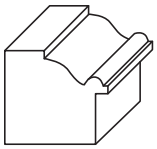


8" Fluted Casing
WCM719
3/4 x 8

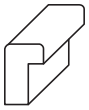
4" Fluted Casing
WCM726
3/4 x 3-7/8



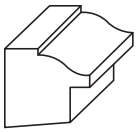
Back Band
WCM200
1-3/16 x 1-1/8



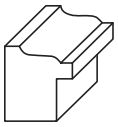
Back Band
WCM207
1-1/2 x 1-5/8



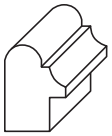
Back Band
WCM280
11/16 x 1-1/16



Back Band
WCM281
1-5/16 x 1-3/8



Back Band
WCM282
1-3/16 x 1-5/16



Back Band
WCM288
1-1/16 x 1-1/2

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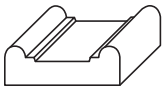
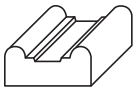
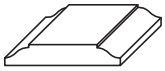
Mull Casings & Aprons



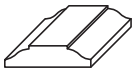
Mull Casing
WCM22-2
11/16 x 2



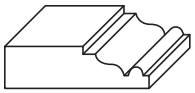
Mull Casing
WCM22-1-1/2
11/16 x 1-1/2



Mull Casing
WCM987-2
3/8 x 2



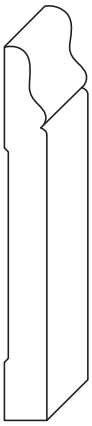
Mull Casing
WCM987-1-1/2
3/8 x 1-1/2



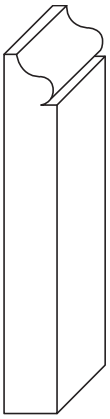
Apron
WCM2
23/32 x 2-1/2

Apron
WCM313
9/16 x 2

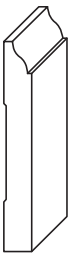
Base Mouldings



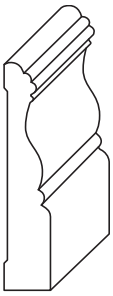
Base Mould
WCM637
3/4 x 6-1/2



Base Mould
WCM609
3/4 x 6-1/4



Base Mould
WCM624
9/16 x 4-1/4



Base Mould
WCM504
13/16 x 3-15/16

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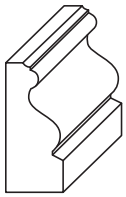
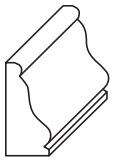
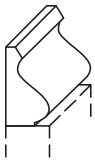
Base Caps, Shoes and Quarter-Rounds



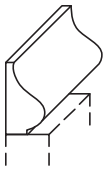
2-1/4" Base Cap
WCM579
1 x 2-1/4



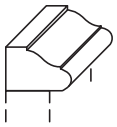
2" Base Cap
WCM664
3/4 x 1-5/8



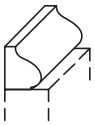
Base Cap
WCM163
11/16 x 1-3/8



Base Cap
WCM166
11/16 x 1-1/4

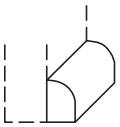


Base Cap
WCM5
3/4 x 1-1/8

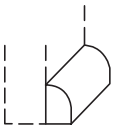


Base Cap
WCM172
5/8 x 3/4

Base Cap
WCM174
1/2 x 3/4



Shoe Mould
WCM31
1/2 x 3/4



Shoe Mould
WCM127
7/16 x 11/16

Quarter Round
WCM106
1/2 x 1/2

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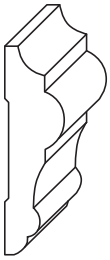
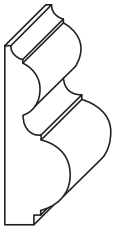
Chair Rail

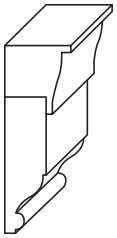
Chair Rail
WCM1001
23/32 x 2-3/4



Chair Rail
WCM297
1-1/32 x 3-9/16

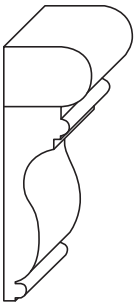


Chair Rail
WCM417
1-1/8 x 3-1/8



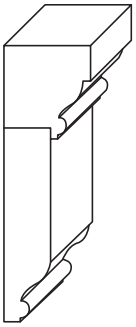
Back Band
WCM200
1 3/16 x 1-1/8

Chair Rail
WCM501
11/16 x 2-3/8



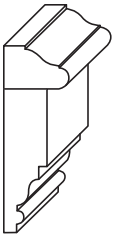
Mantle Mould
WCM505
1-1/8 x 3-3/8

Chair Rail
WCM205
1 x 1-1/2



Back Band
WCM207
1-1/2 x 1-3/8

Chair Rail
WCM504
13/16 x 3-3/8



Back Band
WCM5
3/4 x 1-1/8

Chair Rail
WCM2
23/32 x 2-1/2

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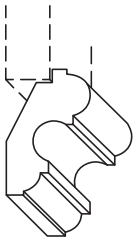
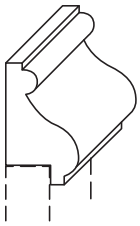
Panel Mouldings

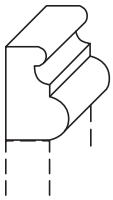


Panel Mould
WCM8503
1-7/16 x 2-3/16



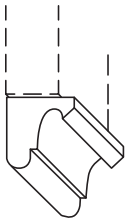
Panel Mould
WCM151
1-1/4 x 2-1/8

Panel Mould
WCM8500
1 x 1-7/8



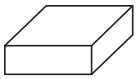
Panel Mould
WCM42
1-1/16 x 1-5/8

Panel Mould
WCM42-3/4
1-1/16 x 1-5/8



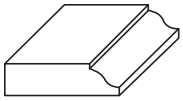
Panel Mould
WCM8504
3/4 x 1-1/4

Stops

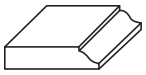


Stop
WCM932
1/2 x 1-1/2

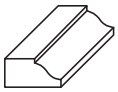
Stop
WCM934
1/2 x 2



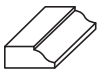
Stop
WCM936
1/2 x 2



Stop
WCM935
3/8 x 1-5/8



Stop
WCM941
1/2 x 1-1/2



Stop
WCM940
3/8 x 7/8

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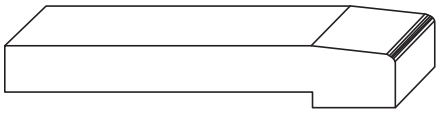
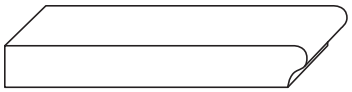
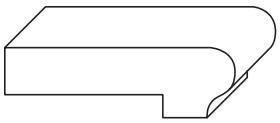
Window Trim



Door Sill
WCM46-3/4
1-1/16 x 6-3/4



Stool
WCM39
11/16 x 5-1/4



Stool
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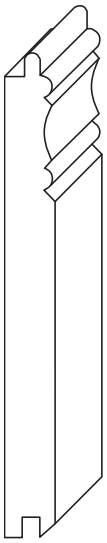
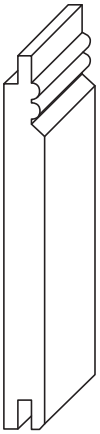
1-1/4 x 4

Stool
WCM1194
11/16 x 2-3/4

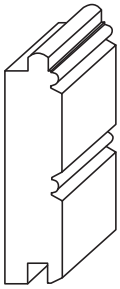
T & G Paneling



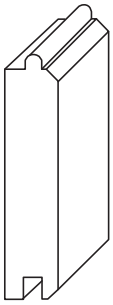
V-JT Pickwick



Twin V-JT Bead



Double Beaded



V-Joint

All paneling profiles are offered tongue-and-groove in 1x4, 1x6 and 1x8, depending on species.

Paneling also offered in two thicknesses: 9/16" resawn and 3/4" full sawn.

Moulding illustrations in this section are not depicted to actual size. Please contact the distribution center in your area for a more extensive selection of moulding profiles. For downloadable, scalable files of moulding profiles that can be reproduced at actual size, please visit our Web site at www.hardwoodweb.com.

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

MELAMINE

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

Melamine Offers Versatile Design Performance

Decorative, thermally fused melamine surfaces provide exceptional flexibility for both residential and commercial applications. At each of our distribution centers, we stock a collection of high-performance melamines manufactured by industry leader Uniboard. This stylish collection offers versatility and design options that make it a preferred choice for architects, designers, builders and manufacturers.

Consistently superior quality, along with cutting-edge innovations, such as exclusive NOVACOLOR™ technology and available Nu Green particleboard substrate, make the Uniboard melamine collection the right choice to achieve today's design and building objectives. Contemporary colors and finishes are ideal for corporate, retail, institutional or residential applications. The aesthetic appeal, durability and ease of maintenance of these products, along with a 100 percent matched selection of high-pressure laminates and edgebanding, make Uniboard an ideal design solution.

For assistance with products which may help you meet LEED requirements, refer to the chart on page three or contact your Hardwoods Incorporated sales representative.

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UNIBOARD™

www.uniboard.com/en

MELAMINE

We carry a variety of melamine panels manufactured by Uniboard™ at our distribution centers. These durable, stain-resistant panels are suitable for commercial and residential applications.

UNIBOARD MELAMINES

You can view the Uniboard collection of melamine products online at www.uniboard.com/en. We invite you to put the quality of Uniboard products and the experience of our distribution center sales representatives to work for you.

Uniboard thermally fused melamine designs have been customized to enhance every interior and suit every application beautifully, from high-wear commercial applications, to attractive residential cabinetry and furnishings. Uniboard melamine panels are available in 83 of the most contemporary solid colors, abstracts and woodgrains. Designs are thermally fused to high-quality particleboard or MDF core. With these panels, Uniboard sets the benchmark for quality and creativity!

Nu Green

Uniboard melamine can be specified with Nu Green particleboard. Nu Green is a no added urea-formaldehyde (NAUF) substrate that is comprised of 100 percent pre-consumer recycled wood fibers and is FSC certified. This certification may help your project qualify for up to six LEED points.

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

Uniboard Melamine Inventory

		4 x 8	5 x 8	5 x 9	5 x 10
White	1/4"	•	•		
Suede finish –	1/2"	•			
other finishes available	5/8"	•			
	3/4"	•	•	•	•
	1"	•	•		
Black	1/4"	•			
Suede finish –	1/2"	•			
other finishes available	5/8"	•			
	3/4"	•	•		•
Canadian Grey	1/4"	•			
Suede finish –	1/2"	•			
other finishes available	5/8"	•			
	3/4"	•	•		
Almond	1/4"	•			
Suede finish –	1/2"	•			
other finishes available	3/4"	•	•		

Woodgrain Melamine Inventory

		4 x 8	5 x 8
Elegance 748	1/4", 3/4"	•	•
Bourbon Cherry 204	1/4", 3/4"	•	•
Port 965	1/4", 3/4"	•	•
Caramel Cherry 176	1/4", 3/4"	•	•
Hardrock Maple 992	1/4", 3/4"	•	•

Uniboard thermally fused designs are available on your choice of particleboard, MDF, NAUF MDF, Nu Green or specially fire-rated and moisture-resistant composite panels. Talk with your sales representative about ordering these special substrates, additional colors or available patterns.

Integra Program

Uniboard melamine products are included in the Integra Program, which is an alliance between leading manufacturers designed to assure a perfect match between TFM, HPL, edgebanding and moulding. Integra offers the matching components you need to complete your project to exacting specifications.

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Veneers Unpeel MDF Veneers Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood

REFERENCES

Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle

Technical Information

In this section is a species guide that provides detailed information about the color, texture and characteristics of various wood species. Additionally, you will find a glossary with common terms used in the lumber industry.

This data has been compiled through a variety of resources, including information provided by associations with whom we have affiliations, including:

American Hardwood Export Council – www.ahec.org
Architectural Woodwork Institute – www.awinet.org
Forest History Society – www.lib.duke.edu/forest
Forest Stewardship Council – www.fsc.org
Hardwood Distributors Association – www.hardwooddistributors.com
Hardwood Manufacturers Association – www.hmamembers.org
Hardwood Plywood & Veneer Association – www.hpva.org
National Hardwood Lumber Association – www.natlhardwood.org
Wood Components Manufacturers Association – www.woodcomponents.org
U.S. Green Building Council – www.usgbc.org

For MSDS sheets, please contact your sales representative or visit the manufacturer's Web site:

Amana Tool – www.amanatool.com
Arborite – www.arborite.com
Brookside Veneers – www.veneers.com
ColorRite – www.colorriteinc.com
Columbia Forest Products – www.columbiaforestproducts.com
Extira – www.extira.com
Ferrari – www.ferrarispa.it
Liri – www.liriamerica.com
Medite and Medex Industrial Panels – www.sierrapine.com
Mohawk Finishing Products – www.mohawk-finishing.com
Neatform Bending Panels – www.neatconcepts.com
Timber Products Company – www.timberproducts.com
Uniboard – www.uniboard.com/en

Afrormosia

Other names: African Teak, Kokrodua, Assamela

Wood Description:

The sapwood is golden light brown in color and clearly demarcated from the orange-brown heartwood. The heartwood tends to be lightly streaked and turns brownish-yellow with exposure to light and air. Streaks tend to darken with exposure and may become a deep crimson-brown with bands of lighter, golden brown. In appearance, Afrormosia can resemble fine-grained Teak. It usually has a straight, slightly interlocked grain with a medium to fine texture.

Origin:

Afrormosia grows throughout areas of West and Central Africa, and is found mostly along the Ivory Coast, Ghana, Cameroon, and Congo, as well as Nigeria and Zaire.

Comments:

Afrormosia is often used in furniture, furniture components and kitchen cabinets. It is also used for boat building, shipbuilding, canoes, rustic furniture and utility furniture.

Alder

Other names: Red Alder, Western Alder

Wood Description:

Alder, when freshly cut, is very pale – almost white in color. As it begins to oxidize, the color grows deeper and takes on golden and red tones. Heartwood occurs only in trees of advanced age. The boundary between alder sapwood and heartwood is virtually invisible. The wood has a fine, uniform textured with a straight, yet subdued grain.

Origin:

Alder thrives throughout the Pacific Northwest, with growth occurring from Alaska, down through several Canadian provinces, and as far south as Southern California. It is the most abundant commercial hardwood in the Western United States.

Comments:

We stock 4/4 alder from Oregon in several grades. Alder usually is sold by mill priority grades: superior grade, cabinet grade, frame stock. The package lengths are heavy eight-foot and boards usually average five to seven inches in width.

Alder is popular for use in cabinetry and upholstery framing due to its stability and excellent tack holding qualities. Alder stains and polishes well and is often used as a cherry substitute.

Anigre

Other names: Aniegre, Anegre, Anningeria

Wood Description:

Anigre is a blonde wood with sapwood that is not well demarcated. The heartwood ranges in tone from cream and yellowish-white to tan with a pinkish tinge, and generally presents an even color. Anigre is about the same weight as African mahogany, with a medium to coarse texture. The texture is fine in higher wood grades. The wood is lustrous, yet siliceous, and usually has a straight grain, although wavy or mottle figure is sometimes present. Anigre has a faint cedar-like odor.

Origin:

Anigre is found throughout Africa, with commercial varieties coming mainly from the Ivory Coast. The wood was introduced, first from Tanzania, only in the late 1960s.

Comments:

Anigre has gained popularity in recent years for uses in modern architecture. Its smooth, tight grain and light, neutral colors lend itself to modern design. Anigre is used for furniture and decorative furniture veneers, cabinetry and high-class joinery. It is also a popular wood for plywood core stock and utility plywood.

Ash

Wood Description:

Ash is a ring-porous wood with prominent growth ring patterns. The sapwood is light in color and can vary from a creamy color to nearly white. Depending on the species, the heartwood can vary in color from pale yellow to light brown with grayish tones, sometimes tinged with red. A very straight-grained wood, ash can appear similar to red oak, with a coarse, even texture.

Origin:

American ash is readily available and grows predominantly through the middle and northern Atlantic regions, extending into Canada. Some species also grow abundantly in the Appalachian region.

Comments:

We stock southern Appalachian ash, which tends to be whiter and a softer texture than northern tough ash. Ash is often substituted for red oak in furniture construction, due to its favorable price value.

Ash is also a popular wood for sports uses, including water skis, oars, cues and baseball bats. Its bending properties and other characteristics also make it a favorite for use as tool handles and boat parts. Other uses include flooring, paneling, decorative woodwork, furniture and cabinets.

Basswood

Other names: Whitewood, Linden

Wood Description:

The sapwood of basswood is very pale and may appear white or cream-colored, or a pale, pinkish-tan. The heartwood is also very pale with occasional brown or reddish streaks. The very light tones of both sapwood and heartwood make it difficult to differentiate between the two. The wood is relatively soft for a hardwood, and has a fine, even texture. The grain is straight, and essentially, indistinct.

Origin:
Basswood is most commonly found in the Great Lakes Region, including areas of both Canada and the United States. Growth areas extend east to Pennsylvania and New Jersey, and south through portions of West Virginia, Kentucky and East Tennessee.

Comments:
Our major suppliers are located in West Virginia. Basswood is an important tree in the Appalachian area, but only represents about eight percent of the volume of timber. Due to limited availability, basswood can be in tight supply.

Basswood is used in window treatments as shade rollers and for wooden blinds. The soft characteristics of basswood make it a popular choice for carving and turning. It is also used for boxes, crates, cabinetry and as a plywood substrate.

Beech, European Steamed

Wood Description:
Beech heartwood varies from pale pink-brown to a rich, reddish-brown when steamed. The sapwood is pale with a slight red tinge. A characteristic fleck makes the fine, even texture of the close, straight grain readily recognizable.

Origin:
Beech is found throughout Europe, in the U.K. and parts of West Asia.

Comments:
European beech is imported to the U.S. for custom cabinetry. It is sometimes substituted for American soft maple or alder and mainly ranges in length from eight to 12 feet.

Its ability to hold polish and wear well makes beech a popular choice for furniture, flooring, doors, general millwork, wooden ware, toys, and handles for brooms and brushes. Since beech has no odor or taste, it is also used for food containers.

Birch

Other names: Sweet Birch, Yellow Birch, Paper Birch

Wood Description:
Depending on the species, birch sapwood appears light, with a cream-like or white color. The heartwood may be light reddish-brown or dark brown tinged with red. The close, straight grain is finely textured and uniform in appearance, with the grain more prominent in yellow birch than paper birch. On occasion, some birch species will present a curly grain.

Origin:
Birch grows throughout the northeastern United States and is the state tree of New Hampshire. It also thrives in the Great Lakes area, including lake areas in southern Canada. Yellow and sweet birch can be found in the Appalachians, extending into areas of northern Georgia. Availability is limited to some extent.

Comments:
Typically, we stock northern birch lumber that is sold as a select and better grade. Birch is a popular hardwood for furniture, furniture frames, decorative woodwork, cabinets and paneling. Birch veneers are extremely popular for high-grade plywood. We inventory numerous grades of birch plywood and veneer.

Bloodwood

Other names: Satine, Satinwood, Satine Rouge, Satine Rubane

Wood Description:

The sapwood of bloodwood is clearly demarcated and yellowish in color. The heartwood varies in color from red with a golden luster, to a deep, rich reddish-brown. The grain ranges from straight to slightly interlocked and wavy. It is fine textured and enhanced by a satiny appearance

Origin:

Bloodwood grows in the Amazon Basin and a wide range of tropical South American areas, including French Guiana, Venezuela, Peru and Brazil. It also grows in areas of Panama.

Comments:

Bloodwood's vivid red color makes it popular for decorative veneers used in small quantities for marquetry, inlay and for banding in high-end furniture and cabinetry.

Bocote

Other names: Cordia, Ziricote

Wood Description:

Bocote sapwood is usually light brown, but may also be brownish-red, yellow, or pale green. The heartwood ranges in color from a light golden brown to a chocolate brown, with irregular reddish to dark brown streaks. Bocote is usually straight grained with a medium to coarse texture.

Origin:

Bocote grows in Mexico and Central America, including Guatemala, Honduras, Nicaragua and Colombia. It also is found in the Caribbean, including the islands of Cuba, Haiti, Jamaica and the Dominican Republic.

Comments:

Bocote is ideal for decorative accents in small projects. Its ability to be drilled end-grain and develop a high luster in finishing makes it popular for pen makers.

Bubinga

Other names: African Rosewood, Kevasingo, Kewazinga

Wood Description:

Bubinga sapwood is very pale with clear demarcations. A variety of colors can be found in the heartwood, that include pink, vivid red, or red-brown with purple veining. On exposure, the veining becomes less conspicuous, and the deep colors fade to yellow or medium brown with a reddish tint. Bubinga has a fine, even texture with a straight or interlocked grain.

Origin:

Bubinga grows in Equatorial Africa, from Cameroon and Gabon to southeast Nigeria, to the Congo region, and to some extent, in Zaire.

Comments:
Bubinga is often used for knife and brush handles. The most popular use of bubinga is as veneers, especially the highly figured logs. Decorative veneers are used on furniture and cabinets and for paneling. The figured veneers are especially desirable for furniture inlays, with pomele figure being the most popular.

Bubinga Pomele

Other names: African Rosewood, Kevasingo, Kewazinga

Wood Description:
Bubinga sapwood is very pale with clear demarcations. A variety of colors can be found in the heartwood, that include pink, vivid red, or red-brown with purple veining. On exposure, the veining becomes less conspicuous, and the deep colors fade to yellow or medium brown with a reddish tint. Bubinga has a fine, even texture with a straight or interlocked grain. Bubinga from the Gabon area often has a wavy grain (pomele), and is sometimes highly figured, producing a decorative appearance when flat- and quarter-sawn.

Origin:
Bubinga grows in Equatorial Africa, from Cameroon and Gabon to southeast Nigeria, to the Congo region, and to some extent, in Zaire.

Comments:
Unusual and beautiful curved figuring makes bubinga pomele an excellent choice for architectural woodwork and veneers, furniture inlays and musical instruments. The most popular use of bubinga is as veneers, especially the highly figured logs.

Canary Wood

Other names: Yellow Poplar, Canary Poplar, Ariba, Tarara, Porcupine Wood

Wood Description:
Canary wood sapwood is a light brown color that contrasts sharply from the vibrant heartwood colors ranging from brown to yellow, with red and purple stripes in the grain pattern. Its grain is straight and coarse, similar to oak, with a hard texture. This wood is similar to Brazilian tulip wood, but not as dense and less expensive.

Origin:
Canary wood is found in areas of South America, especially Bolivia.

Comments:
Canary wood gained wide usage for furniture framing and drawers in the early part of the twentieth century. Today, it often is used for mouldings and millwork, boxes, and other small projects.

Cedar, Aromatic Red

Other names: Eastern Red Cedar, Tennessee Aromatic Red Cedar

Wood Description:

Cedar is known for its attractive red color and sweet smell. The heartwood ranges in color from medium reddish-brown to a deep orange-red and the sapwood is a yellow-white and contrasts sharply with the heartwood. Growth rings are clearly visible with strong contrast between early wood zones and denser, late wood zones. The grain is usually straight, although often marred by knots, and has a coarse texture. Cedar is most well known for its scent and its ability to repel or kill most insects that might damage clothing and linens.

Origin:

Aromatic cedar is found in abundance in a specific region of the United States that ranges from east Texas, across Oklahoma into Tennessee.

Comments:

Cedar is used often in chests and closets for its aromatic and insect-repelling purposes. Because of its natural resistance to decay, cedar also is used in outdoor furniture and decorative garden accessories, as well as for gates, decks and fences.

Cedar, Spanish

Other names: South American Cedar, Brazilian Cedar, Cigar-box Cedar

Wood Description:

The heartwood of Spanish cedar ranges in color from pinkish- to reddish-brown, when first cut. The color darkens as it ages to a dark reddish-brown, and sometimes displays a purplish tinge. The sapwood ranges in tones from white to pinkish-white. The grain is prominent and usually straight, but sometimes appears interlocked. The wood texture ranges from fine and uniform to coarse and uneven, with a medium luster. Spanish cedar produces a distinctive odor and is often oily on the surface.

Origin:

Spanish cedar grows in Central and South America from Mexico to Argentina. It is found in all South American countries except Chile.

Comments:

Spanish cedar is popular for use in cigar boxes, blanket chests, and boat building.

Brazilian Cherry

Other name: Jatoba

Wood Description:

Brazilian cherry has a medium to coarse texture and ranges in color from an orange-brown to red-brown. The wood is usually streaked with dark or russet brown stripes. Brazilian cherry is a medium- to coarse-textured wood with an interlocked grain. The golden luster of Brazilian cherry (jatoba) blends well with American cherry. Brazilian cherry is an extremely dense wood that is hard and very strong. This density and the interlocked grain make it moderately difficult to work with hand or machine tools. A moderate blunting of tools is to be expected. Brazilian cherry does not hold nails well, but has good gluing properties. The wood can be stained with a range of dark stains, but does not take a high polish.

Origin:
Brazilian cherry grows on ridges or slopes and high riverbanks throughout Central and South America, including southern Mexico, to areas of northern Brazil, Bolivia and Peru. It is also found in the West Indies.

Comments:
Brazilian cherry is now used widely in premium flooring. Its dense texture makes it a logical choice. Brazilian cherry is also used as tool handles, stair treads, ship planking, and building construction. Additional uses include furniture and cabinet making.

Cherry

Wood Description:
Cherry heartwood offers a beautiful, light reddish-brown color that darkens with age and exposure to sunlight. Some heartwoods take on reddish tones similar to mahogany and deepen over time to a dark reddish-brown with golden overtones. The sapwood can be very light, ranging in shades from white to pale yellow. The straight, tight, satiny grain of cherry can be marred by flecks or small gum pockets.

Origin:
Cherry is found in the midwestern and eastern United States, with a high area of concentration in Pennsylvania, Virginia, West Virginia and New York. Cherry only represents one percent of the volume of timber and lumber production in the Appalachian region.

Comments:
We often find excellent cherry from the higher elevations in western North Carolina and West Virginia. Due to the premium paid for veneer logs, saw log quality for lumber has suffered in recent years.

Cherry is highly prized for fine furniture, cabinetry, mouldings and decorative millwork. It is also an excellent choice for high-end paneling, boat interiors and musical instruments.

Curly Cherry

Wood Description:
See description under cherry.

Comments:
Limited availability in lumber.

Curly cherry most often is used for fine furniture, cabinetry, musical instruments and decorative millwork. Select, "curly" logs are sliced into decorative veneers and used as furniture inlays and for high-end paneling.

Wormy Chestnut

Other name: American Chestnut

Wood Description:

The distinctive appearance of wormy chestnut was caused by a blight in the early part of the twentieth century, producing a repeated pattern that looks similar to worm holes. The heartwood is pale brown to grayish-brown, with golden tones that darken with age. The wide growth rings are prominent. The sapwood is very pale – almost white in appearance. Chestnut is straight-grained and can appear similar to oak.

Origin:

American chestnut trees were killed by the blight early last century. Few trees survive until maturity, which makes chestnut, logs unavailable. Hybrid chestnut trees have been planted for chestnuts.

Comments:

Wormy chestnut is extremely rare and very limited. Some lumber and veneer stock still exists and price is usually negotiated at the time of purchase. The distinctive look and repeated pattern of worm holes makes it a favorite in hunting lodges or high-end architectural libraries.

Cocobolo

Wood Description:

When first cut, the heartwood of cocobolo displays a wide range of colors, from rich red to variegated streaks of yellow and red-orange colors. It fades on exposure to a deep, rich orange with black stripes and mottling. It has a fine texture and irregular, interlocked grain.

Origin:

Cocobolo in found along the western coast of Mexico, Central and South America.

Comments:

Cocobolo is popular for turnery, cutlery handles, wooden jewelry and small decorative items. It slices beautifully into veneers, which highlight the grain and figure of the wood. Its oily nature allows it to cut smoothly and polish easily.

Ebony, Black African

Other names: Madagascar Ebony, Nigerian Ebony

Wood Description:

African ebony varies in color from grey to jet black. It may be solid black, or black/brown and streaked with black/brown. The sapwood is pink when first cut, darkening to a muted red-brown. The texture is very fine, with a grain that may be straight to slightly interlocked, or somewhat curly.

Origin:

African ebony forms nearly pure stands in riverbank areas of Equatorial West Africa, including southern Nigeria, Ghana, Cameroon and Zaire.

Comments:
African ebony is used often as parts of musical instruments, including piano and organ keys and violin fingerboards. It also is used as handles for cutlery and tools, and as brush backs. As saw-cut veneers, it is used to repair antiques. Supply is sporadic and usable stock is usually small in size.

Ebony, Brazilian

Other names: Brazilian Walnut, Brazilian Gombeira, Irontree, Tajibo

Wood Description:
Brazilian ebony is a dense, heavy wood that can be found in a wide range of colors and figures, from solid with even color, to streaked and marble-like figure. The heartwood ranges from olive-brown to near black and can have lighter or darker markings that are sharply separated from the sapwood, which is lighter and yellow in appearance. When first cut, the colors and figure are bright and bold. Once exposed to air and light, the brightness of the wood diminishes and takes on a darker, more subtle appearance. Brazilian ebony is a low-luster wood with an oily appearance. The wood texture is usually fine and uniform, but can range from ultra-fine to medium in texture. The grain that is almost always straight, but also can range from straight to very irregular.

Origin:
Brazilian ebony is found throughout the rain forests and mountains of Paraguay, Argentina and Brazil in South America.

Comments:
This species is a good choice for decking and planking, both inside and out, as well as railings, mouldings, cap rails, trim work and fittings. It is often used in dock work, harbor construction or for railroad ties. It is often used for flooring, especially industrial-application flooring, because of its hardness, durability, and shock-resistant properties.

Ebony, Macassar

Other names: Mecassar Ebony, Indian Ebony

Wood Description:
Macassar ebony is known for its black and brown/black streaks, which are very visually appealing. Ebony heartwood can range in color from dark brown to grayish-brown, with black streaks or brown mottling. The wood has a fine, even texture and is usually straight-grained.

Origin:
Macassar ebony grows in lower latitudes right round the world, from Southeast Asia, through India, including the East Indies, Philippines, and Celebes Islands, Africa and Central America.

Comments:
Macassar ebony is used for the black keys of keyboard instruments and as fittings for violins. It is also used for cabinetry, brush backs, tools handles and billiard cues. Ebony also is sliced for decorative veneers.

Goncalo Alves

Other name: Tigerwood

Wood Description:

Goncalo alves ranges in color from light golden-brown to reddish-brown with blackish-brown streaks, which gives it the familiar name of tigerwood. It is richly mottled and similar in appearance rosewood. A hard, heavy wood, it has a medium to fine texture and tight, irregular, interlocked grain with alternating layers of hard and soft wood. Goncalo alves is very durable and will take a glass-like finish.

Origin:

Goncalo alves grows throughout tropical South America in areas including Brazil, Paraguay, and Uruguay.

Comments:

Goncalo alves is a popular wood for high-class furniture, cabinetmaking and decorative work. It's also used for billiard-cue butts, jewelry boxes, bows and paneling. Its durability and density make it an excellent choice for interior flooring and exterior decking. Sliced veneers are used in architectural paneling and face veneering.

Granadillo

Other names: Macacauba, Coyote

Wood Description:

Granadillo varies somewhat in color and can be found in red, black and brown variations. The black is much like Morado – a dark brown, usually distinctly striped wood with a straight grain. The red is much like Honduras Rosewood, with a reddish-brown cast and a figured grain, with a fine to medium texture. The sapwood is very pale – almost white. The heartwood is a mix of brilliant colors ranging from deep orange-red with black striping or mottling and streaks that ages to beautiful markings of red, black, purple, yellow and orange when exposed to air. It is very hard, heavy and dense with tight, straight interlocked grain and low luster. This oily wood is slightly pungent and fragrant when worked.

Origin:

Granadillo is found in the Pacific region of Central and South America, extending from southwestern Mexico to the Brazilian Amazon region. The trees grow best in the drier uplands and tend to be small in stature.

Comments:

Granadillo is frequently used in fine furniture and cabinetry, including decorative veneers and inlays. It is also popular for flooring, turnings, handles, musical instruments, fine accessories, jewelry, musical instruments and specialty items such as violin bows and billiard cues accents.

Hickory/Pecan

Other name: Red Hickory

Wood Description:

Hickory and pecan are virtually indistinguishable species within the walnut family of trees. The appearance of hickory/pecan sapwood is white, and quite often tinged with brown. The heartwood ranges in color from pale brown, to brown with red tinges. The heartwood occasionally takes on deeper reddish-brown tones, and is referred to as "red" hickory. Both the sapwood and heartwood are course in texture, usually with a fine, straight grain.

Origin:
Hickory/pecan is primarily an American wood, with growth concentration throughout the eastern Atlantic states, including Georgia, Tennessee, and the Carolinas in the South, continuing up through areas of southeastern Canada. Although not an abundant species, hickory is readily available.

Comments:
Hickory and pecan logs are not separated at the sawmill and are virtually indistinguishable. In recent years hickory has become more poplar in kitchen cabinetry. Its variegated grain pattern has a distinctive appearance. We often source hickory from middle Tennessee and eastern Kentucky.

A popular use of hickory is as chips in smokers and barbecues to flavor meat. Its resilience and strength also make it an excellent choice for tool handles and wooden ladders. More decorative uses include furniture, paneling, flooring and cabinets.

Ipe

Other names: Ironwood, Brazilian Walnut, Cortez

Wood Description:
Ipe is an extremely dense tropical hardwood with excellent durability and performance characteristics, and strength similar to teak (two to three times harder than oak). The sapwood is yellowish-white to whitish in color, becoming light orange when dry. The heartwood is olive-brown in color, with lighter or darker streaks. The grain ranges from straight to very irregular and intercrossed in narrow bands, with a fine-to-medium texture and low luster. The figure consists of fine stripes in the radial surface, and the pores are primarily solitary and inconspicuous.

Origin:
Ipe is found throughout continental tropical America and some of the Lesser Antilles. It grows on a variety of sites, from ridge tops, to riverbanks and marsh forests throughout South American and Costa Rica.

Comments:
Ipe is often used for exterior residential and commercial applications, including as boat docks, decking, boardwalks, outdoor furniture, pool decking and park benches, particularly for projects near the ocean air. It is also used in wood flooring, where durability and high shock resistance are needed. It is also popular for fine furniture and for decorative veneers.

Iroko

Other names: Iroko Teak, African Teak

Wood Description:
Iroko is a medium-density wood with white sapwood that is sharply demarcated from the heartwood. The heartwood is golden-orange to brown in color and darkens with age. The wood can at times be colored with yellow bands of soft tissue that form a zigzag pattern on all surfaces, plus darker colored surrounding materials are usually present. The wood has a medium to moderately coarse texture with a grain that is typically interlocked or crossed.

Origin:
Iroko is found in tropical areas of East and West Africa, Angola, the Congo, Gambia, Ghana, Guinea, Benin, Burundi, Cameroon, Gabon, Kenya, Liberia, Mozambique, Nigeria, Rwanda, Sierra Leone, Tanzania, Togo, Uganda, Zaire, Zimbabwe and the Ivory Coast.

Comments:
Iroko is often used in furniture, for factory flooring, in interior construction and for core stock. A popular substitute for teak, iroko is also used for plywood faces and may be sliced for veneer for wall paneling, flush doors, cabinetwork and decorative veneering.

Jatoba

Other name: Brazilian Cherry

Wood Description:
Jatoba varies from yellowish hues, to pink/reds, to dark reds with black striping and an interlocked grain. Quartered selections yield the most uniform look and color range. The sapwood is white, gray, or pinkish in color, and is clearly demarcated from the heartwood. It is reported to be similar to maple in appearance. Like domestic cherry, Jatoba will change dramatically over time from the yellow/tan/salmon color, when freshly milled, into a deep, rich reddish color. In direct sunlight, the color change will occur within a few days. Out of sunlight, it will oxidize slowly over six months. Water-based finishes tend to retard the color change while oil based finishes enhance it. Jatoba is a very beautiful wood with remarkable hardness that makes it an extremely popular and appealing wood.

Origin:
Jatoba is found throughout the Caribbean, in the Cape Verde Islands, throughout the West Indies, from Cuba and Jamaica to Trinidad and Tobago. It is also found in central Mexico, Peru, Bolivia, Brazil, French Guiana, Columbia and Surinam.

Comments:
Jatoba is prized for its pleasing color, beauty and durability. It is used in fine furniture and cabinetry, flooring, stair treads, parquet, architectural details, shipbuilding, joinery and turnery.

Kingwood

Other names: Tigerwood, Brazilian Rosewood

Wood Description:
The heartwood of kingwood ranges in color from russet brown to reddish-brown with rich mottling and wide, irregular, dark brown stripes. Once exposed, it darkens to a red or dark reddish-brown with nearly black stripes. The sapwood shows sharp demarcation and is grayish or brownish-white in color. Kingwood can have a striking figure caused by irregular dark longitudinal bands. The grain varies from straight to wavy, and the uniform wood texture ranges from fine to medium.

Origin:
Kingwood is a common tree in many regions from Mexico and Central America through tropical areas of South America, including Colombia, Venezuela, and Brazil.

Comments:
Kingwood is popular for use in high-end furniture and small decorative projects. It is especially popular among wood turners.

Lacewood

Other names: Silky Oak, Australian Silky Oak, Northern Silky Oak, Queensland Silky Oak

Wood Description:

The narrow sapwood ranges in color from almost white to pale yellow. Lacewood is pale pink to light reddish-brown in color, with a silver grain that gives the wood a silvery sheen. With age, the heartwood matures to a brownish color. Its conspicuous, large rays give it an appearance similar to oak. The wood is straight-grained with a moderately coarse to even texture.

Origin:

Lacewood is believed to be native to Queensland, Australia, specifically in the northern coastal areas. Other species also are found in India, Indonesia and Brazil.

Comments:

A decorative, highly figured wood, lacewood is popular for ornamental furniture inlays. It can be peeled or sliced to produce decorative veneers, hence its popularity for paneling and in furniture and cabinet making.

Limba, Black and White

Other names: Korina, Ofram, Limba, Akom, Fraké

Wood Description:

Limba is a close, straight-grained timber that can sometimes have interlocked or wavy grain that produces excellent figure. It has a moderately coarse texture and open pores that require filling for a smooth surface. Generally, the heartwood of limba is black and the sapwood is white. There can be variations in color from white to black, with, at times, a hint of orange streaking.

Origin:

Distributed most often from the Congo, Limba is found in the rain forests of West Africa from Guinea to Cameroon.

Comments:

Limba is usually sold separately as black or white Limba. The veneer is popular for plywood and commonly used for fine carpentry, joinery, building and flooring. The heartwood veneer is use for highly decorative furniture and paneling.

Mahogany, African

Other names: Nigerian Mahogany, Bassam Mahogany, Khaya

Wood Description:

African mahogany is pink when first cut. Over time, it darkens to a reddish-brown, with streaks of pale, golden brown. The sapwood is yellowish-brown in color, and is not always distinctly demarcated from the heartwood. The grain is usually interlocked, giving the wood a distinctive stripe or "ribbon" figure in quarter-sawn stock. The texture is even, and ranges from medium to coarse, but even with a lustrous surface.

Origin:

African mahogany grows in lower rainfall regions in tropical West, Central and East Africa from Portuguese Guinea to Angola, and from the Sudan to Mozambique.

Comments:
African mahogany is widely used in furniture making and cabinetry, as well as office and bank fittings. It is also used in boat-building and interior joinery. It is a popular wood for plywood and other veneers. Due to the recent increased cost of Honduras mahogany, African mahogany has been found to be an acceptable and more economical substitute.

Mahogany, Honduras

Other names: Brazilian Mahogany, Peruvian Mahogany, South American Mahogany

Wood Description:
The sapwood is yellowish-white to pale brown with heartwood that varies from medium to deep red-brown, and in some heavier woods, a deep, rich red. It is mostly straight-grained, and ranges from medium to coarse, with a uniform texture. Honduras mahogany occasionally is marked with ripple marks and may also display gum deposits.

Origin:
Honduras mahogany grows throughout Central and South America. Commercial supplies most often come from Central America and countries along the Atlantic coast. It is found from Belize to Panama; and in Columbia and Venezuela, Peru, Bolivia, and Brazil.

Comments:
True Honduras mahogany is in short supply. Today most South American mahogany is from Peru, which is slightly inferior to mahogany from Brazil or Bolivia. Straight-grain mahogany is sometimes sold as pattern mahogany named originally for pattern makers in the steel industry.

Mahogany is a preferred wood for high-end furniture and reproductions due to its stability, wide widths and straight grain. It is also used for boat and ship interiors, paneling, pianos and caskets. Rotary-cut veneers are used in plywood, especially plywood paneling. Sliced veneers displaying decorative figures are popular for use in high-end furniture.

Mahogany, Santos

Other names: Balsamo, Cabriuva Vermelha, Cedro Chino, Chirraca, Estoraque, Incienso, Nabal, Navo, Palo de Balsamo, Quina, Sandalo, Tache, Tolu

Wood Description:
Santos mahogany ranges from light orange-brown tones to a dark reddish-brown in color. The white sapwood is sharply demarcated from the heartwood. It has a fine, even texture and tight grain that is quite often interlocked. It is an extremely dense hardwood that is a popular wood for both its durability and beauty, with a surface that can have a medium to high luster.

Origin:
Santos mahogany is found widely throughout Central and South America, from southern Mexico southward down to Argentina.

Comments:
Santos mahogany is typically found in wood flooring, turnery, interior trim, fine furniture, cabinets, entry doors, stairs and moldings.

Makore

Other name: African Cherry

Wood Description:

The heartwood ranges in color from pale pink to deep red, or red-brown. The sapwood is white to light pink, and is clearly demarcated from the heartwood. The texture is fine to medium with a lustrous surface. The grain is generally straight, but sometimes figured with an appearance similar to decorative moiré or watered silk, with streaks of darker color. It is liable to stain if it comes in contact with iron compounds in damp conditions.

Origin:

Makore is found in West Africa, from Sierra Leone to Cameroon and Gabon. It grows widely in the high rain forests.

Comments:

Makore is used in furniture making, cabinet work, turnery and high-end joinery, as well as for boat-building, flooring, and marine plywood. It has good veneering properties, and is used for decorative veneers for coach and architectural paneling. Due to the recent increased cost of Honduras mahogany, makore has been found to be a suitable and more economical substitute.

Maple, Bird's-Eye

Wood Description:

Bird's-eye maple has a characteristic pattern, much like a random series of dots, the create an image similar in appearance to a bird's eyes. Bird's-eye maple comes from the hard maple, also known as rock or sugar maple. The creamy white sapwood of the hard maple is often tinged with pink or pale reddish-brown tones. The heartwood is redder in color, varying from light to dark reddish-brown. The growth rings produce a very fine brown line throughout the wood. The grain of hard maple is tight with a fine texture, and usually straight, although several variations of "curly" or burled grain, which are most desirable, can be found in some hard maples.

Origin:

The bird's-eye maple is a cold-climate tree and grows abundantly in the northeastern United States, middle Atlantic states, and throughout the Great Lakes region, as well as in areas of eastern Canada. It is a popular and abundant American hardwood.

Comments:

Bird's-eye maple lumber is very limited and varies greatly in the frequency of bird's-eye figure.

Hard maple is a popular choice for furniture, cabinets, countertops and musical instruments. Bird's-eye maple is rotary cut when sliced as veneers to produce a continuous sheet. By using the rotary-cut method, the bird's-eye figure becomes more apparent, and is highly prized for decorative use. When specifying veneer you need to consider if the designed effect is highly figured or less figured.

Maple, Curly

Wood Description:
Curly maple occurs when the heartwood of the hard maple is highly figured. The heartwood is reddish in color, varying from light to dark reddish-brown. The growth rings produce a very fine brown line throughout the wood. The grain of hard maple is tight with a fine texture.

Origin:
See hard maple.

Comments:
Curly maple is a popular choice for furniture, cabinets, countertops and musical instruments. Curly maple is often sliced as veneers and used decoratively in furniture, custom cabinetry and for paneling.

Maple, Hard

Other names: Sugar Maple, Black Maple, Rock Maple

Wood Description:
The creamy white sapwood of the hard maple is often tinged with pink or pale reddish-brown tones. The heartwood is redder in color, varying from light to dark reddish-brown. The growth rings produce a very fine brown line throughout the wood. The grain of hard maple is tight with a fine texture, and usually straight, although several variations of "curly" or burled grain, which are most desirable, can be found in some hard maples. The burled wood resembles small circular or elliptical figures, that also are called "bird's-eye," and when more irregular in nature are called "fiddleback."

Origin:
The hard maple is a cold-climate tree, and grows abundantly in the northeastern United States, middle Atlantic states, and throughout the Great Lakes region, as well as in areas of eastern Canada. It is a popular and abundant American hardwood.

Comments:
Hard maple is a popular choice for furniture, cabinets, countertops and musical instruments. Hard maple is used for cutting boards, bowls and other kitchenware, since it carries no taste and holds up well.

Maple, Soft

Other names: Red Maple, Silver Maple, Big Leaf Maple

Wood Description:
The sapwood of soft maple varies in color from creamy white to grayish-white, and is sometimes marked with darker colored pith flecks. Although not as rich as hard maple, the heartwood is similar in color, with reddish-brown tones ranging from light to dark. The growth rings of soft maple are not as distinct as those of hard maple. Soft maple is straight-grained, without the exceptional burled or "bird's-eye" characteristics that can be found in hard maple.

Origin:
The soft maple grows throughout the eastern United States, for the most part, with some species thriving in the Pacific Northwest (Oregon, Washington state), as well as areas of western Canada. Soft maple is the fastest regenerating hardwood in North America.

Comments:
We sell northern soft maple, which has a fine, white texture grain pattern and smooth finish. Appalachian and Michigan soft maple tends to be slightly tanner in color. Appalachian soft maple also has a more pronounced heartwood.

Soft maple is commonly used in furniture, kitchen cabinets, turnings, plywood veneers and decorative veneers. Its staining properties and attractive appearance make it a popular substitute for cherry. Soft maple machines very well and is good for joinery.

Maple, Quilted

Other name: Quilted Big Leaf Maple

Wood Description:
One of the world's most beautiful woods, quilt or quilted maple is a type of maple in which the growth of the wood fibers is distorted, producing a beautiful wavy figure or "quilted" look, similar to ripples on water. Trees containing quilted figure are exceedingly rare. Undulating and uninterrupted waves on the bark typically indicate a maple log with figure. A medium to hard/dense wood with a fine grain, the sapwood is a creamy white with a light brown heartwood.

Origin:
Quilted maple is found throughout the Pacific Northwest, including Oregon, Washington State and British Columbia.

Comments:
Quilted maple is used most often in fine furniture, as veneer, for automotive dashboards and in the manufacturing of musical instruments.

Oak, English

Other names: European Oak, White Oak, English Brown Oak

Wood Description:
The heartwood is a pale yellow-brown or "biscuit" color, that may range to light tan or deep brown in color. It is usually straight grained, but cross-grained material can occur in slow growing trees. English oak displays conspicuous growth rings and has a coarse texture. The sapwood is easily distinguished from the heartwood, though similar in color. Like many other oaks, broad rays, distinctive growth rings and a silvery grain produce an attractive figure when quarter-sawn. English "brown" oak took on its color from the beef-steak fungus. The color cannot be reproduced with stains, and is considered highly desirable.

Origin:
This species occurs primarily in Great Britain, France, Poland and other areas of Europe.

Comments:
English oak is used in furniture, joinery and flooring. Its resistance to the passage of liquids makes it an ideal material for whiskey, cognac and sherry casks. English oak stained by the beef-steak fungus, often called brown oak, is extremely desirable and is converted into decorative veneers for use in furniture and paneling.

Oak, Red

Wood Description:
Red oak sapwood ranges from white to light brown in color. Most varieties of red oak heartwood will have golden, reddish tones, although some display deeper, reddish-brown tones. The wood has a course texture with a straight grain and shorter rays than white oak.

Origin:
Red oak grows throughout the eastern United States up through areas of eastern Canada. Oaks are the most abundant American hardwood species, with red oak more prevalent than white oak.

Comments:
We specialize in Appalachian red oak. Premium red oak timber can be found in West Virginia, western North Carolina, and eastern Kentucky. We have 50 years of drying experience and are highly selective in sourcing premium Appalachian stock. At various locations we also stock southern and northern red oak, depending on application and color requirements.

Red oak is a popular wood for furniture, and is also used widely in cabinetry, flooring, architectural millwork, mouldings, paneling and caskets.

Oak, White

Wood Description:
The sapwood of white oak is light in color and can range from a pale yellow-brown to a grayish-white. The heartwood may be either light brown in color, or a darker brown with deep, golden tones. The distinctive coarse texture and straight grain has longer rays than red oak. Fasting-growing oaks, such as those grown in the South, produce wider, more prominent growth rings.

Origin:
White oak grows abundantly throughout the eastern United States, from the South, up through the Appalachian area, northward into areas of southeastern Canada. Oak is the most widely available American hardwood, with white oak second to red oak in abundance.

Comments:
Historically, higher grade white oak lumber often is exported to Europe or Asia. American fashion tastes tends to lean toward red oak, although premium white oak is more uniform in color. White oak is often found in high-end architectural projects.

White oak is a popular selection for flooring, stair parts, architectural millwork, pulpits and pews, furniture and cabinetry. Its water-resistant characteristics have made it a preferred choice for ship timbers, barrels and casks. White oak is also widely used for paneling and decorative veneers.

Obeche

Other names: Wawa, Arere, Ayous, Samba

Wood Description:

Obeche is creamy-white to pale straw color with no demarcation between the sapwood and heartwood. It is a light wood with a moderately fine and even texture. In large logs, wood from the center of the log is inclined to be brittle (brittleheart). The grain is usually interlocked, which provides a faint stripe on quarter-sawn wood.

Origin:

Obeche grows throughout West and Central Africa in a zone from Guinea east to the Central African Republic, and south to Gabon and the Congo.

Comments:

Obeche is often rotary cut into constructional veneer for plywood core stock purposes and as a backing veneer. It is used extensively where durability and strength are unimportant, in applications such as drawer slides, interior rails and cabinet framing. Some logs are sliced for decorative veneer.

Padauk (African)

Other names: Camwood, Barwood

Wood Description:

African padauk has a vividly colored heartwood, that when freshly cut, appears deep red. After exposure, it turns to a deep purple-brown with red streaks. The distinct sapwood ranges in color from white to yellowish-brown. It has a lustrous surface and moderately coarse texture. The grain can be straight or interlocked.

Origin:

Padouk is found in central and tropical West Africa, extending from southwestern Nigeria to Zaire.

Comments:

Padauk is used in high-end joinery, furniture and cabinet making. It also is used for fine turnery, including decorative tool and knife handles. It can be sliced and peeled for decorative veneers.

Heart Pine

Other names: Longleaf Pine, Pitch Pine, American Heart Pine

Wood Description:

The reclaimed timbers referred to as heart pine have a color and beauty unique to its age. The wood presents a dense, straight grain and exuberant color ranging from light honey to dark reddish-brown, with a rich patina acquired with age. Heart pine, in its original state, came from old-growth longleaf pines as much as 170' tall that took 150 to 400 years to mature. These extremely large pines provided for the production of boards, beams and ship hulls of great width and girth from single trees.

Origin:

The original growth region for heart pine was from Virginia to central Florida, and westward along the Gulf Coast, as far west as Texas. Today, reclaimed timbers are gathered from around the country from old buildings and warehouses.

Comments:
Since no standard grading rules exists, buyer beware. Sometimes new Caribbean pine is sold as heart pine. Today southern pine found in the U.S. is genetically improved to be fast growing, thus true heart pine is no longer found in commercial forests.

The durability of heart pine, combined with its beauty, has made it a popular choice for architectural cabinetry, flooring, paneling and wainscoting. It also is used for stair parts and custom millwork. Quality varies greatly, so check with your representative for samples.

Poplar

Other names: Yellow Poplar, Tulip Poplar.

Wood Description:
Poplar sapwood ranges in color from creamy white, to grayish-white, to white with a yellowish cast, and is sometimes striped. The heartwood, which is usually tan, also presents a wide variety of tones, sometimes with a slightly greenish cast, and occasionally with dark purplish streaks. Poplar offers a uniform, fine texture and is light to medium in weight with a straight grain.

Origin:
Poplar grows throughout the East from southern New England to the Gulf of Mexico and represents about 20 percent of the timber volume and lumber production in the region.

Comments:
Poplar is the number one species we offer. Specializing in Appalachian lumber, we ship poplar worldwide and stock all thicknesses and grades. Poplar gained wide usage for furniture framing and drawers in the early part of the twentieth century. Today, it often is used for mouldings and millwork, boxes, pallets and shipping crates. Poplar also is used in plywood veneers and core stock. Due to its competitive pricing, poplar often is used in paint-grade applications.

Purpleheart

Other names: Violetwood, Ameranth

Wood Description:
The heartwood is a dull brown when freshly cut, becoming deep purple on exposure. After extended exposure, the wood deepens in color to a rich brownish-red. The off-white sapwood is sharply demarcated from the heartwood. The texture ranges from medium to fine with a medium to high surface luster. The grain may be straight, but is sometimes interlocked and wavy or irregular.

Origin:
Most purpleheart comes from the Guianas and from the Amazon region of Brazil. Other species are found throughout Mexico and Central America.

Comments:
Purpleheart is popular for turnery, high-end furniture making, and decorative inlay and veneer. It is very dense and has a high blunting effect on cutting blades.

Red Grandis (Eucalyptus)

Other names: Red Grandis, Flooded Gum, Rose Gum, Scrub Gum, Grandis Gum, Saligna Gum, Sydney Blue Gum, Kalitunsi

Wood Description:

Eucalyptus is a fast-growing, sustainable hardwood comparable to teak or cherry in strength and durability and is a viable alternative to mahogany and other tropical hardwoods. The sapwood is light brown, while the heartwood ranges from pale pinkish to reddish-brown. Eucalyptus is uniform in color and texture with a dense, straight, interlocked grain. Its smooth finish and honey color make it an excellent choice for flooring and outdoor furniture.

Origin:

Eucalyptus is native to Australia, but also grows throughout tropical South America in areas including Brazil, Uruguay, Argentina and Chile.

Comments:

The smooth finish and honey color of eucalyptus make it an excellent choice for flooring and outdoor furniture.

Red Gum

Other names: American Red Gum, Sweet Gum, Satin Walnut

Wood Description:

Red gum sapwood is a light creamy-white color, sometimes with pink tinges. It sharply contrasts with the heartwood, which can have irregular darker streaks that can range in color from pinkish-brown to reddish-brown with darker streaks, and sometimes has a grayish hue. The grain is often irregular with a fine texture.

Origin:

Red gum is found throughout the central and southern United States, from the Ohio River Valley south to the Gulf of Mexico. It grows best on river flood plains from Louisiana through Alabama, but can also be found along the East Coast as far north as Connecticut.

Comments:

Red gum is a popular choice for crates, pallets, furniture, cabinets, interior trim and interior woodwork. It is also used in plywood, and, because of its strong contrast in color from sapwood to hardwood, is also popular as veneer.

Rosewood, Honduras

Other name: Nogaed

Wood Description:

Heartwood varies from brown to deep purple varying from light to dark in color. Sapwood is a contrasting light or cream blonde color.

Origin:

Honduras rosewood is found mainly in Belize (British Honduras) and grows in river areas throughout Central America.

Working Properties:

Since Honduras rosewood is very hard, it is moderately difficult to saw and machine, and creates a blunting effect on tools. Pre-boring is necessary for nailing. Since the wood is sometimes very oily, it can be difficult to produce a good, even finish.

Comments:
Since Honduras rosewood turns well, it is used often for knife handles and piano legs. Other uses include percussion bars of xylophones, and fingerboards for banjoes, guitars and mandolins. It is also used in fine furniture and cabinets, with highly figured logs sliced for decorative veneers and inlay work.

Sapele

Other names: Mogano Sapeli, Aboudikrou

Origin:
Sapele is found in lower tropical rain forests and tropical semi-evergreen rain forests throughout Africa, including West Africa, Liberia, the Ivory Coast, Ghana, Togo, Nigeria, Cameroon, Gabon, the Congo, Zaire and Angola.

Wood Description:
The pink to dark red heartwood of sapele darkens quickly to a red-brown. Some heartwoods take on reddish tones similar to mahogany and deepen over time to a dark reddish-brown with warm overtones. Sapele is sometimes marked by a much-desired ribbon figure on quartered surfaces

Comments:
Sapele is used widely for cabinetry, architectural mouldings and furniture making. Due to the recent increased cost of Honduras mahogany, sapele has been found to be a suitable and more economical substitute. The pommele figuring of sapele is often uniform in logs for up to 12 feet, producing spectacular veneer for furniture, paneling, parquet flooring and doors. Sapele is also used in marquetry.

Shedua

Other names: Olive Walnut, Amazakoue, Ovangkol, Mosambique

Wood Description:
Shedua sapwood is very pale with clear demarcations. A variety of colors can be found in the heartwood that includes pink, vivid red, or red-brown with purple veining. On exposure, the veining becomes less conspicuous, and the deep colors fade to yellow or medium brown with a reddish tint. Shedua has a fine, even texture with a straight or interlocked grain. Shedua from the Gabon area often has a wavy grain, and is sometimes highly figured, producing a decorative appearance when flat- and quarter-sawn.

Origin:
Shedua grows in Equatorial Africa, from Cameroon and Gabon to southeast Nigeria, to the Congo region, and to some extent, in Zaire.

Comments:
Shedua is often used for knife and brush handles. The most popular use of shedua is as veneers, especially the highly figured logs. Decorative veneers are used on furniture and cabinets and for paneling. The figured veneers are especially desirable for furniture inlays.

Sipo

Other names: Kalungi, Liboyo, Mufumbi, Okeong, Utile

Wood Description:

An African hardwood which resembles sapele in appearance the sipo sapwood is light brown in color. The heartwood is pinkish-brown when first cut, and darkens to a rich red or purple-brown with exposure. The sapwood is reported to be up to 2 inches (0.50 cm) wide and clearly demarcated from the heartwood. The attractive grain is usually broadly interlocked, producing a ribbon figure or a wide, often irregular stripe on quarter-sawn surfaces.

Origin:

Sipo grows in the high forests of tropical west and east Africa, specifically in Sierra Leone, Cameroon, Liberia, Gabon, Uganda, Equatorial Guinea, Liberia, Nigeria, Zaire, Angola, the Ivory Coast and Ghana.

Comments:

Sipo is often used as a substitute for mahogany and is commonly used in furniture, cabinets, joinery, paneling and stair parts. It is a popular material for decorative plywood and decorative veneer.

Sycamore, English or European

Other names: European Sycamore, Harewood, Sycamore Plane, Sycamore, Great Maple, Sycamore Maple

Wood Description:

The sapwood of English sycamore is a light-colored creamy white which varies to light yellowish in color. The heartwood ranges in color from light to dark brown. While most often straight-grained, the figured logs of this exotic hardwood are highly valued. With a consistent fine, silky texture, English sycamore is considered the finest light-colored wood in the world.

Origin:

English sycamore is a species of maple native to central Europe and southwestern Asia. It is found throughout central Europe, including England, France, Poland, northern Spain, northern Turkey and parts of Caucasus.

Comments:

An excellent tone wood, English sycamore is used to make violins, cellos, basses, and violas. It is also used in fine furniture, cabinets, architectural millwork and flooring, and is an extremely desirable wood for veneer.

Teak, Genuine

Wood Description:

Most teak is a rich, golden brown in color, but also may vary from rich brown to a deep, chocolate brown with dark, almost black, markings. The grain may be either straight or wavy, with conspicuous growth rings. It has a coarse texture and oily feel, as well as a leather-like odor.

Origin:

Teak grows in Burma, Thailand and India. India provides the largest commercial resource. It also has been planted in other areas around the world, including East and West Africa and the Caribbean.

Comments:
Teak most often is used in ship building and decking. Since it is acid resistant, it is used in laboratories as bench tops and chemical vats. It is also used in furniture and cabinet making and in garden furniture.

Tulipwood

Other names: Brazilian Tulipwood, Pinkwood

Wood Description:
The sapwood of tulipwood ranges in color from creamy to solid yellow. The vivid heartwood is straw-colored to pink-yellow, marked with irregular streaks of yellow, rose, pink and violet. The colors fade after extended exposure. The wood is lustrous, and has a rather fine texture with a grain that can be straight or, more often, irregular.

Origin:
Tulipwood is native to tropical South America, especially northeastern Brazil, and also can be found in Colombia, Guyana and Venezuela.

Comments:
Tulipwood most often is used decoratively as veneers for inlay and marquetry. It is also very popular among wood turners.

Walnut

Other names: Black Walnut, Nogal

Wood Description:
Walnut sapwood is very creamy white in color, while the heartwood, which ranges in color from light to a rich, dark brown, and matures to an almost purplish-black hue. Walnut often carries characteristically dark brown or purplish streaks. Walnut has a coarse, yet uniform texture, and while usually straight-grained, it is sometimes wavy or curly. This species produces a large variety of figure types.

Origin:
The walnut tree grows widely throughout North America along areas of the East Coast from Florida to Maine, including Georgia, South Carolina, New Jersey, and New York, and in the mid-section of the country, including areas of eastern Texas, Alabama, Oklahoma, Kansas, Nebraska and southern Minnesota and South Dakota.

Comments:
In order to minimize the color contrast of sapwood, walnut is often steamed at the mill. NHLA rules for walnut are substantially different than standard NHLA rules and allow for smaller cuttings.

Walnut is a popular wood for high-end furniture and cabinets, especially in combination with lighter woods to produce decorative effects. In the United States, it is the standard wood for rifle butts and gun stocks. Walnut is often used in furniture veneers.

Walnut, Peruvian

Other names: South American Walnut, Nogal

Wood Description:

Peruvian walnut presents a rich, dark brown heartwood with a blackish stripe that creates a desirable figure. It has a rather coarse texture, and while usually straight-grained, it is sometimes wavy or curly.

Origin:

The Peruvian walnut tree grows throughout South America, including Peru, Columbia, Ecuador, Venezuela and Argentina. It also grows in areas of Mexico.

Comments:

Peruvian walnut is a popular wood for high-end furniture and cabinets, especially in combination with lighter woods to produce decorative effects. In the United States, it is the standard wood for rifle butts and gun stocks. Figured woods are sliced for veneers for paneling, cabinets and marquetry.

Wenge

Wood Description:

Wenge sapwood in pale white to yellow in color, and clearly demarcated from the heartwood. The heartwood is dark, dark brown, bordering on black. Alternating layers of light and dark wood and white bands marked with black veins create a decorative figure. The dark heartwood is highly coveted. The texture is somewhat coarse with a fairly straight grain.

Origin:

Wenge occurs naturally in the forests of Zaire, Gabon and the Cameroon Republic, as well as the southern regions of Tanzania, and Mozambique. It is also found in the Congo.

Comments:

Wenge often is used in flooring and general construction work. When sliced as decorative veneers, it is used for paneling, cabinets and marquetry.

Yellowheart

Other names: Yellow Wood, West Indian Satinwood

Wood Description:

The sapwood of yellowheart ranges from creamy white to light yellow, and is not clearly differentiated from the heartwood. The heartwood is creamy to golden yellow and darkens with exposure to a light golden orange/tan color. It has a fine, even texture with high luster and interlocked or irregular grain with a roey, mottled figure.

Origin:

Yellowheart is a tropical wood commonly found in the Caribbean Islands of Cuba, Jamaica, Hispaniola, Puerto Rico, Haiti and the Dominican Republic. It also occurs in the lower Florida Keys, Bermuda, the Bahamas and Brazil.

Comments:

Yellowheart is used only in small quantities, and usually as decorative veneers for inlay and marquetry in fine furniture and cabinetry.

Zebrawood

Other names: African Zebrawood, Zebrano

Wood Description:

Zebrawood is known for its highly figured heartwood. The heartwood is straw-like in color and distinctively marked with narrow veining or "streaks" of color ranging from dark brown to almost black. These streaks give the heartwood a zebra-stripe appearance. The sapwood is whitish in color, and virtually without feature. The wavy, interlocked grain produces a ribbon figure. The texture ranges from medium to coarse and has a high luster surface.

Origin:

Zebrawood is a tropical African hardwood that grows in Gabon, the Cameroon Republic, and the Congo.

Comments:

The decorative nature of this highly figured wood makes it a popular wood for high-quality veneers. Quarter-sliced veneers are used for furniture inlays, cross banding and marquetry. It also is used to produce decorative millwork.

GLOSSARY

Air-drying
Drying by exposure to air; usually the first stage of the drying process, before lumber is placed in a dry kiln.

American-Style Cabinet
See Face Frame Cabinet

Backed Veneer
Veneer that is pre-assembled with a backing or substrate, such as a special paper, laminate, backing veneer or other material. Backers make the veneer easier to handle.

Back
The side of a plywood panel that is of poorer quality. This usually refers to plywood panels, which have a face of one grade (higher quality) and a back of a lower grade.

Balanced Construction
Panel (or ply) placement, especially in plywood, where veneers are glued together such that the grain direction in adjacent plies are at right angles to one another, reducing the tendency to shrink and swell with moisture. Plies may consist of a single veneer, particleboard, medium-density fiberboard, or hardboard.

Balanced Match
Two or more veneer components or leaves of equal size matched up to create a single face.

Bark Pocket
A blemish in wood caused by an opening between annual growth rings that contains bark and appears as a dark streak or streaks in the wood or lumber.

Bird's Eye
Characterized by small knots appearing as circles or ovals unevenly scattered throughout the wood. The appearance resembles the shape of a bird's-eye. This type of figure is found almost exclusively in hard maple (sugar maple) and is highlighted when rotary cut.

Block Mottle Figure
An irregular form of cross figuring that runs over the complete surface of the veneer. Broad cross markings, broken by variations in strip, produce a block or patchy effect, known as block mottle.

Block Tally
A unit tally done by estimating the average width of lumber per coarse, multiplied by the number of courses, then multiplied by the average length of the lumber in the unit (with the length rounded down to the nearest whole foot).

Book
The most commonly used term for a bundle of veneer, especially by carpenters. This term comes from the veneer leaves following one after the other like pages in a book.

Book Match
A book match is the most popular veneer matching method. In book matching, every other piece of veneer from a flitch is turned over so that adjacent leaves are "opened" like the pages of a book. This creates a face with matching occurring at the spliced joints and results in a repeating, symmetrical grain pattern.

Board-foot/Board-feet/bd-ft
An abbreviation for the unit of measure "board foot" or feet. Each unit is equivalent to a board one foot long by one inch thick by 12 inches wide (144 cubic inches). All measurements are nominal.

Burl (or Burr) Veneer
Veneer obtained from rare woody outgrowths appearing on trees around grafts or injuries. This produces an appearance of a close arrangement of many small eyes or knots intermingled with distorted grain. The rare and unusual patterns of burls make them in high demand and are also more expensive, due to the small size of the veneer and scarcity. Differentiation is generally made between burl or burr growth above ground (elm, ash, oak) and root burl or burr growth that develops below ground in the root (Californian walnut, madrona, vavone, myrtle).

Butt- or End-Match
Butt- or end-matching refers to a technique where the veneer is joined end-to-end and side-to-side. This technique is often used to extend the appearance length of available veneers for wall panels and long conference tables. Leaves are individually book- or slip-matched, first end-to-end and then side-to-side, alternating end and side. It is also a popular method for matching burls, crotches, and highly decorative veneers.

Cant
A large sawn section that is cut from the center of a log and squared on two or more sides. Lumber or veneers are then cut from the "cant."

Cathedral
A much sought-after structure in crown-cut bundles, cathedral patterns are considered to be very elegant. The grain appearance is characterized by a series of stacked or inverted "Vs" forming an arch-like cathedral pattern.

Center Match
Each face has an even number of veneer sheets, but the widths are not necessarily the same. The center joint will be in the middle of the panel.

Chatter
A wavy condition across the width of a panel caused by sanding. These markings are parallel to one another, between 1 / 4" and 1 / 2 " apart, and perpendicular to the sander grit markings. Sometimes they can be felt but always can be seen.

Comb Grain
A quality of rift cut veneer with exceptionally straight grain and closely spaced growth increments.

Composite Veneer
Natural wood that has been re-constituted. The wood used in composite veneers is harvested from fast-growing trees. The logs are cut (sliced to veneer), dyed and then re-glued in different molds to create the "grain" pattern. The way in which the composite veneers are re-glued and re-sliced determines the grain and figures.

Concealed Hinge
Hinges designed to function behind the door or panel so that all parts are hidden within the cabinet, producing clean lines and a professional appearance.

Concentration Yard
A large lumber storage and loading facility maintained by a wholesale business that buys and sells green and kiln-dried lumber. The yard usually operates dry kilns and offers similar services as a sawmill, but does not saw lumber.

Core
Also referred to as "center" or "substrate." The innermost portion of plywood composed of veneer, fiberboard, particleboard, or a combination of the above.

Crook
A lumber defect affecting the straightness of the board when viewed end-to-end along the edge, or narrow face.

Crossfire
This term is used to describe all of the various figure marks running perpendicular to the veneer grain. In some wood species the crossfire is a contrast of color, while others appear as an irregularity of the grain creating the illusion of horizontal marks

Cross Grain
Cross grain may be either a diagonal or spiral grain, or a combination of the two either as a result of sawing, or as a result of inconsistent grain direction during growth. When occurring naturally, this can result in wood with interesting figure that is hard to work and finish.

Crotch
This type of figure occurs where limbs emerge from the tree trunk. The high amounts of fiber distortion at this junction results in a feather or flame pattern appearance. Mahogany is the most common specie with this type of figuring.

Cup
A lumber defect referring to a "cup" or "concave" deviation (dip) from a straight line drawn edge-to-edge across the face of a board. (Opposite of crowning.)

Cup Distance
Distance from the edge of the cabinet door to the edge of the hinge cup hole.

Curl
See Crotch

Curly
The term used for a wavy or curly figuring produced by distorted fiber growth that reflects light differently, creating varied tones of color within the wood grain. Most commonly found in walnut and maple veneers.

Deciduous
Deciduous trees are those usually having broad leaves that are lost each year in the fall. Most deciduous trees are hardwoods.

Deflection
Downward bending of a board between supports when a load is applied, such as a shelf or floor panel. Deflection is usually measured in inches and is greater in the center of the span than on the outer edges.

Density
The weight of a panel as measured in pounds per cubic foot.

Delaminating
The separation of the panel's face layer from the core, or a laminate from a substrate, or separation of the inner plies, usually from failure of the adhesive bond.

Diamond Match (Box Match)
Four equal pieces of veneer are cut diagonally to the usually straight grain. These are matched to create a diamond pattern. In a reverse diamond match, the pieces are matched so that the grain direction runs toward the middle.

Distribution Yard
A large storage and shipment yard stocking lumber and other building materials.

Door Length
Log and veneer lengths between 6'8" and 8' required by the door industry.

Dry Kiln
A chamber in which lumber is dried, most commonly by controlling humidity, temperature, and air circulation.

Dye
A process whereby color is infused into veneers either in a vat or with high pressure.

Edgebanding
Strips of veneer joined continuously head-on to be applied onto the sides of a substrate as trim or a finishing method.

End-Matched (Butt-Matched)
Often called butt-matched, the veneers are matched as described for book-matched veneers. Butt- or end-matching refers to a technique where the veneer is joined end-to-end and side-to-side. This is sometimes used when the veneer is not long enough to cover the desired panel height. It is also a popular method for burls, crotches, and highly decorative veneers. Quite often, veneers are both book-matched and end-matched, which is called a four-way match.

End Splits
Separations of wood fiber completely through the thickness, at the end of a board.

Equilibrium Moisture Content
The moisture content at which lumber stabilizes when left in an environment for a length of time. It is the level at which the moisture in a board is equal to the moisture in the surrounding air.

Equalizing
One of the final stages in the kiln-drying process, designed to bring all the boards in a kiln charge to the same moisture content.

European-Style Cabinet
See Frameless Cabinet

Face
The better side of any panel where the outer plies are of different veneer grades. Also, either side of a panel in which there is no difference in veneer grades.

Face-Frame Cabinet
A cabinet design where the exposed edges of the panels are covered with standard 1" x 2" solid wood facing, also known as face frame. Often referred to as American-style cabinets.

Fiddleback
A term describing a consistent ripple figure running across the grain. Fiddleback is not commonly found, but occasionally occurs in mahogany, maple, English sycamore and anegre. The term fiddleback comes from the veneer's popularity in making violin backs.

Figure
The pattern produced in a wood surface by annual growth rings, rays, knots and deviations from natural grains, such as interlocked and wavy grain, and irregular coloration.

Flake (Fleck)
The typical figuring of wood when the pithrays are cut across, i.e. at an angle of 180 degrees when slicing. This is strongly pronounced, particularly in oak. They are generally considered as inferior veneers, unless from brown oak, silky oak or plane, for example, where this figuring is in special demand.

Flat Cut
This is the cutting/slicing method most often used to produce veneers for high quality architectural woodworking. Cutting is done parallel to a line through the center of the log. A combination of cathedral and straight grain patterns result, with a natural progression of patterns from leaf to leaf.

Flitch
A thick section of a log, usually from the outside, higher-value portion of the log, cut on at least two sides. A flitch is usually intended for further remanufacturing into veneer, millwork, or cabinetry.

Foils
Cellulose papers weighing between 40 and 140 grams per square meter, untreated. The papers may be impregnated with melamine, thermoplastic resins, or left untreated.

Four-Piece Match
Special method used for burl veneers to produce highly decorative surfaces and patterns. Four veneer leaves in succession are turned twice and folded up once.

Frameless Cabinet
A cabinet design where the exposed edges of the panels are not covered by a face frame. Often referred to as European-style cabinets.

FSC
FSC is the acronym for the Forest Stewardship Council. The purpose of the council is to coordinate the development of responsible forest management standards throughout the world and to provide public information about certification and FSC. The FSC standards represent the world's strongest system for guiding forest management toward sustainable outcomes. Products bearing the FSC logo, which guarantees that the wood has been harvested from a certified well-managed forest, are available across the world from a variety of mills, manufacturers, and distributors, including Hardwoods, Incorporated.

Gang Rip
A manufacturing term meaning to cut a piece of lumber into numerous smaller pieces, in just one pass through a multiple-blade saw.

Grain
The size, alignment, quality and color of wood fibers in a piece of lumber (not clearly defined within the industry). Usually, it refers to the direction of wood fiber growth, as in: straight grain, spiral grain, or cross grain.

Green Lumber
Freshly cut lumber that has been recently sawn and has not had time to dry, with a moisture content in excess of 30%.

Gross- (or Green-) Measured Tally
A term for lumber measured (for volume) before being kiln dried.

Gum Streaks
A term for a lumber defect characterized by a concentration of gum in the wood fibers. These streaks usually result from some injury to the sapwood, such as a bird peck.

Half-Round Cut
A combination of rotary and plain cut. Segments, or flitches, of a log are mounted off center on the lathe resulting in a cut slightly across the annular growth rings. This produces figures characteristic of both rotary- and plain-sliced veneers. This is used primarily to accentuate the grain in various woods such as in burls, or Bird's-Eye maple, or to gain a wider width on a cathedral on small dimension logs.

Hardwood Plywood
Composed mostly of inner plies peeled from fir, poplar, lauan or other species of either soft or hardwood, only the face and back panels are pure hardwood veneers of 1/30th to 1/40th or less of an inch thick.

Heart
The term used for the core wood area in veneer, which is different in color from the remaining part of the veneer leaf.

Heartwood
The center portion of a tree consisting of mature wood that has stopped growing. It is between the center (pith) and the sapwood. Heartwood is generally harder and darker than the sapwood or the growing outer portion of the tree.

Hit-or-Miss
Lumber that has been surfaced (hit) but still contains areas of skip (miss). The areas of skip dressing are those parts of the board too thin to surface at the hit-or-miss thickness.

Hole-Line Drilling System
A system that precisely bores multiple holes simultaneously using a machine with boring bits of the same diameter arranged in a straight line. It's often used for cabinets with adjustable shelves or mass-produced cabinet systems.

Honeycomb
A drying defect characterized by boards that appear fine on the outside but that internally, contain serious voids caused by grain separation. This is a result of lumber that is dried too rapidly.

HPL
High-pressure laminate. A sheet material formed from multiple layers of kraft paper saturated with phenolic resin, a decorative layer of paper saturated with melamine resin, and a very thin top sheet of paper heavily saturated with a melamine resin, then fused together in the hot press under high temperature and pressure to produce a stiff plastic sheet.

Inset
A method of installing cabinet doors so that they are installed flush across the face of the cabinet.

Kerf
A slot made by a saw blade. Kerf also refers to the width of the saw cut.

Kiln-Dried
Describes lumber that has been dried in a kiln with artificial heat, usually to a moisture content of 6-8%.

Knot
A marking or blemish left in wood from the place where a branch has grown out of the heartwood.

Laminate
See HPL and LPL.

Leaf
A sliced layer of a veneer flitch that when joined with other leaves of veneer forms a veneer sheet.

LEED
Developed by the U.S. Green Building Council, the acronym LEED stands for Leadership in Energy and Environmental Design. It is the nationally accepted certification program for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. For in-depth details, go to www.usgbc.org.

Live Sample
Single sheets of veneer pulled out of a log to represent the whole log. (Our live samples are sent for selection, and those not chosen must be returned or a re-sampling charge is assessed.)

Loose Side
In knife-cut veneer, that side of the sheet that was in contact with the knife as the veneer was being cut. The loose side contains cutting checks (lathe checks) where the knife's edge and the wood made contact.

LPL
Low-pressure laminate. A preprinted or solid-color decorative paper that has been saturated with a resin. Under heat and pressure, it bonds to a board surface without need for additional adhesive.

Matching
Joining veneers in a sequence according to their natural sequential order or to obtain specific dimensions and a pattern desired.

MDF
An acronym for medium-density fiberboard, MDF is an engineered wood product formed by breaking down softwood into wood fibers and combining the fibers with waxes or resins. The panels are formed by applying high temperatures and pressure. MDF is denser than particleboard and is most often used as a substrate or in applications similar to plywood. It is economically priced and easily machined.

Melamine
A laminate that derives its name from the melamine resin system used to saturate the paper laminate and adhere it to the substrate.

Millwork
A term for lumber that has been specially manufactured by a plant or mill. It is planed and/or run to a pattern, and refers to items such as moulding and trim, doors and windows and their frames, staircases, cabinets, and other specialty items.

Modulus of Elasticity (MOE)
A measure of a board's resistance to deflection or sagging when loaded as a simple beam, value-stated in pounds per square inch (psi).

Modulus of Rupture (MOR)
An index of the maximum breaking strength of a board when loaded as a simple beam, value-stated in pounds per square inch (psi).

Moisture Content (M.C.)
The amount of water in wood expressed, as a percentage of dry weight.

Mottle
Mottle is the intermingling of broken cross markings with stripe figure. Block mottle involves broad cross markings, producing a patch effect that is commonly found in makore. Bee's wing mottle is a very small, fine figure and often occurs in sapele, satinwood and black bean.

Moulding
Carved, shaped or "milled" ornamental strip used to decorate a surface, often used to accent or emphasize the ornamentation of a structure and to conceal surface or angle joints; a decorative element that contours or outlines the edges and surfaces on a projection or cavity, such as a cornice, architrave, capital, arch, base, or jamb.

Net-Measured Tally
The weight of the water in wood, expressed as a percentage of the weight of kiln-dried lumber.

Overlay
Overlay refers to the amount (the measurement) that a cabinet door covers the panel edge or face frame of a cabinet.

Paint Grade
A non-rules book grade with all the attributes of "standard" grades. This wood grade refers to wood products suitable for painting that would not appear attractive if stained because of minor defects that would be highlighted by stain.

Paneling
In architecture and design, paneling refers to a decorative treatment of walls, ceilings, doors, and furniture consisting of a series of wide, thin sheets of wood, called panels, which may be framed together by narrower, thicker strips of wood.

Peanut Shell
A quilted or blistered figure that incorporates a dominant grain or yearring pattern. Mostly found in tamo or bubinga.

Phenolic
A phenolic sheet is a hard, dense material made by applying heat and pressure to layers of paper, glass or cotton impregnated with synthetic thermosetting resins. When heat and pressure are applied to the layers, a chemical reaction (polymerization) transforms the layers into a high-pressure industrial laminated plastic.

Pin Knot
According to the rules book, a knot not exceeding 1/8" in average diameter.

Plain Slicing
See Flat Cut.

Plain Sawn
A sawmill term for lumber sawn approximately perpendicular to the radius of the log. It produces lumber called "flat grain" lumber.

Planer
A piece of sawmill equipment that planes (surfaces) rough lumber, leaving it smooth and uniform in size.

Plywood
Any combination of veneers, lumber, core, paper or other material joined together with adhesive to create a single panel. Plywood can be of any thickness. Standards are 1/8", 1/4", 1/2", 3/4", or 1". Hardwood plywood usually has a hardwood face, core and back.

Pommele
Pommele gets its name from the French word for "apple." The figure resembles small round or oval circles that can overlap each other. Sometimes a log that has larger and more sparsely occurring "apples" can be referred to as blistered.

Proprietary Grade
The term for a grade that is pulled by a lumber manufacturer, but which is not defined in the NHLA Rules book.

Quarter Cut
Quarter cutting/slicing simulates the quarter sawing process of solid lumber, roughly parallel to the radius line through the log segment. As a result, in many species, the individual leaves are narrow. A series of stripes is produced, varying in density and thickness from species to species. "Flake" is a characteristic of this slicing method in red and white oak.

Quarter Sawn
A sawmill term for lumber sawn approximately on the radius of a log with the average inclination not less than 45 degrees. Produces vertical grain, or edge-grain, lumber.

Quilted
This figuring is produced by rotary- or half-round slicing of logs that have a "bumpy" surface. The uneven weaving of the growth rings produces a quilted, three-dimensional effect. Maple and mahogany are species often available with quilted figure.

Random Match
Mismatched leaves are placed next to each other deliberately to give a rustic, natural look. This works especially well with knotty or wormy species.

Ray Flake
See Flake.

Repairs
A patch, shim or filler material inserted and/or glued into veneer or a panel to achieve a sound surface.

Reveal
Measurement of the distance between the back edge of the cabinet door and the side of the cabinet in an inset installation.

Ribbon Stripe
In some woods, principally mahogany, a pattern of wide, unbroken stripes can be obtained. It is produced by cutting on the quarter a log that shows growth rings.

Rift Cut
Rift veneers are produced most often in red and white oak, rarely in other species. Note that rift veneers and rift-sawn solid lumber are produced so differently that a "match" between rift veneers and rift-sawn lumber is highly unlikely. In both cases, the cutting is done slightly off the radius lines, minimizing the "flake" associated with quarter slicing.

Root Burl
See Burl/Burr Veneer.

Rotary Cut
The log is center-mounted on a lathe and "peeled" along the general path of the growth rings, like unwinding a roll of paper, providing a generally bold, random appearance. Rotary cut veneers may vary in width, and matching at veneer joints is extremely difficult. Almost all softwood veneers are cut this way. Except for creating a specific design effect, rotary veneers are the least useful in fine architectural woodwork. Rotary-sliced fine hardwood veneers are used in a limited way, usually for special figure and cut. Careful consideration, specification, and communication are recommended when rotary cut is contemplated.

S2S
Surfaced two sides.

S4S
Surfaced four sides.

Sand-Through
A condition where the face layer has been sanded off, exposing the core. These areas will appear to be darker than other areas of the face. In areas where the face layer has been sanded off, larger particles are exposed.

Sap Stain
Also called blue stain, it is created by a fungus that discolors the sapwood of green lumber as it grows during warm weather.

Sapwood
The wood near the outside of the tree between the heartwood and the bark, which is usually lighter in color than other parts of the log.

Saturated Papers
Decorative surface papers generally weighing between 60 and 130 grams per square meter. These papers are saturated with melamine or polyester resins and partially cured at the point of manufacture. Final curing is done at the time of hot-press lamination.

Seasoning Checks
Also called surfacing checks, these are (usually) small separations along the grain on the face of a board, caused by a variation in shrinkage as the shell dries and shrinks faster than the interior wood.

Shrinkage Factor
A term used to describe the loss in footage as lumber shrinks in size, going from green to kiln-dried. For most hardwood lumber, this factor is about 7%.

Slip-Matched
Veneer components are laid side by side (slipped out in sequence) to form a whole sheet of veneer with a repetitive grain appearance.

Sound Knot
A solid knot that is as hard as the surrounding wood showing no looseness or indication of decay.

Spliced Veneers
Spliced veneers are composed of several pieces of veneer varying in width that are glued together to form a whole sheet. The way they are laid out during composing determines the final look of the veneer.

Straight-Line Ripping (SLR)
The process of edging a board so that it has one entire edge straight and perpendicular to the length.

Sunburst Match (Pie Match)
Consecutive sheets are trimmed into pie shaped pieces and matched in a circular fashion in which the points meet in the center. Mostly used on round, oval or octagonal shaped panels.

Surface Checks
Also called seasoning checks, these are (usually) small separations along the grain on the face of a board that are created as the shell dries and shrinks faster than the interior wood.

Surface Measure
A measure of area (length x width), as opposed to board footage, which is a measure of volume (length x width x thickness).

Tally
The footage, thickness, and size (lengths and sometimes widths) of lumber on a particular shipment or order.

Tight Side
In knife-cut veneer, that side of the sheet that was farthest from the knife as the sheet was being cut containing no cutting checks (lathe checks).

Type Sample
Approximately 8" x 11", a type sample represents a wood specie as a whole. It does not represent a specific log or flitch. Live samples are use to represent a specific log or flitch.

Unbalanced Construction
Warping caused when the individual layers or components of a panel do not respond equally to changes in moisture or humidity.

Veneer
A thin sheet of wood ranging in thickness from 1/8" to 1/100". The standard thickness may vary depending on species.

Warp
Warping refers to an abnormal distortion in the natural orientation of a fiber or material. Warping, which often results from high moisture or from positioning materials in a manner that is not level or flat, leads to bending, curving or twisting in a board, panel or length of wood, rendering the materials unusable.

WHAD
An overlay grade, in which worm holes, bird pecks, and streaks are considered as defects. WHAD is necessary terminology only because of the occasional use of a similar, but more inclusive, grade called WHND (a grade in which worm holes are not a defect).

WHND
An overlay grade in which worm holes, bird pecks, and streaks are not considered as defects in the grade. This grade is most commonly used for soft maple.

Worm Holes, Tracks
Holes or tracks in the wood resulting from an infestation of worms.

Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhesives Bendable Panels Lumber Melamine Hardwood Plywood Architectural Panels Colored Caulk Particle Board Exotic Lumber MDF Veneer Moulding Laminates Hardware Edgeband Adhe