



Hardwood Plywood

Founded in 1909, and now in its second century of family ownership, Murphy Company is America's premier provider of veneer-based wood products. Murphy hardwood plywood, and related products, are produced at our Eugene, Oregon facility.

With more than 50 years of manufacturing experience, Murphy sets the industry standard and delivers plywood and panels that exceed national standards and customer expectations. Murphy takes pride in producing standard and customized products with precision thickness and quality.

Over ninety-five percent of our face veneers are hand-graded by our own veneer technicians. If a specific project or customer calls for a particular quality of veneer, we will match your specifications.

Additionally, our experienced sales staff has an in-depth working knowledge of our grading room. This creates a cohesive, cooperative transition from your custom request to final product delivery.

Our hardwood products are a popular choice for cabinetry, furniture, and wall paneling. We offer hundreds of combinations to meet your needs with a choice of core, veneer, and finish.



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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



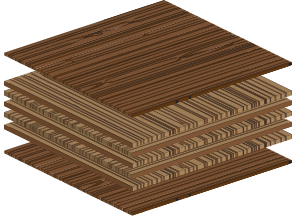
White Oak - RIFT

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

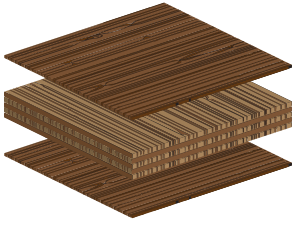
Note: The veneer photos above represent our most popular veneers. Other veneer species available upon request. The pictures do not cover the entire range of color, grain variation or characteristics for the given species.

— Core Types

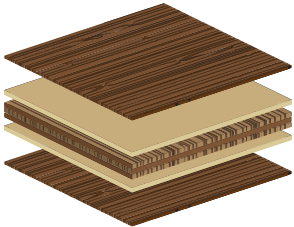
Murphy offers many core options on its hardwood plywood panels to meet the desired properties and provide optimum performance for the desired application. The most common cores include:



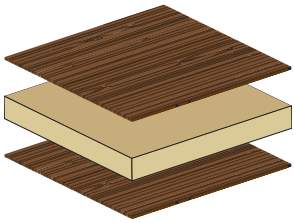
Veneer: Well-suited for cabinet and casework, veneer cores are manufactured by alternating the grain direction of each layer by 90 degrees. This cross layering creates exceptionally strong, lightweight and dimensionally stable hardwood plywood with excellent screw holding characteristics.



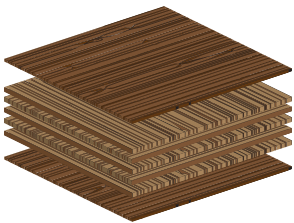
Calibrated: This is the choice for high-end cabinet and furniture manufacturing requiring exact tolerances. A precision inner ply offers thickness consistency across the sheet.



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 veneer 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.

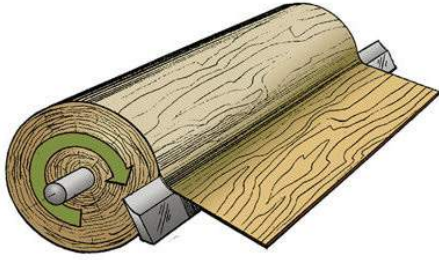


Multi-Ply: This core features a series of thin, hardwood plies. High strength, excellent screw holding, and a dazzling raw edge make this a core of choice for retail, furniture and interior use.

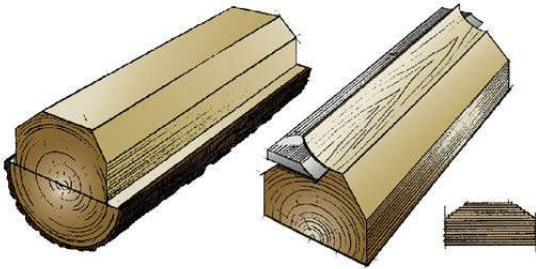


Veneer Slicing —

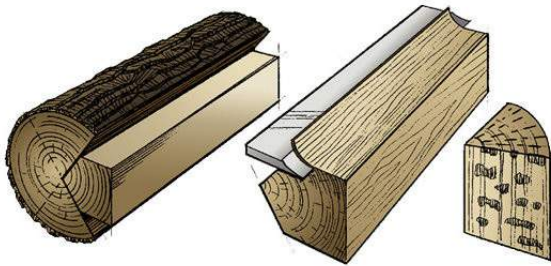
Depending on how a log is peeled/sliced into veneer, very different visual effects and finished appearance can be achieved. Logs from the same species, cut with different methods, produce distinctively different veneers.



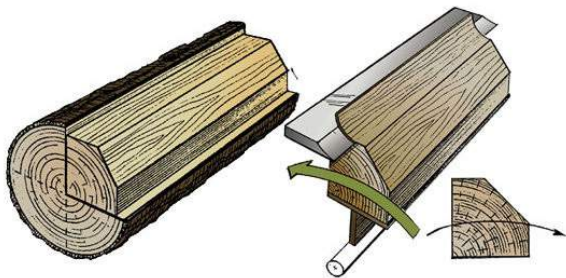
Rotary cut: Cut on a lathe, just like paper coming off a roll, rotary cutting can yield sheets of veneer with broad, variegated grain patterns. This process can produce a limited amount of full-sized, whole piece veneers. This is the most common veneer cut, generates the highest log yield, and is often 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.

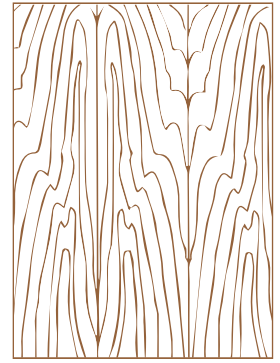


— Veneer Matching

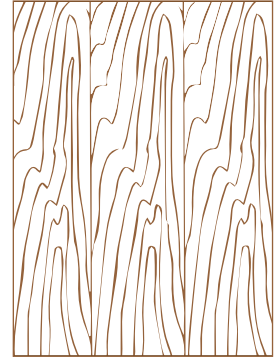
Spliced veneers are comprised of multiple flitches to form full sheets. The most common forms are book, slip, plank, pleasing and random. Each produces a unique pattern resulting in special visual effect and appearance.



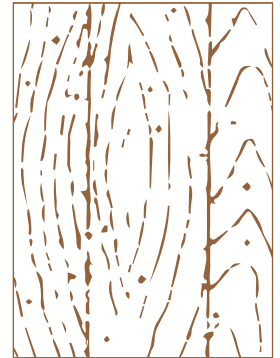
Book: Alternating leaves of veneer are turned over so adjacent leaves resemble pages of a book (mirror effect). This creates a symmetrical pattern and yields maximum continuity of the grain. Book is the most common veneer match.



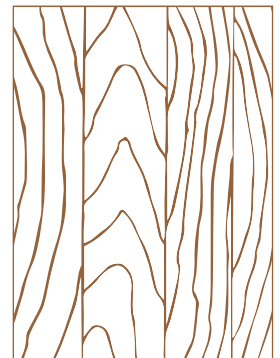
Slip: Adjoining veneer leaves are placed in sequence (without being turned) so the same side of the veneer leaves are exposed. Visually, the leaves do not match at the joints, but the grain is repeated in appearance. This enhances color uniformity as all faces have similar light reflection.



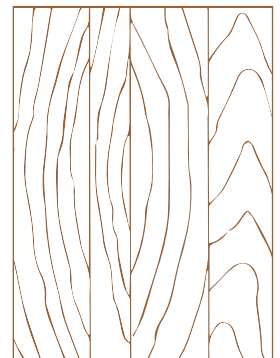
Plank: The veneer leaves of the same species are selected and assembled in a dissimilar way (in color, grain, or width) to simulate lumber planking. This match is typically used with rustic woods to ensure characteristic marks are evenly distributed throughout the sheet.



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 satin 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™ panel is the perfect candidate for application of painted finishes, paper overlay or veneer.

Strong, smooth, light 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 —

The importance of forest-based products to the economy cannot be overemphasized. In fact, forests provide over half of all major industrial raw materials. If managed properly, forest resources are indefinitely renewable, unlike products derived from metal and fossil-fuel.

Hardwood plywood panels constitute a more efficient use of resources than solid hardwood. Murphy’s veneer division uses each log to the fullest, converting all possible content to veneer and using the by-products for biomass, landscape products and other uses. Nothing is wasted.

Special emphasis is placed on sourcing other raw materials for panel production from suppliers committed to sustainable forest practices that protect water, air and wildlife. We require our timber and log suppliers to adhere to federal and state forest practice rules and regulations in their harvest operations and partner with suppliers committed to sustainable practices and sourcing.

Murphy Company avoids trading in wood or wood fiber that is illegally harvested, harvested in violation of traditional and civil rights, harvested where global conservation priorities are threatened or harvested in natural forests being converted to plantations.



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

We take our commitment to the environment seriously and voluntarily submit to review and certification by third parties, including:

- Chain of Custody Standards of the Forest Stewardship Council® (FSC® C011299)
- Sustainable Forestry Initiative® (SFI®)
- SFI® Program Requirements for Fiber Sourcing, Chain of Custody and Product Labels
- 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.

As a default, Murphy uses ULEF adhesive for hardwood panel manufacturing. It is both LEED and CARB2 compliant. Use of NAUF/NAF adhesive is available upon request.

Murphy industry association memberships include 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 and will readily exchange moisture with its environment according to the relative humidity. In humid conditions, wood will pick up moisture and swell. In low humidity situations, wood releases moisture and shrinks. Normal, minor fluctuations in humidity will have an insignificant impact on properly designed construction. To avoid problems, it is recommended to maintain a relative humidity range of 25-55%. Extremes in humidity (above 80% and below 20%) should be avoided.

The following recommendations will help minimize or avoid common issues with plywood panel movement and installation. 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 (observe the above acclimatization step). Wall panels should not be installed over wet or unfinished drywall and an allowance for linear expansion should be included in the design.

Finishing

A light sanding and application of a sealer is recommended prior to staining of hardwood panels. Make sure to test a sample prior to final finishing. Please see our technical documentation section of the website for additional information.

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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