



## Hardwood Plywood Core Guide: North American Veneer Core

**Columbia Forest Products is North America's leading producer of veneer core hardwood plywood, manufacturing fine decorative plywood products and servicing the U.S. and Canada for more than 50 years.**

**General Veneer Core Attributes:** Made with alternating veneer inner plies. In North America, the innerply species are usually softwood (fir or pine) on the west coast and poplar or aspen on the east coast. Veneer core panels are relatively light in comparison with composite panels, typically weighing about 70 lbs. per 3/4" panel. Veneer core offers great strength and stability with better spanning properties than either PBC or MDF. Veneer core does have a wider variance in thickness in comparison with highly engineered PBC or MDF. Additionally, this core is not as forgiving with today's thinner face veneers; varying degrees of core transfer is possible depending on the surface veneer or core construction specified. For high-end, plain sliced woods, standard or premium two-step constructions are recommended to alleviate core telegraphing.

**Columbia's 100% veneer core products offer a variety of panel construction options to satisfy a range of quality and price point needs as directed by a specific application:**

**Standard One-Step** — Comprised of 100% regional species core\* (aspen, poplar or fir, depending on your region) in a line-by-line construction. This traditional veneer core construction is predominantly used for commodity rotary panels and is suitable for use with faces of dark colored commodity sliced woods such as red oak or cherry. Standard one-step veneer core construction is a retail/do-it-yourself favorite with mass merchants.

**Premium One-Step** — Combination of regional species core\* with smooth ANSI-HP-1 J-grade outer crossbands selected for uniform color and surface smoothness next to the face and back, assembled in a line-by-line construction. Recommended for value-priced UV panels, and suitable for use with faces of lighter-colored sliced woods, sap birch and sap rotary maple unfinished panels. Available at additional upcharge. Ask your Columbia representative for details.

**Standard Two-Step** — Platforms comprised of 100% regional species core\* are sanded before they are assembled with the face and back. Pre-sanding gives two-step panels a tighter thickness tolerance than one-step. Suitable for use with faces of darker premium sliced woods where color variation from outer crossbands is not a concern, such as cherry, alder, red oak, walnut and hickory. Works well for high-grade rotary UV panels and dark sliced UV panels.

**Premium Two-Step** — Platforms comprised of the regional species core\* with J-grade outer crossbands are selected for uniform color and surface smoothness and then sanded before they are assembled with the face and back. Pre-sanding gives two-step panels a tighter thickness tolerance than one-step, outperforming HPVA industry standards. Suitable for use with faces of lighter-colored premium sliced woods such as high-end maple, anigre, bamboo, sycamore and sap birch. The uniformity of these premium panels ensures better fitting components and even finish applications.

**MPX Core** — Columbia's newest core innovation using extremely smooth poplar hardwood cross bands under the face and back. These poplar crossbands are peeled on state-of-the-art Meinan® lathes producing the smoothest domestic all-wood core in North America.

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\*The platform and core species is determined by the types of trees that grow in the region of manufacture.

The regional species core choices will be either fir or pine cores in western US and Canada, aspen cores in northern US and Canada as well as parts of the central US, and poplar cores will be used in the south and eastern US. Ask your Columbia representative from which regional mill your product will ship. Mill location maps are available at [www.cfpwood.com](http://www.cfpwood.com).

Multi-Layered Core  
(imported)

Particleboard Core

MDF Core

Combi-Core

## Hardwood Plywood Core Guide: Composite and Imported Veneer Core Platforms

**Multi-Layered Panels** — This is a specialty all hardwood “European style,” high ply-count birch veneer core blank. This core is often used for decorative applications where the panel edge is revealed. Applications include drawer sides, children’s furniture, fixture components, and other exposed core profile applications. Many of the multi-layered panels on the market today have added urea formaldehyde. Columbia’s Europly PLUS® and DesignEdge™ products use a phenolic bonded platform to assure a no added formaldehyde panel end result. A 3/4" Europly PLUS® panel weighs about 85 lbs, while a DesignEdge™ is about 63lbs.

**Particleboard (PBC)** — Raw PBC is composed of wood particles which vary in size bonded together with urea formaldehyde or, by special order, no-added urea formaldehyde systems. PBC is the least expensive core option for hardwood plywood, offering a smooth, void-free surface for veneer faces. PBC is very uniform in thickness and density. PBC is one of the heaviest core options for hardwood plywood construction, weighing as much as 100 lbs per 3/4" panel. PBC has the least amount of structural (spanning) strength compared to the other core options and is subject to the greatest amount of expansion if exposed to moisture. PBC is a preferred core for fixture and low-end furniture applications including Ready-To-Assemble furniture. It is also used in selected kitchen cabinet components. NAUF particleboard products are sold at a premium.

**Medium Density Fiberboard (MDF)** — MDF is made in a production process similar to PBC except that all of wood particles are small and uniform like sawdust. MDF offers great stability and is the least likely to react when subjected to a measurable change in temperature or humidity. It offers a very smooth, void-free surface for veneer faces. MDF has greater strength and screw holding properties than particleboard and weighs around 100 lbs per 3/4" panel. MDF is used in cabinets, furniture, fixtures and molding. MDF is highly recommended for thin panel applications such as door inserts for cabinets and paneling. MDF products are most often manufactured with urea-formaldehyde resins. There are several no-added urea formaldehyde resin MDF products which utilize either polymeric methyl diphenyl isocyanate (MDI) adhesive or phenolic resin, available at a premium.

**Combi-Core Panels** — Constructed of veneer core inner plies with particleboard or MDF crossbands. Offers similar strength and stability to veneer core but has the void-free surface quality of PBC or MDF. Excellent substrate for thin sliced woods and rotary woods, reducing the potential for core transfer. Combi-core panels, like ClassicCore™, tend to offer more consistent tolerances than standard veneer cores.

**To learn more about the variety of core types available and which ones will meet your specific project needs and price point requirements, contact one of our regional sales numbers to speak to a trained Columbia representative.**

All of Columbia's core options are available as FSC® certified upon request.



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