



A Guide to Veneers

By Merle E. Visser



Above: Strips of veneer are loaded, then glued to the vertical edges of doors after being cut to final size. Between the choice of wood species, cuts, matching methods and grades, the options are almost endless for selecting veneer on a door. **Below:** Veneer is the thinly sliced layer of wood that is usually glued to a layer of fiberboard and then adhered to each side of a structural wood core, creating a five-layer “sandwich” that is cured with time, pressure, temperature, or a combination of all.

At its core, a wood door exerts strength and stability. The properties and function of the door determine just how solid and sturdy it is built.

Not to be overshadowed by the staying power, however, is an alluring beauty that can radiate from the face of a door in all manner of shape, color and style. The name for this unique aspect of wood doors is *veneer*, a centuries-old wood-working technique that commands attention and respect.

First impressions can make all the difference when a visitor approaches a door to an office, a school classroom, a hospital room, a restaurant, or a lodge or hotel room. This can set the stage for the visitor’s total experience of a space. Veneers have the capacity to make the desired first impression.





When thinly sliced veneer (pictured) is carefully cut, matched and applied to a wood door, natural characteristics come to the forefront and give the door the aesthetic look that people typically see first.

Sliced red oak veneer is laid on the core of a door.

Because most projects require veneer from multiple trees, the potential of grain and color variations across all doors on a given project can be very dramatic at possibly a greater cost.

Veneers Appeal to Different Tastes

The aesthetic look of a door is typically what people see first, so showcasing the sturdy product with an extra layer of craftsmanship in fine and, every so often, unusual detail is important. Veneer is natural wood, a thinly sliced byproduct from the trunk of a tree. When veneer is carefully cut, matched and applied to a door, natural characteristics come to the forefront, apparent even to the untrained eye.

One person might say, "Oh, maple veneer is beautiful," and the next person will say, "Personally, I like more wood grain to show." So, there's a built-in challenge to selecting just the right veneer to satisfy an architectural or consumer palate. Beauty is in the eyes of the beholder, right?

In nature, many factors affect the appearance of veneer, such as minerals in the soil, damage to the tree, extremely wet or dry years, and other occurrences that cause color and grain-pattern variation.

Because most projects require veneer from multiple trees, the potential of grain and color variations across all doors on a given project can be very dramatic. To limit this, specifications can be written for the veneer to be hand sorted and selected for grain and color. This is an added expense, however, and usually requested only for high-end projects.

Still, the variation in the veneer for most projects is appealing because that is what nature created.

The Right Cut Is a Tone Setter

The basic process of turning logs into veneer has changed little over the decades, even as advances in technology impact the course of operations in other aspects of the wood-door industry.

The veneer is typically cut from the log in one of two ways: on a rotary lathe or a slicing machine. The cutting method is the determining factor in the overall grain pattern on the face of the door beyond what nature provides. It is the means by which the appearance of the natural grain pattern can be altered, even from within the same log.

Having the right cut with face style and color sets the tone for what awaits beyond the door.

The widely used types of cut or slice include:

- **Rotary cut:** produces the highest veneer yield, making it the most economical. In the architectural door market, this is typically used only for birch veneer. The log is placed on a large lathe and turned against a fixed blade. This cutting method can produce a varied and, often, wild grain pattern.
- **Plain sliced or flat cut:** the most common veneer cut used for architectural-grade doors. It provides a good yield, still making it cost effective, and forms aesthetically-pleasing cathedral patterns.
- **Quarter sliced:** a uniformly, vertically straight grain pattern results in lower veneer yield, resulting in a higher cost due to the added waste. In oaks, due to the medullary rays that only oak has, quarter slicing causes highlighting called flake, which appears as horizontal bars across the grain. This appearance was highly sought after in furniture manufacturing for many years. This flake only appears in oaks. All other species have a nice, straight vertical grain pattern when quarter sliced.

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Face veneer is pulled from a stack of veneer as part of the manufacturing process. Having the right cut of veneer with face style and color sets the tone for what awaits beyond the door.

Once the veneer has been cut into sheets, bundled as a flitch and dried, it has to be joined back together to make a door face.

- Rift cut: produced on a half-round slicing machine and is typically only used for oaks for minimizing or eliminating the flake in a straight grain pattern. This cut provides the lowest yield from a log.

Playing Matchmaker

Once the veneer has been cut into sheets, bundled as a flitch and dried, it has to be joined back together to make a door face. How individual sheets are laid next to one another changes a door's appearance.

Veneer matches run the stylistic gamut:

- **Book match:** the most common pairing in the industry, whereby every other veneer piece is turned over so adjacent pieces open like two pages in a book and create a mirrored image pattern at the joint line. This provides maximum continuity of grain.
Note: This match may create a condition called the "barber pole" effect, which is a noticeable color variation between the individual pieces of veneer causing one piece to be light and the adjacent piece to be dark across the whole door face. It is caused by the knife as it slices the veneer, causing one piece to have a closed grain and the next to have an open grain. This is not considered a defect under industry standards and cannot be seen until finish is applied.
- **Slip match:** often used for quarter-cut, rift-cut and comb-grain veneers. The joints don't show a mirrored effect as the veneer components are connected in sequence without turning over every other piece.
- **Random match:** a "board-like" appearance forms with a random selection of veneer components from one or more logs.
- **End match:** typically used with doors that have transoms. The match features a single piece of veneer that runs from the bottom to the top of the door and creates a mirror image by turning the veneer at the joint to form the transom.
- **Continuous match:** when a single piece of veneer is used for both the face of the door and the transom.

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Rolls of veneer edge banding from a few of the hundreds of different species of wood that can be used in the construction of wood doors. Two of the more popular species are birch and red oak.

The evolution of veneers has evolved into a diverse market that includes hundreds of different species of wood.

Birch, Oak Stand Out Among the Tree Species

Veneer has long been a standard bearer in woodworking, stretching back thousands of years to its ornate use on the tombs of Egyptian pharaohs, including that of King Tutankhamun. The evolution of veneers has evolved into a diverse market that includes hundreds of different species of wood. One tandem tends to stand out from all of the other wood types.

Rotary cut birch and sliced red oak are two of the more popular species. They have been for years, and they will probably continue because of the economics involved. They're both very durable veneers, and aesthetically, they satisfy the needs for most project work.



Rotary-cut natural birch veneer is inspected and sorted.

Preferences in veneer selection can usually be predicted using the Mason-Dixon line.

Preferences in veneer selection also can usually be predicted using the Mason-Dixon line—the historic line of demarcation on the borders of Pennsylvania to the north, Maryland to the south, Delaware to the east and West Virginia to the west. North of that line, most projects for a school or a public building are going to specify oak doors. And, as you move south, projects are going to specify birch doors. It's just the way it works out.

Making the Grade

Some words of caution can be helpful to architects and contractors when submitting design orders for the specialized doors. For years, the

Specifications are set for each grade, ranging from color and matching to natural characteristics.



The aesthetics of a wood door is set in motion by the choice of veneer. The art of veneer selection and application is what creates the alluring beauty that can radiate from the face of a door, such as these office doors with a walnut finish.

industry has referred to door grades as premium, custom and good grade. A few years ago, the grade of the veneer required for premium grade changed from “A” grade to a new level called “AA” grade. This may add cost to a project that does not need the aesthetics that “AA” grade veneer provides.

The Hardwood Plywood & Veneer Association (HPVA) develops and publishes voluntary product standards for the commercial industry, factoring in quality of material and aesthetic value. For example, the three grades for hardwood veneer faces such as ash, birch, maple, cherry, mahogany or walnut are AA, A and B.

Specifications are set for each grade, ranging from color and matching to

natural characteristics (including presence and size of pin knots). The AA-grade veneer would be for spaces such as a corporate office, boardroom or any place that you are willing to spend the extra money to have the most perfect-looking veneers you can get. It wouldn't be very practical to put those in an elementary school, where doors experience more wear and tear, and the need for greater durability tends to supersede any desire to invest in a costlier door face.

An A-grade veneer would typically be used for doors going into schools, hospitals, hotels or similar buildings. A B-grade veneer might be for

office space in the back of a warehouse, where a solid door is needed, but it doesn't have to be aesthetically pleasing and may be painted.

Specialty Doors in Vogue

To be sure, custom-made veneers aren't purely for offices, schools and other entities that want to spruce up their interior environments. Safety and security may be top of mind when looking into bullet-resistant wood doors, such as at banks, schools, pharmacies and residential safe rooms. Lead-lined doors have appeal to hospitals, medical clinics and laboratories as a way to provide protection from exposure to radiation from X-rays. Schools and businesses are investing in specially designed acoustical doors that silence the distracting noise outside classrooms and office buildings.

For those on the cutting edge when desiring a chic veneer, the faces of doors can be covered from top to bottom with ink-printed patterns—from your photograph to any kind of design. That's new technology that has been developed in the last few years, adding to the allure of veneers.

Choices to be Made

Between veneer species, cuts, matching methods and grades, the options are almost endless and can be very confusing. For this reason, it is strongly recommended that an industry professional be consulted for assistance when there is a need to specify veneer. ■



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