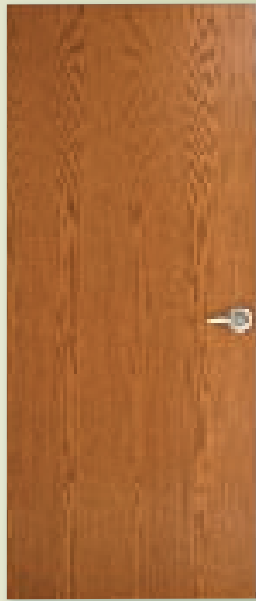
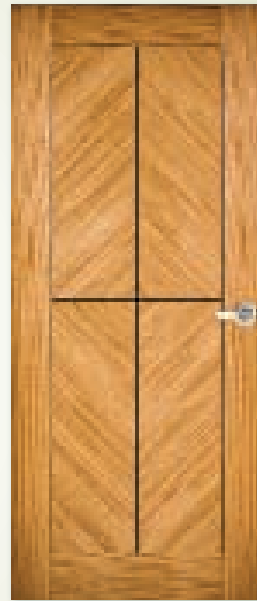
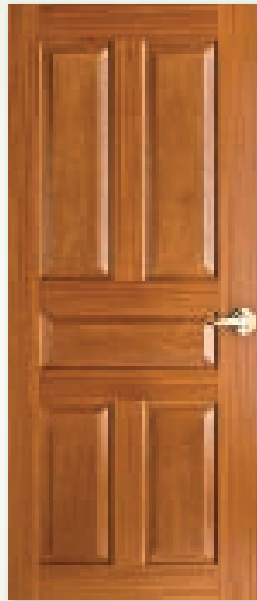
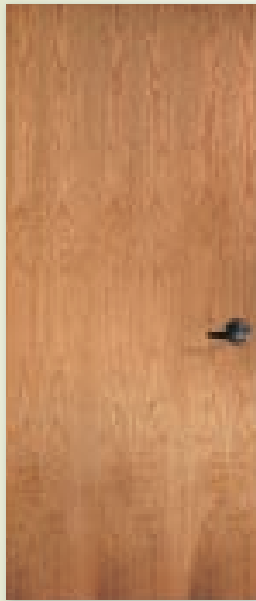
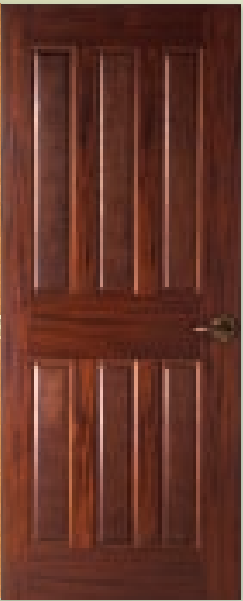


VT INDUSTRIES | **VENEER GUIDELINES**



VT WOOD VENEERS

PLAIN SLICED NATURAL 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.



VT WOOD VENEERS

PLAIN SLICED SELECT WHITE MAPLE

HOW TO SPECIFY

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 AWS 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 | | | | | | | | | |

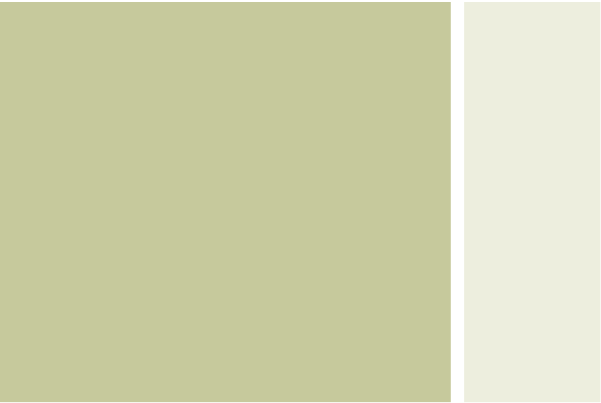
**Maple heartwood is so low in content that it is rarely available in sufficient quantities for commercial use. Chart information referenced from WDMA I.S. 1-A.*

PLAIN SLICED NATURAL 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 | AA | Y | Y | S | Y | S | 1 per 5 sq. ft. | S |
| | PI-SI White | AA | Y | N | S | S | N | 1 per 5 sq. ft. | S |
| | PI-SI Red* | AA | N | Y | S | Y | N | 1 per 5 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 AWS.*

PLAIN SLICED NATURAL BIRCH



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 highly efficient, environmentally friendly facilities. 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®.



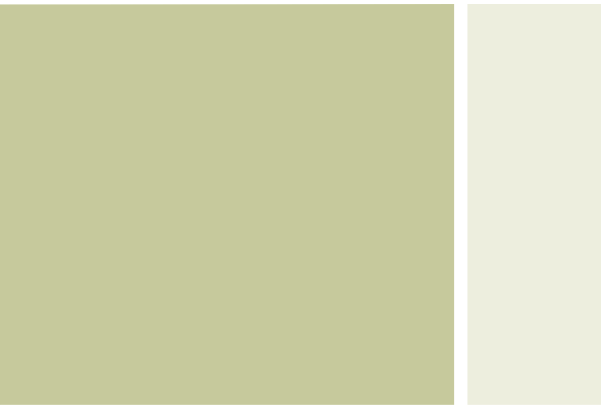
| PLAIN SLICED NATURAL BIRCH CHARACTERISTICS | | | | | | | | | |
|--|---------------|-------|---------|-----------|------------------------|-----------------|-----------------|--------------------------|------------|
| Species | Type & Cut | Grade | Sapwood | Heartwood | Color Streaks or Spots | Color 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 NATURAL 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 | AA | Y | Y | S | Y | N | 1 per 5 sq. ft. | S |
| | PI-SI White | AA | Y | N | S | S | N | 1 per 5 sq. ft. | S |
| | PI-SI Red | AA | N | Y | S | Y | N | 1 per 5 sq. ft. | S |
| Y = Yes N = No S = Slight | | | | | | | | | |

Chart information referenced from AWS.

PLAIN SLICED WHITE BIRCH



HOW TO SPECIFY

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 AWS 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.

| 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 | AA | Y | Y | S | Y | N | 1 per 5 sq. ft. | S |
| | PI-SI White | AA | Y | N | S | S | N | 1 per 5 sq. ft. | S |
| | PI-SI Red | AA | N | Y | S | Y | N | 1 per 5 sq. ft. | S |
| Y = Yes N = No S = Slight | | | | | | | | | |

Chart information referenced from AWS.

VT WOOD VENEERS

WOOD COLOR VARIATIONS



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.

FACTORY FINISH SAMPLES

All factory finish samples illustrate basic color, grain fill and gloss level of our finish systems. 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 Factory Finish brochure.

HERITAGE COLLECTION

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

ARTISTRY COLLECTION

All samples submitted for approval use AA grade book and balance match veneers, unless otherwise specified.



VT WOOD VENEERS

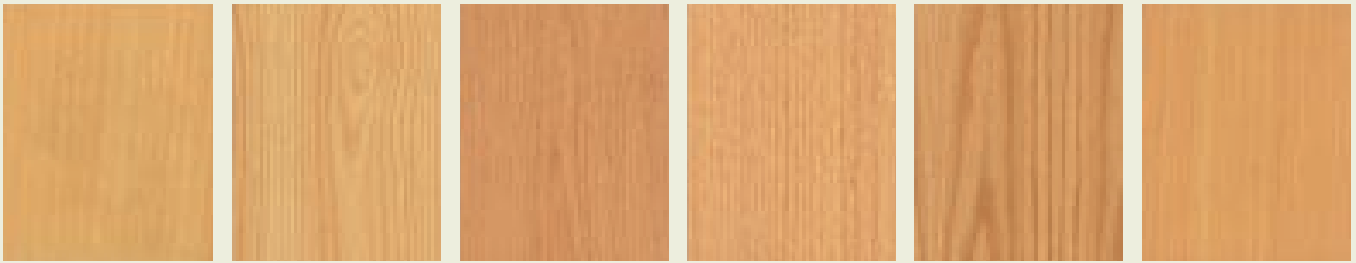
COLOR VARIATION SAMPLES

RANGE OF COLORS ON SAME SPECIES WITH DIFFERENT FLITCHES

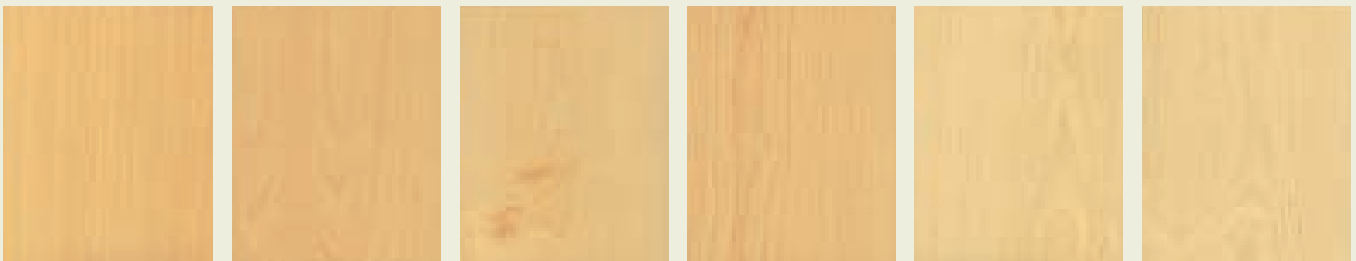
Photos below show range of wood color variation using different flitches of same species. Veneers have clear finish – no stains were added to samples.



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 Architectural Woodwork Standards (AWS) Quality Standards, sections 5 and 9.

AWS require AA grade veneers based on HPVA panel veneer grading tables. Book or slip match and balance center assembly match is required. Nominal minimum width of face components for premium grade veneers is 5" for plain sliced veneer, 3" for quarter sliced veneer, and 5" for rotary cut veneers. AWS defines premium grade veneer as "The highest grade available in both material and workmanship intended for the finest work."

WDMA's standard for premium grade doors require A grade veneers (as opposed to the optional AA grade) based on HPVA panel veneer grading tables book or slip match and running, balance, or center balance assembly match is required. 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 sliced veneers. Minimum width for optional AA grade is 5" for plain sliced veneers, 3" for quarter sliced veneers, and 5" for rotary sliced veneers.

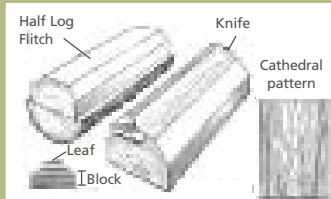


PREMIUM GRADE DOORS

| | Veneer Grade | Veneer Match | Veneer Assembly | Nominal Minimum Width of Face Components |
|------|--------------|--------------|-------------------------------------|--|
| AWS | AA Grade | Book or Slip | Balance Center | Plain Sliced - 5 inches Quarter Sliced - 3 inches Rotary Sliced - 5 inches |
| WDMA | A Grade | Book or Slip | Running, Balance, or Center Balance | Plain Sliced - 4 inches Quarter Sliced - 3 inches Rotary Sliced - 4 inches |

VT WOOD VENEERS

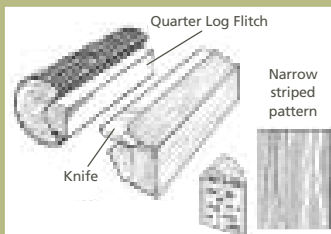
DECORATIVE VENEER CUTTING METHODS

**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

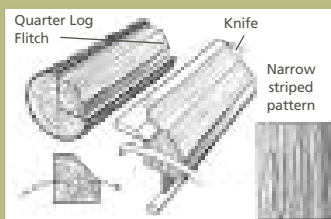
The half log, or flitch, is mounted with the heart side against the guide plate of the slicer. Cuts are made parallel to a line through the center of the log, producing a distinct figure. By keeping the veneer leaves in the same order in which they are cut, the leaves can be reassembled with only a very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

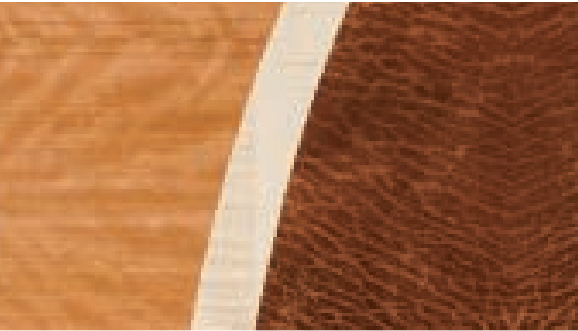
**ROTARY (LATHE):**

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

ROTARY CUT VENEER

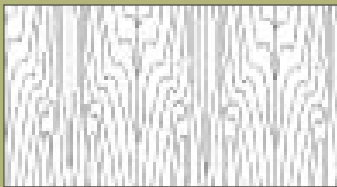
A method of cutting in which the log is placed on a large lathe and turned against a fixed blade, so that a continuous cut is made round and round the log, more or less parallel at all times to the growth ring. The result is a wild, varied grain effect. Since the grain pattern is non-repetitive, it cannot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

MATCHING OF VENEER COMPONENTS



TYPES OF VENEER 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.

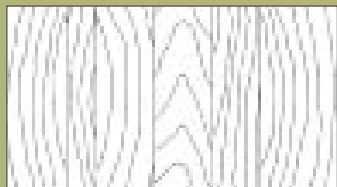
BARBER POLE EFFECT IN BOOK MATCH

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.

End Match



Continuous Match



END MATCH

The End Match is generally selected for doors with transoms. This match utilizes a single piece of veneer that runs from the bottom to the top of the door. At the transom, a mirror image is created by turning the veneer at the joint.

CONTINUOUS MATCH

Continuous Match is when a single piece of veneer is utilized for both the face of the door and the transom.

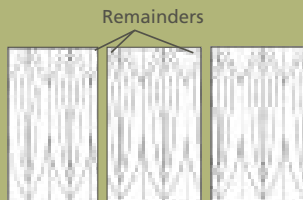
VT WOOD VENEERS

ASSEMBLY OF VENEER COMPONENTS



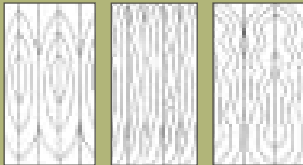
TYPES OF ASSEMBLY MATCH

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



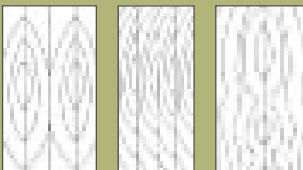
RUNNING MATCH

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.



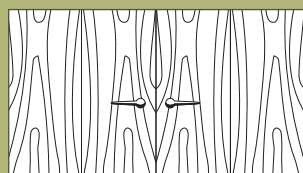
BALANCE MATCH

Symmetrical appearance. Each face is assembled from an even or odd number of pieces of uniform width before trimming. This match reduces veneer yield.



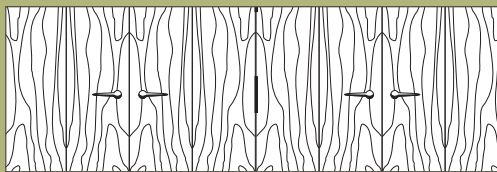
CENTER BALANCE MATCH

Symmetrical appearance. Each face is assembled from an even number of veneer pieces of uniform width before trimming. Thus, there is a veneer joint in the center of the panel. This match further reduces veneer yield.



PAIR MATCH

Pair match describes the way in which leaves of veneer are assembled for a pair of doors or a series of door pairs in the immediate vicinity.



SET MATCH

Set match describes the way in which the leaves of veneer are assembled for sets of doors hung adjacently.

BLUEPRINT MATCHED PANELS AND COMPONENTS

Manufactured to the exact sizes the manufacturer determines from the blueprints, clipping and matching each individual face to the project's specific needs. Each face will be matched in sequence with adjacent panels, doors, transoms, and cabinet faces as needed to provide for continuity. Unless specified, running match is standard.

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