

# ARCHITECTURAL WOOD DOORS

VENEER GUIDELINES



## PLAIN SLICED MAPLE VENEERS

# MAPLE

### NATURAL VARIATIONS

The word natural brings to mind certain connotations like “beauty”, “warmth” and “purity”. Merriam-Webster defines natural as “occurring in conformity with the ordinary course of nature (the genetically controlled qualities of an organism): not marvelous or supernatural”.

Wood is a product of nature, and in some cases, will accentuate and enhance a project design when used in its purest, or natural, state. However, as a product of nature, each wood species has certain intrinsic and industry-acceptable characteristics, which can vary from tree to tree and flitch (half log) to flitch. It is precisely these naturally occurring variations that provide such richness and uniqueness to each project design.

Certain wood species such as natural maple, birch and ash can vary widely in color range, which is why in many cases *select white* is specified so that the sapwood can be accumulated and spliced together to create a consistent color. The photos and information in this brochure are designed to assist you in specifying and receiving the product you envision.



Plain Sliced Natural Maple



Plain Sliced Select White Maple

#### HOW TO SPECIFY:

*Grade A natural veneers, such as maple, birch and ash, may contain sapwood/heartwood combinations, color streaks, spots and color variation from almost white to very dark, according to WDMA I.S. 1-A and AWI quality standards. No backcharges will be accepted for allowable characteristics in natural veneers. To avoid these noticeable color and grain variations, select white veneers must be specified.*

PLAIN SLICED MAPLE CHARACTERISTICS									
Species	Type & Cut	Grade	Sapwood	Heartwood	Color Streaks or Spots	Color Variation	Mineral Streaks	Small Burls or Pin Knots	Cross Bars
Maple	PI-SI Natural	A	Y	Y	Y	Y	S	1 per 3 sq. ft.	S
	PI-SI White	A	Y	N	S	S	S	1 per 3 sq. ft.	S
	PI-SI Red*	A	N	Y	Y	Y	S	1 per 3 sq. ft.	S
Y = Yes    N = No    S = Slight									

*\*Maple heartwood is so low in content that it is rarely available in sufficient quantities for commercial use. Chart information referenced from WDMA I.S. 1-A.*

## PLAIN SLICED BIRCH VENEERS

# BIRCH



Plain Sliced Natural Birch

PLAIN SLICED BIRCH CHARACTERISTICS									
Species	Type & Cut	Grade	Sapwood	Heartwood	Color Streaks or Spots	Color Variation	Mineral Streaks	Small Burls or Pin Knots	Cross Bars
Birch	PI-SI Natural	A	Y	Y	Y	Y	S	1 per 3 sq. ft.	S
	PI-SI White	A	Y	N	S	S	S	1 per 3 sq. ft.	S
	PI-SI Red	A	N	Y	Y	Y	S	1 per 3 sq. ft.	S
Y = Yes    N = No    S = Slight									

Chart information referenced from WDMA I.S. 1-A.



Plain Sliced Birch

#### HOW TO SPECIFY:

Grade A natural veneers, such as maple, birch and ash, may contain sapwood/heartwood combinations, color streaks, spots and color variation from almost white to very dark, according to WDMA I.S. 1-A and AWI quality standards. No backcharges will be accepted for allowable characteristics in natural veneers. To avoid these noticeable color and grain variations, select white veneers must be specified.

PLAIN SLICED BIRCH CHARACTERISTICS									
Species	Type & Cut	Grade	Sapwood	Heartwood	Color Streaks or Spots	Color Variation	Mineral Streaks	Small Burls or Pin Knots	Cross Bars
Birch	PI-SI Natural	A	Y	Y	Y	Y	S	1 per 3 sq. ft.	S
	PI-SI White	A	Y	N	S	S	S	1 per 3 sq. ft.	S
	PI-SI Red	A	N	Y	Y	Y	S	1 per 3 sq. ft.	S
Y = Yes    N = No    S = Slight									

Chart information referenced from WDMA I.S. 1-A.

## WOOD COLOR VARIATIONS

# VARIAT

### WOOD COLOR VARIATIONS AMONG SAME SPECIES

Although maple, birch and ash show the greatest contrasts in color and grain, all wood species can vary from flitch to flitch. Environmental factors such as climate and soil content can make each veneer species exhibit a range of colors and textures.

### PERMAGUARD™ FACTORY FINISH SAMPLES

All Permaguard factory finish samples illustrate basic color, grain fill and gloss level of our catalyzed polyurethane finish system. Wood is a product of nature and will vary in color and grain from tree to tree, or even within the same tree. Some doors will be lighter or darker even though they all receive the same color stain, but it's precisely those natural variations in density and texture that make wood doors so popular. For more information on our VT Color Choices, please refer to our Permaguard Factory Finish brochure.

*All samples submitted for approval use A grade book and running match veneers, unless otherwise specified.*



Plain Sliced Cherry

# VARIATIONS

## RANGE OF COLORS ON SAME SPECIES WITH DIFFERENT FLITCHES

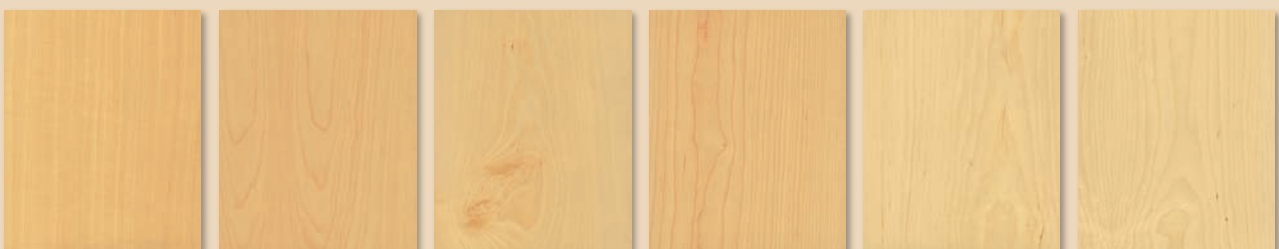
Photos below show range of wood color variation using different flitches of same species. Veneers have clear finish – no stains were added to samples.



Cherry



Red Oak



White Maple

## PREMIUM GRADE

# VENEERS

### WHAT IS A PREMIUM GRADE VENEER?

VT Industries has always maintained the highest quality standards as set forth by the architectural flush wood door industry – meeting or exceeding industry quality standards. The primary quality standards are 1) the Window & Door Manufacturers Association (WDMA) I.S. 1-A; 2) the American Woodwork Institute (AWI) Quality Standards, sections 1300 and 1500; and 3) the Woodwork Institute Manual of Millwork. AWI and Woodwork Institute quality standards are very similar, having changed their standards for premium grade doors in recent years, which has caused some discrepancies with WDMA, the benchmark by which most flush door manufacturers set their standards.



Plain Sliced Red Oak



AWI and the Woodwork Institute require AA grade veneers based on HPVA panel veneer grading tables – book, slip or random match – center balance matched between veneer components for use on their premium grade doors. Nominal minimum width of face components for premium grade veneers is 6" for plain sliced veneer, 3" for quarter sliced veneers, and 6" for rotary cut veneers. AWI defines premium grade veneers as, "The grade specified when the highest degree of control over the quality of workmanship, materials, installation and execution of the design intent is required. Usually reserved for special projects, or feature areas within a project."

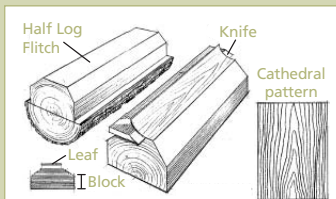
WDMA's standard for premium grade doors requires A grade veneers (as opposed to the optional AA grade) based on HPVA door veneer grading tables – book, slip or random-running, balance or center balance match between veneer components. Nominal minimum width of face components for premium grade veneers is 4" for plain sliced veneers, 3" for quarter sliced veneers and 4" for rotary cut veneers. Minimum width for AA grade is 5" for plain sliced veneers, 3" for quarter sliced veneers and 5" for rotary cut veneers.

The use of AA grade veneers is not only more costly, it can dramatically increase lead times and wastes large amounts of veneer to accumulate the components required to meet the AA grade requirements. VT will provide AA grade veneers when specified, but encourages the use of A grade veneers for environmental responsibility. VT also uses water-based stains and solvent-free sealers, which are much safer for the environment and the individuals who work with them. Our catalyzed polyurethane factory finish is UV-cured to eliminate harmful volatile organic compound (VOC) emissions.



## DECORATIVE VENEER CUTTING

# METHODS

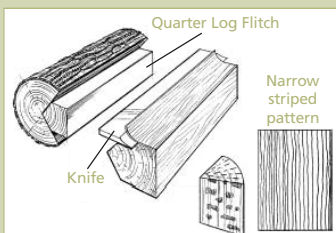


### PLAIN SLICED OR FLAT CUT (SLICER):

Leaf width depends on log size and placement in flitch. Half Round is a somewhat similar pattern achieved by turning a half log flitch on a lathe.

## PLAIN SLICED OR FLAT CUT VENEER:

The half log, or flitch, is mounted with the heart side against the guide plate of the slicer. Cuts are made parallel to a line through the center of the log, producing a distinct figure. By keeping the veneer leaves in the same order in which they are cut, the leaves can be reassembled with only a very gradual grain figure transition from one panel to another.

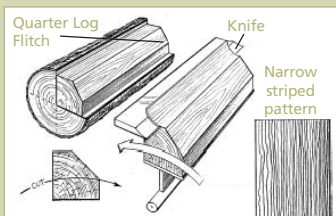


### QUARTER SLICED (SLICER):

Flake pattern is produced when slicing through medullary rays in some species, principally oak.

## QUARTER SLICED VENEER:

A quarter log, or flitch, is mounted so that the slicer cuts the log at a 45° angle to the axis lines of the log, creating a striped or straight grain effect. A flake effect is produced in oak veneers using this method.



### RIFT CUT (LATHE):

Angle of cut is 15 degrees to the radial to minimize the ray (flake effect) in oak. Comb grain is the portion which has VERY tight and straight grain.

## RIFT CUT VENEER:

This method is generally restricted to Red and White Oak. A quarter log is mounted off center and cut slightly across the medullary rays common to oak, resulting in a straight grain without the flake effect of quarter sliced oak.



### ROTARY (LATHE):

Wide Sheets. Broad pattern. Difficult matching. Used primarily on Economy or Commercial grades.

## ROTARY CUT VENEER:

A method of cutting in which the log is placed on a large lathe and turned against a fixed blade, so that a continuous cut is made round and round the log, more or less parallel at all times to the growth ring. The result is a wild, varied grain effect. Since the grain pattern is non-repetitive, it cannot be used for sequence matching.

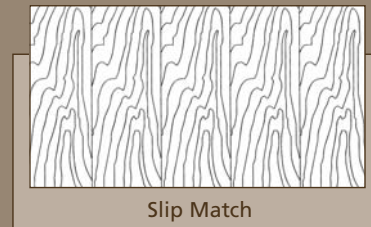
## MATCHING AND ASSEMBLY OF VENEER

# COMPO

### TYPES OF MATCH

Once the decorative veneer cutting method is specified, the type of match at the joint line must be specified. The way in which the individual cuts are placed next to each other during the fabrication of the veneer face affects the appearance of the doors.

- **Book Match** - Book Match is the most commonly used match in the industry. Every other piece of veneer is turned over so adjacent pieces are opened like two adjacent pages in a book. The veneer joints match and create a mirrored image pattern at the joint line, yielding a maximum continuity of grain. Book matching is used with plain sliced, and less often with other cuts of veneer.
- **Barber pole effect in book match** - Because the “tight” and “loose” faces alternate in adjacent pieces of veneer, they may accept stain or reflect light differently, resulting in a noticeable color variation, often called “barber pole”. These variations are not considered a manufacturing defect.
- **Slip Match** - Slip Match is the adjoining of veneer components in sequence without turning over every other piece. The grain figure repeats, but joints won’t show a mirrored effect. Slip matching is often used in quarter cut, rift cut and comb grain veneers to minimize the barber pole effect.
- **Random Match** - A random selection of veneer components from one or more logs. This produces a “board-like” appearance.



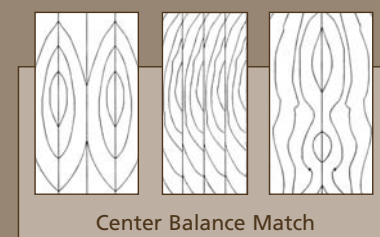
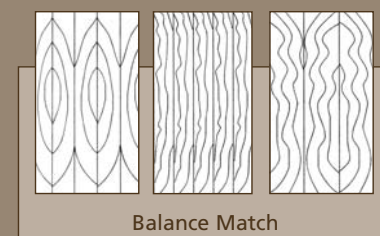
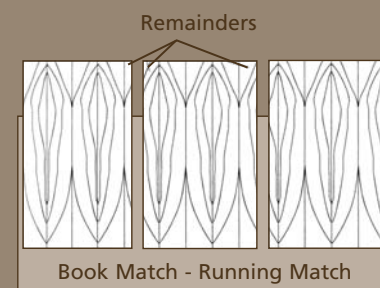
# FINISHMENTS

## TYPES OF ASSEMBLY MATCH

The type of "assembly match" must be specified to obtain a desired appearance. Any sequence matching from opening to opening must be specified.

- **Running Match** - Non-symmetrical appearance on any single door face. Veneer pieces of unequal width are common. Each face is assembled from as many veneer pieces as necessary.
- **Balance Match** - Symmetrical appearance. Each face is assembled from an even or odd number of pieces of uniform width before trimming. This match reduces veneer yield.
- **Center Balance Match** - Symmetrical appearance. Each face is assembled from an even number of pieces of uniform width before trimming. Thus, there is a veneer joint in the center of the panel. This match further reduces veneer yield.

*Reprinted from AWI Quality Standards.*



## OUR COMMITMENT TO THE ENVIRONMENT

With VT flush wood and stile & rail doors, you don't have to sacrifice beauty to protect the environment. VT Doors are manufactured in a highly efficient, environmentally friendly facility. VT Industries architectural wood doors are the only GREENGUARD Certified® wood doors available. They are also available with FSC certified materials and are listed on GreenSpec®.



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*Doors featured on cover (left to right): Quarter Sliced  
Figured Makore, Clear Finish; Plain Sliced Red Oak,  
Clear Finish; Plain Sliced Cherry, Clear Finish*



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