Plywood for woodworkers

FOUR TYPES ARE ALL YOU NEED

BY TONY O'MALLEY

In my business making custom built-in cabinetry, I use more plywood and other sheet goods than solid wood. Whether I'm building kitchen cabinets, TV enclosures, window seats, or library shelves, manufactured panels of one type or another make up the lion's share of a project.

The secret to working with sheet goods is to master the balancing act of looks, strength, and cost when buying the material. Buying the best-looking plywood for every piece of a project can be an expensive proposition, particularly when less pricey sheet goods will work just as well, or even better, for painted cabinetry, drawer bottoms, shop furniture, or woodworking jigs.

Sheet goods have a lot of advantages over solid wood for certain projects. When making large or wide surfaces, sheet goods cost less, are stronger and more stable, and resist warping better than solid wood. They're also time-savers, since they needn't be jointed or planed.

There are dozens of varieties out there, but just four types will cover your needs. The first is furniture-grade plywood, which is distinguished by its high-quality face veneers. But you pay a premium for that quality, so this material should be saved for surfaces that will be displayed prominently. Cabinet-grade plywood, which has surface defects like knots, pins, and mineral stains, is cheaper than furniture-grade plywood, and is ideal for painted or hidden surfaces. Then there's multi-ply plywood, usually Baltic birch, which is suitable for drawer boxes, jigs, and other shop tasks. Last is medium-density fiberboard (MDF), a sheet good made of fine wood particles compressed and glued together. It makes a remarkably flat and inexpensive material well-suited for jigs, shop furniture, and as a substrate for veneering and countertop laminate.

Learning the different ways each is used—along with some lumberyard lingo—will help you pick the best panel for your project.

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THE FAB FOUR

Whether you're building kitchen cabinets, drawer parts, templates, or workshop jigs, these four go-to sheet goods can handle a huge variety of woodworking tasks and get you through a project more quickly and, in most cases, less expensively than solid wood. Learn to make the best choice by weighing the strengths, weaknesses, cost, and availability of each one.

Photos: staff

Surface perfection. *Using a furniture-grade, cherry plywood for this built-in gives a fine furniture look without the warping and instability of solid wood. Plus, it's less expensive and easier to work with.*

Furniture-grade is best in show

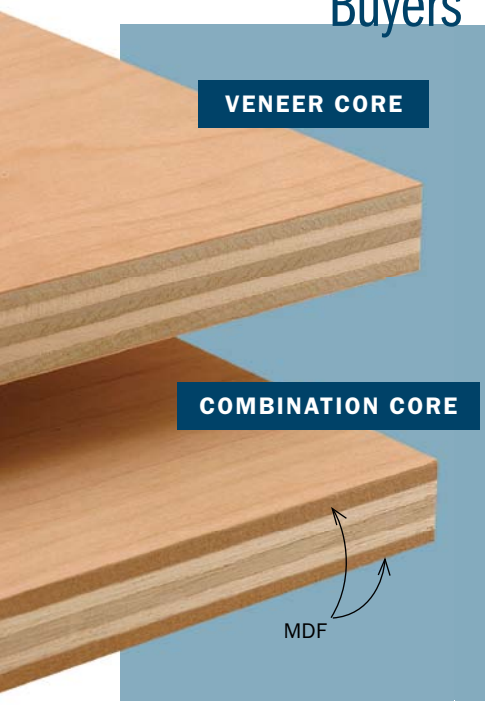
Pick furniture-grade plywood for large, conspicuous wood surfaces, and then choose a core suitable for how the panel will be used. For open casework, such as a bookcase or fireplace cabinetry, select veneer-core plywood with an A1 or A2 grade (see "Making the grade," below). Veneer-core is the lightest of the plywoods and holds screws best, making construction much easier. Because it is light, it is less likely to sag when used for shelving or other long spans. Plus, it's easier to reinforce its edge by screwing it to a cabinet case or other support. In most cases, go with ¾-in. thickness.

On desktops and similar surfaces where flatness is critical, ¾-in. MDF-core panels are a better choice. They also tend to have better veneers and fewer flaws. In ½-in. and ¼-in. thicknesses, MDF-core is the best choice for cabinet doors or other framed panels, since its ultra-flat surface will look better when finished. Combination-core plywood works well in any of those situations, too. It combines the best of both worlds—the flatness of MDF and the holding power of plywood—and is an excellent all-around choice.

The best bet for purchasing furniture-grade panels is a retail lumberyard. Wholesale plywood dealers will sometimes sell to non-professional builders, usually on a cash-and-carry basis. Choosing between the three cores often depends on availability. As a rule of thumb, opt for the most flattering veneers available on a core that makes sense for the project at hand.

Prices can vary widely depending on the hardwood and core. For a 4-ft. by 8-ft. sheet of ¾-in. cherry, expect to pay between $115 and $150 for an A-1 grade, with veneer-core being at the costlier end of the spectrum.

Buyers' guide to furniture-grade plywood



CORE CONSIDERATIONS

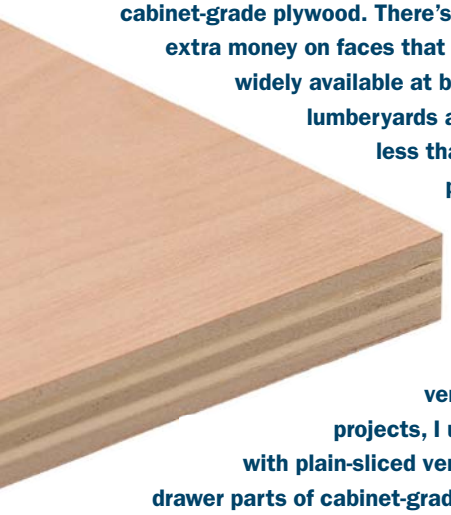
For cabinetry and built-ins, I typically buy three different core types of furniture-grade plywood: veneer, MDF, and a combination of the two. Veneer-core panels are the most common, lightest, and usually the most expensive. They can be fastened easily, but any flaws in their cores can telegraph to the face veneer, showing up after they're finished. MDF-core panels have a smooth, easily finished surface, but are very heavy and don't hold fasteners as well. Combination-core panels are a hybrid. Their inner cores are made of hardwood plies, sandwiched between layers of MDF. They combine the strength and screw-holding properties of a veneer core with the surface perfection of an MDF core.

MAKING THE GRADE

Grades for face veneers on domestic plywood use a letter-number combination. The better face receives a letter grade (AA, A, B, C, D, E) with "AA" being the best, and the opposite face receives a numerical grade of 1 through 4, with 1 being the best. Furniture-grade plywood is an AA or A grade. I most often use A-1 or A-2 panels, which have excellent-looking face veneer on the front, and a veneer that is very close in appearance on the back. For cabinet-grade plywoods (see opposite page), I usually use a B-1, although home centers often sell "C" grades as cabinet-grade stock.

Drawings: Vince Babak

Cabinet-grades work behind the scenes



For painted or hidden surfaces, such as the backs and sides of cabinetry or drawer parts, go with cabinet-grade plywood. There's no need to spend extra money on faces that no one sees. Plus, it's widely available at both home centers and lumberyards and costs significantly less than furniture-grade panels.

Cabinet-grade plywood is almost always veneer-core and has rotary-sawn or plain-sliced veneers. For most of my projects, I use B-grade maple with plain-sliced veneers. I also make drawer parts of cabinet-grade plywood, and use solid-wood edging to cover the cores.

Cabinet-grade plywood can be used for jigs and other woodworking accessories and fixtures. It is a bit pricier and less flat than MDF, but it holds screws better.

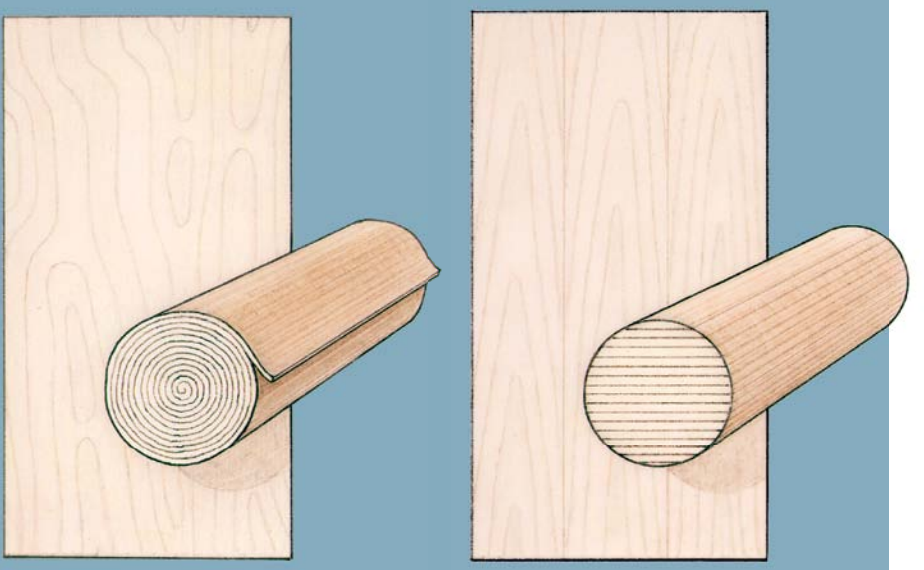
Home centers sometimes sell cabinet-grade plywood, commonly with red oak, maple, or birch veneers. Depending on the hardwood, a ¾-in. sheet of cabinet-grade material can vary from $45 to around $80 for a 4-ft. by 8-ft. sheet.

Shop furniture. *Cabinet-grade, veneer-core plywood holds screws well and is inexpensive, making it an excellent choice for shop furniture like this planer cart.*

Cabinets, too. *Use cabinet-grade plywood for painted cabinetry, such as these kitchen cabinets. Buying it prefinished with a clear coat is great for interiors, saving time and adding minimal expense.*

TWO WAYS TO SLICE VENEER

Plywood veneers are commonly cut from logs in two ways. Rotary-cut veneer is peeled like a paper towel from its roll, producing a seamless, single-piece face. It's economical but more bland-looking, making it better suited for cabinet-grade applications. Plain-sliced veneer is cut across the width of a log just the way lumber is. Usually it is random-matched, which can be more natural-looking. It also can be book-matched, which produces mirror-image grain patterns. If you need several panels and are planning to use a clear finish, ask for sequential panels, which will have similar color and grain characteristics.



ROTARY-CUT PLAIN-SLICED

Multi-ply fills many roles

Multi-ply plywoods are manufactured from thinner plies than normal veneer-core plywoods. They are pricier, but have cores that are virtually void-free, and surfaces that are flatter than regular veneer-core plywood. They are also the only plywoods attractive enough to be used without edge-banding.

Multi-ply is a good choice for drawer parts, and its flatness and screw retention make it the best choice for jigs and shop furniture, too.

Baltic birch is the most common version, but Finnish birch, Russian birch, Appleply, Europly, and similar plywoods are also available. It's rotary-cut, and graded differently than standard plywood. Baltic birch, for instance, has both sides graded—from B, to BB, CP, and C, with "B" being the highest.

It's usually available through lumber dealers only. In ¾-in. thickness, a 5-ft. by 5-ft. sheet costs about $75 to $90, and a 4-ft. by 8-ft. sheet costs around $110 to $120.

Distinctive drawers. *Multi-ply is a good choice for drawer parts, as its void-free edges are attractive as is.*

MDF is a shop workhorse

MDF is a versatile, widely available sheet good that will work for a variety of furniture projects and woodshop tasks. Price is the main advantage: A 4-ft. by 8-ft. sheet of ¾-in.-thick MDF costs less than $40.

MDF's stable, smooth faces make it an excellent material for cabinetry, door panels, and other projects that will have colored lacquers or paints. Plus, the edges can be shaped with a router bit, sanded smooth, and painted. Its ultra-flat surface makes it an excellent material for laminating with veneers or countertop material, or building jigs and workshop templates—particularly if they're curved.

There are a few downsides. At around 90 lb. per sheet, MDF is heavy, although some dealers sell "lightweight" versions that can reduce the weight by up to 30%. It does not hold screws well, although specialty fasteners such as T-nuts or Confirmat screws can help when joining pieces. Cutting MDF produces a lot of fine dust, so dust collection is a good idea. Water is a problem, too: It will cause MDF to swell and lose its structural integrity, so avoid uses where it will get wet, such as countertops or toe-kicks in a kitchen.

Top choice for templates. *When building tenoning jigs or other jigs, MDF's flatness and cost make an excellent choice. It's easily shaped, too, making it a go-to material for templates.*

Flat panels. *For painted, flat-panel doors, MDF will resist warping better than plywood. Glue it into the grooves for added stability.*