



Hardwood Plywood

Murphy Company, America's leading supplier of veneer-based wood products, has been family-owned since its establishment in 1909 and is now in its second century of ownership. Our state-of-the-art facility in Eugene, Oregon, produces high-quality hardwood plywood and related products. With over 50 years of manufacturing expertise, Murphy is the industry benchmark, providing plywood and panels that exceed both national standards and customer expectations. We take pride in producing standard and customized products with unparalleled precision, thickness and quality.

At Murphy, we hand-grade over 95% of our face veneers using our own team of veneer technicians. If you require a specific veneer type for your project or customer, we can accommodate your specifications. Furthermore, our experienced sales staff has extensive knowledge of our grading room, ensuring a seamless transition from your custom request to final product delivery.

Our hardwood products are the preferred choice for cabinetry, furniture, and wall paneling. We offer a vast selection of combinations to meet your unique needs, including various core, veneer, and finish options.



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Hardwood Veneer —



Alder - PS



Knotty Alder - PS



Ash - RC



Beech - PS



Birch - RC



Cherry - PS



Fir VG - QS



Hickory - PS



Khaya - PS



Knotty Pine - PS



Maple - PS



Maple - RC



Poplar - RC



Red Oak - PS



Red Oak - RC



Sapele - PS



Walnut - PS



White Oak - PS



White Oak - QS



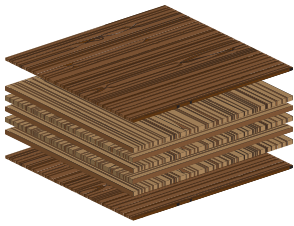
White Oak - RIFT

Veneer Codes: PS: Plain Slice, RC: Rotary Cut, QS: Quartered Sliced, RIFT: Rift Cut.

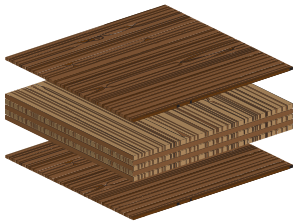
Note: The veneer photos above represent our most popular veneers. Other veneer species available upon request. The pictures do not cover the entire range of color, grain variation or characteristics for the given species.

— Core Types

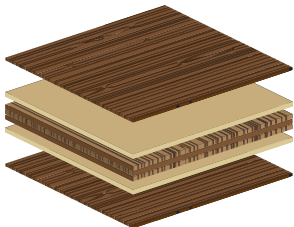
Murphy offers many core options on its hardwood plywood panels to meet the desired properties and provide optimum performance for the desired application. The most common cores include:



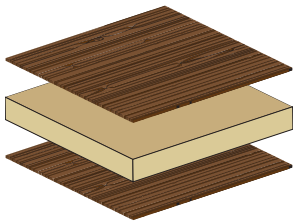
Veneer: Well-suited for cabinet and casework, veneer cores are manufactured by alternating the grain direction of each layer by 90 degrees. This cross layering creates exceptionally strong, lightweight and dimensionally stable hardwood plywood with excellent screw holding characteristics.



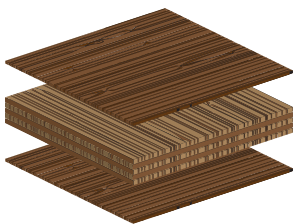
Calibrated: This is the choice for high-end cabinet and furniture manufacturing requiring exact tolerances. Panels using this type of veneer core are classified as “two step.” The inner core is manufactured and sanded to a uniform thickness. The second step applies face and back veneers. This offer thickness consistency across the sheet.



FiberPly: FiberPly features excellent machinability and superior screw holding combined with exceptional panel strength and durability. It features inner veneer layers and MDF layers under the hardwood face and back. Offering the strength and stability of a veneer core with a void-free MDF surface for the face and back, FiberPly produces a rigid, smooth panel.



Composite: Using a particleboard (PB) or medium density fiberboard (MDF) core makes for a smooth, stable and flat plywood panel. This core type is perfect for projects requiring routing and shaping operations.

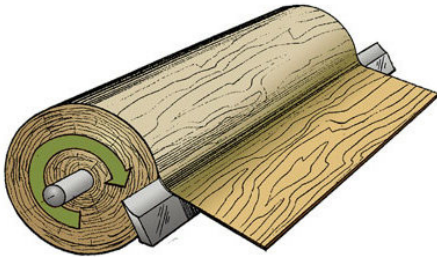


Multi-Ply: This core features a series of thin, hardwood plies. High strength, excellent screw holding, and a dazzling raw edge make this a core of choice for retail, furniture and interior use.

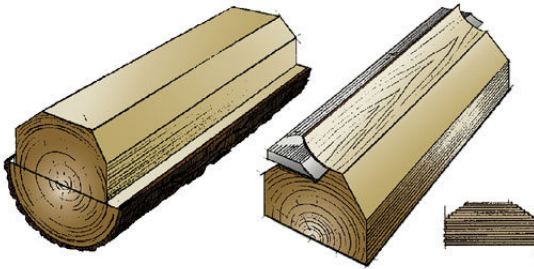


Veneer Slicing —

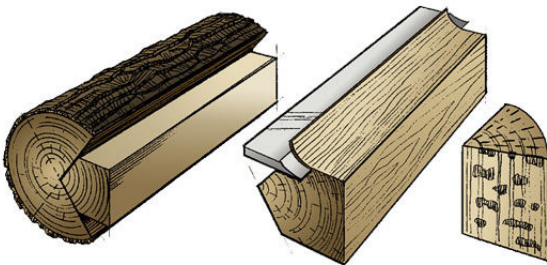
Depending on how a log is peeled/sliced into veneer, very different visual effects and finished appearance can be achieved. Logs from the same species, cut with different methods, produce distinctively different veneers.



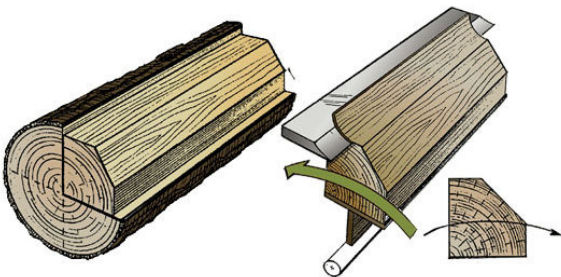
Rotary cut: Cut on a lathe, just like paper coming off a roll, rotary cutting can yield sheets of veneer with broad, variegated grain patterns. This is the most common veneer cut, generates the highest log yield, and is often the least expensive.



Plain sliced: Cut across the width of a half log, plain slicing produces the look of traditional sawn lumber. The log is mounted and cut along the growth rings, producing a combination of cathedral and straight grain patterns.



Quarter: A quarter log is mounted so the slicing knife cuts across the growth rings close to a right angle. The overall result is a narrow, straight grain appearance. This is a popular veneer cut for red and white oak and produces a ray flake pattern.



Rift: Producing similar effects to quarter slicing, rift cutting produces a narrow, straight, tight grain and is generally used only with red and white oak. This process, although costlier due to lower yields, provides a more uniform appearance and minimizes the ray flake pattern in white or red oak.

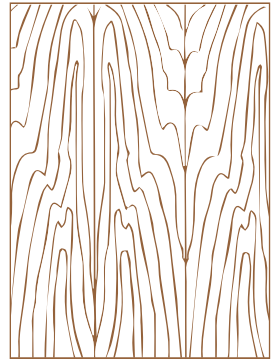


— Veneer Matching

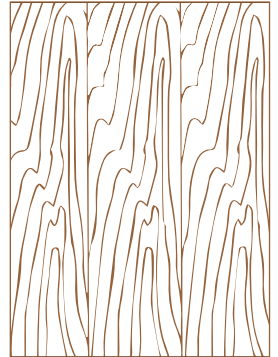
Spliced veneers are comprised of multiple flitches to form full sheets. The most common forms are book, slip, plank, pleasing and random. Each produces a unique pattern resulting in special visual effect and appearance.



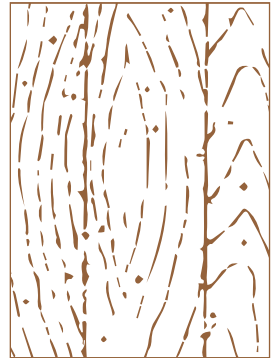
Book: Alternating leaves of veneer are turned over so adjacent leaves resemble pages of a book (mirror effect). This creates a symmetrical pattern and yields maximum continuity of the grain. Book is the most common veneer match.



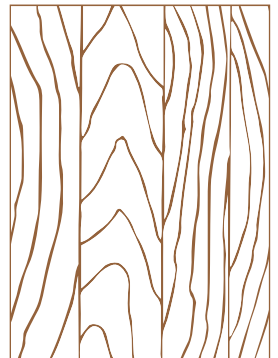
Slip: Adjoining veneer leaves are placed in sequence (without being turned) so the same side of the veneer leaves are exposed. Visually, the leaves do not match at the joints, but the grain is repeated in appearance. This enhances color uniformity as all faces have similar light reflection.



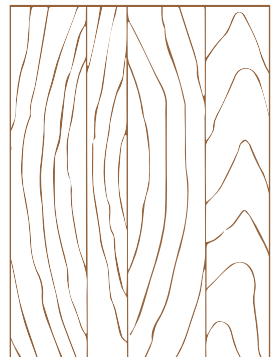
Plank: The veneer leaves of the same species are selected and assembled in a dissimilar way (in color, grain, or width) to simulate lumber planking. This match is typically used with rustic woods to ensure characteristic marks are evenly distributed throughout the sheet.



Pleasing: The veneer leaves are selected by color or similarity for uniformity but not necessarily grain pattern match. No sharp color contrasts are allowed at the joints.



Random (Mismatch): The veneer leaves are assembled in random order without regard to matching grain or color. This provides a casual effect but works well with naturally uniform species.



Panel Finishes —

Panel finishing can be expensive and time-consuming. Save labor costs and virtually eliminate finish emissions with Murphy finishing services. Our topcoat system uses 100% UV solids. All coloring system components are water-based and environmentally friendly.



PermaGuard® UV Topcoat

Our durable, clear finish, perfect for full panels, cabinets, vanity interiors, shelving, and drawers, is stain and chemical resistant. The UV curing process provides a finish more durable than catalyzed topcoats and is available in various sheens ranging from low to high gloss.

The topcoat process includes application of a UV sealer and a double application of the top clear coat (two coats are applied instead of a single, thicker coat for a more durable finish).

SurfaceSentry™

All UV topcoat now includes SurfaceSentry™ antimicrobial technology. Murphy Company's SurfaceSentry™, a special additive to the UV finish process, is a perfect choice for panels used on furniture, cabinets, interior architectural components and other high-touch surfaces. This special antimicrobial treatment utilizes Silver-ion technology, integrated with the finish, to create a coating capable of automatically decontaminating the surface against microbes, pathogens, bacteria, mold, mildew, and fungus.

SurfaceSentry™ panels are perfect for:

- Healthcare clinics and hospitals
- Hotels and restaurants
- Kitchens
- Retail and office furniture
- Schools
- Gyms and spas



Transparent and Solid Colors

Adding color to real wood can emphasize the grain and enhance its beauty. Murphy has the ability to apply transparent or solid colors to meet your specifications.

The Murphy finish line capabilities include application of the following:

- Flood coat.
- Stain (water-based stain applied to color veneer grain).
- Sealer (seals wood for further finishing: 100% UV solids).
- Primer (water-based primer provides solid base for color application).
- Toner (adds transparent tint to the final wood coloring).
- Color (water-based color finish).
- PermaGuard® Topcoat (100% UV solids, two-step clear coat as described above).

Color Matching

If you have a color to match, Murphy works with our finish supplier to create the correct mix of finishing steps. Once the color-match recipe is in place, future orders can be finished and match-verified using our special commercial spectrometer and software system.

From sample receipt to color approval, the first-time match process generally takes two weeks. Please ask your Murphy salesperson for additional details.



— Laminates

Decorative Laminates

Decorative laminate surfaces can be used for furniture, interior cabinets, wall paneling, and store fixtures. With a fully integrated laminating line, Murphy can apply wood grain, solid colors, foil or vinyl laminates to panels. Murphy also offers Thermo-Fused Laminate as a more durable alternative (please see below for more information).

Many surfacing products are available and suitable for widespread decorative and functional applications. Paper and vinyl laminates are an attractive, functional, and affordable alternative to real wood surfaces. Faux finishes and durable performance-grade top coated foils are available as well.

Custom printed decorative overlay options include (top-coated foils and vinyl):

- Decorative top coated papers, 23 gram to 120 gram
- High Quality Vinyl, 2 to 30 mil

ArmorLam™ (TFL)

Quite often a surface more durable than a standard laminate applied to a hardwood panel is desired. A common application is for cabinet interiors. Murphy's ArmorLam™ is perfect for such applications. White is the most common color but matching wood grain and other solid colors are available.

With the thermo-fused laminate (TFL) process, heat and pressure activates a resin-saturated overlay and permanently fuses the overlay to the substrate. Particleboard or MDF are often the substrate used as they present a consistent surface. The resulting finish is noted for its hardness, scratch and heat resistance and color stability.

ArmorLam panels are widely used in cabinets, shelving, home storage, office furniture, closet system components, store fixtures and cabinets. It can also be specified for use in healthcare, hospitality, commercial and retail settings.

— PaintPanel™

Murphy Company's PaintPanel™ is the perfect candidate for application of painted finishes, paper overlay or veneer.

Strong, smooth and flat are the key characteristics of PaintPanel. It features a high strength veneer core with HDF faces, providing a flat, high-density surface.

Additionally, PaintPanel's veneer core provides superior screw holding capability and excellent machinability.

PaintPanel features:

- High Density Fiber (HDF) face and back.
- Smooth paint, paper overlay or veneer application.
- Excellent fastener and screw-holding capabilities.
- Outstanding machinability properties.
- Precise thickness tolerance.
- Qualifies for LEED® credits.
- NAUF faces available upon request.
- Standard thicknesses include 1/2", 5/8" and 3/4".

PaintPanel vs. MDF Properties:

<u>Characteristic</u>	<u>PaintPanel</u>	<u>MDF</u>
MOE (psi)	432,200	300,000
MOR (psi)	4,944	3,000
Screw holding, face (lbs)	442	275
Screw holding, edge (lbs)	432	225

Third-party Testing



Sustainability —

Forests play a crucial role in the economy by providing more than half of all major industrial raw materials. Forest-based products are of great importance, and if managed sustainably, the resources are indefinitely renewable. Unlike products derived from metal and fossil fuels, forests can be a more environmentally friendly and sustainable source of raw materials.

Using hardwood plywood panels is a more efficient use of resources than using solid hardwood. Murphy’s veneer division maximizes the use of each log by converting all possible content to veneer and utilizing the by-products for biomass, landscape products, and other purposes. The company ensures that nothing goes to waste.

To promote sustainable forest practices that protect water, air, and wildlife, Murphy Company places special emphasis on sourcing raw materials for panel production from suppliers who share their commitment to sustainability. The company requires its timber and log suppliers to adhere to federal and state forest practice regulations in their harvest operations and partners with suppliers who are committed to sustainable practices and sourcing.

Murphy Company does not trade in wood or wood fiber that is illegally harvested, harvested in violation of traditional and civil rights, harvested in areas where global conservation priorities are threatened, or harvested in natural forests being converted to plantations. The company prioritizes responsible sourcing to ensure that their operations are environmentally sustainable and socially responsible.



Core Properties —

Core Type	Flatness	Surface Uniformity	Dimensional Stability	Screw Holding	Bending Strength
Veneer	Fair	Fair	Excellent	Excellent	Excellent
Veneer (Murphy Calibrated)	Good	Good	Excellent	Excellent	Excellent
Combination Core w/ composite crossbands (FiberPly)	Excellent	Excellent	Good	Excellent	Excellent
Medium Density Fiberboard (MDF) (Murphy Composite)	Excellent	Excellent	Fair	Good	Good
Industrial Particleboard (Murphy Composite)	Excellent	Excellent	Fair	Fair	Good
Moisture Resistant MDF	Excellent	Excellent	Fair	Good	Good
Fire Rated Particleboard	Excellent	Good	Fair	Fair	Good
Fire Rated MDF	Excellent	Excellent	Fair	Good	Good
Multi-Ply	Excellent	Excellent	Excellent	Excellent	Excellent

— Certifications

At Murphy Hardwood Plywood, we are deeply committed to the environment, and we demonstrate this commitment by voluntarily submitting to third-party review and certification. Our certifications include:

- Chain of Custody Standards of the Forest Stewardship Council® (FSC® C011299)
- Program for the Endorsement of Forest Certification (PEFC) Chain of Custody Standard

Murphy Hardwood Plywood has achieved CARB Phase II exempt status, TSCA Title VI compliance and is one of the few hardwood panel producers in the country with HP-1 mill certification. This third-party, voluntary certification and testing is based on ISO/IEC 17065, 17025 and 17020 standards.

In our hardwood panel manufacturing process, we use ULEF adhesive as a default, which is LEED and CARB2 compliant. However, we also offer the option of using NAUF/NAF adhesive upon request.

We are proud to be members of several industry associations, including the DHA® (Decorative Hardwoods Association), KCMA® (Kitchen Cabinet Manufacturers Association), AWFS® (Association of Woodworking & Furnishings Suppliers), NBMDA® (North American Building Material Distribution Association), APA® (Engineered Wood Association), and NAWLA® (North American Wholesale Lumber Association).



— Custom Services

Custom Services

- Panels can be cut to custom size for additional labor savings.
- Edge-banding (PVC or veneer available).
- Foil edging.
- Bullnose finishing of edges.
- Dado panels to save on production labor.
- Drawer sides produced to your specifications.
- Custom UPC labeling.
- Special packaging to your specifications.

Custom Panels

- Standard panel size is 4' X 8'. Panels are also available in 4' X 6' and 4' X 7'.
- Inquire about oversized panels.
- Counter-front panels are available (cross-grain panel).
- ULEF glue is standard. NAUF or NAF glue available upon request.
- Moisture-resistant, exterior-grade glue available.



Murphy Company produces a wide variety of wall paneling products. Please ask your salesperson for more details or find additional information at murphyplywood.com/paneling.

Storage & Handling —

Wood is a hygroscopic material that easily absorbs or releases moisture based on the relative humidity of its surroundings. High humidity conditions cause wood to absorb moisture and expand, while low humidity conditions cause it to release moisture and shrink. However, minor fluctuations in humidity do not significantly affect well-designed constructions. It is advisable to maintain a relative humidity range of 25-55% to avoid problems, while extremes in humidity (above 80% and below 20%) should be avoided.

To minimize or prevent common issues with plywood panel movement and installation, the following recommendations should be followed. Please see our website (www.murphyplywood.com/technical) for additional information.

Handling

Movement – Minimize damage to your panels by handling them as few times as possible. Plan the flow of materials to achieve a minimal movement goal. Please follow the precautions below to retain quality panel conditions.

Storage

Stacking – Maintain clean stacks with no edges protruding. Panels should be stacked flat on raised runners of equal thickness.

Light – The color of some hardwood veneers will change rapidly with exposure to direct sunlight. Keep panels covered and neatly stacked during storage.

Acclimatization

Allow at least 48 hours for panels to acclimate to the job site environment before installation. Again, the panels should be stacked flat on raised runners of equal thickness. The weight should be evenly distributed on the stack to help them acclimatize uniformly. If panels are not given enough time to acclimate to a new setting prior to fabrication or installation, they may warp.

Installation

Do not take panels to the job site until they are ready for installation, after acclimatization. Avoid installing wall panels over wet or unfinished drywall and make sure to include an allowance for linear expansion in the design.

Finishing

Before staining hardwood panels, perform a light sanding and apply a sealer. Test a sample prior to final finishing to ensure the desired result. Additional information can be found in the technical documentation section of the website: www.murphyplywood.com/technical.

Note: The brochure pictures are representative of veneers and panel finishes available. Grain patterns and color may vary. They do not cover the entire range of color, grain variation or characteristics for the given wood species.

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