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## PROS & CONS OF PVC

### PROS

- Won't rot.
- Doesn't have to be painted (but can be).
- No defects; consistent.
- Easy to cut and machine.
- Readily available.

### CONS

- Not designed for structural use.
- "Plastic" appearance if left unpainted.
- Machined edges require priming and painting.

# PVC "Lumber"

**Create long-lasting outdoor projects with a material that's as easy to work with as wood, but won't rot like it.**

**Y**ou expect to find PVC (polyvinyl chloride) in the plumbing department. But you may be surprised to learn that PVC is becoming commonplace in the lumber department, as well.

There, you'll find a wide array of exterior moldings, from brickmold to door frames, made from PVC. You'll also see PVC "lumber" in standard dimensional sizes that are commonly used as exterior trim (*Photo, above*).

The promise of PVC products is impressive (*left*). They'll outlast wood, and they're maintenance-free. They resist seasonal movement. And the

pre-primed surfaces won't discolor from exposure to sunlight. That means you can use PVC to build outdoor projects that will look good for years to come. And that's exactly why we chose PVC to build the windows in our garage-door makeover on page 60.

If you've worked with PVC pipe, you know it's brittle and tough to cut cleanly. But PVC lumber is made with "cellular" PVC that has millions of tiny, uniform air bubbles. They make the material more pliable and give it excellent working properties. You'll get excellent results using standard woodworking tools and techniques.

## CUTTING PVC

For a woodworker, PVC lumber's easy workability has to rank as one of its top attributes. In fact, it's easier to machine than wood in some ways, thanks to its consistency and lack of defects.

**On the Table Saw** — Cutting PVC lumber on the table saw is a straightforward process. The “boards” have predictably straight edges that yield accurate rips and crosscuts.

Because PVC lumber is flexible, though, you do need to ensure that you have adequate stock support when working with long pieces (*Photo, right*). As you cut, make sure that you use a steady feed rate, and keep the workpiece moving to avoid gouges or burns on the cut edge.

This flexibility is especially a factor when cutting thin PVC stock. The impact of the blade can cause the workpiece to “chatter,” so use a wide push block to keep thin stock pressed against the saw table (*Photo, right*).

**An Easy Rout** — At first, I was skeptical that PVC lumber could be routed successfully. I figured it would be too soft to hold a crisp profile, or the spinning bit would simply melt the material. But I quickly discovered that PVC doesn't melt and, in fact, routs very well for two reasons.

First, PVC has no grain structure like wood, so it routs the same whether routing across or along the length of



PVC lumber cuts easily because it's so “soft.” But that softness also makes the material flexible, especially when working with long or thin pieces. Be sure to use outfeed supports to hold long stock flat as you cut (*above*) and wide push blocks to hold thin stock against the saw table (*below*).

a workpiece. Tearout is almost nonexistent. Second, PVC holds crisp edges and profiles amazingly well, and most of them can be routed in just one pass.

To get the best results, feed the workpiece steadily at a moderate rate. Router speed has little effect on cut quality, but routing at full speed produces a lot of dust. If you have a variable-speed router, setting it to about 15,000 rpm produces fine shavings that are much easier to collect. Dust collection is a must, too, because the static-charged shavings will cling to everything.

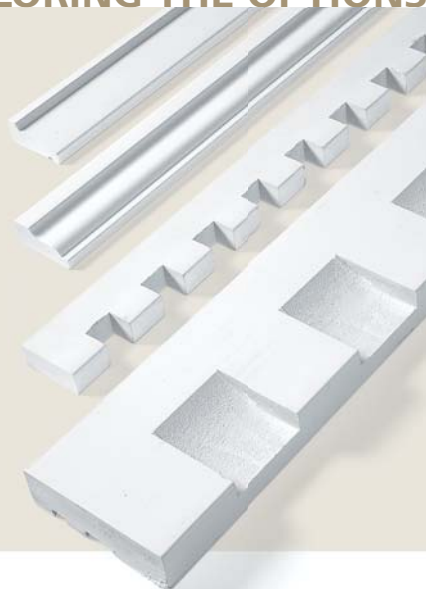


Profiles that might have to be routed in two passes in wood often take only one pass in cellular PVC.

## PVC MOLDING: EXPLORING THE OPTIONS

Though PVC can be cut and shaped using woodworking tools, chances are that you won't even need them in order to trim out the exterior (or interior) of your home. That's because PVC molding is available in dozens of profiles. A few examples are shown at right. That makes it easy to get the look you're after, or to match existing wood moldings on your home.

And unlike intricate wood moldings, which are more prone to rot because of their complex shapes, PVC moldings are as maintenance-free as any other PVC product.





For many PVC lumber glue-ups, clamps aren't necessary. Just spread cement on one piece, rub the two together, and then hold them together with firm pressure for about 15 seconds. The bond is strong right away.

## GLUING AND FASTENING PVC

In any project, but especially one that will be exposed to the weather, the quality of the assembly can mean the difference between success and failure. PVC lumber glues up exceptionally well; it has good screw-holding ability; and it can be nailed in place, as well. And since PVC doesn't absorb moisture or expand and contract as much as wood, assemblies will stay together for the long haul.

**Good Glue-Ups** — When you're ready to glue up assemblies made of PVC, standard PVC pipe cement is the adhesive to use. It's available in the plumbing department.

If you've glued up PVC pipe before, you know how the adhesive works. It effectively "welds" the mating pieces together as the adhesive melts into the joint. And, just as when assembling pipe joints, no clamping is required. Simply rub the two pieces together, hold them for a few seconds, and you're done. The joint holds together almost instantly.

This "friction welding" technique also works very well with PVC lumber.

And you can even make strong end-to-end joints that wouldn't hold together at all when gluing wood (*Photo, left*).

Of course, you can clamp up PVC assemblies, too, like the glued-up panel in the *Photo*, below. But there are two things you need to keep in mind. First, the "open time," or the amount of time you have to get the joint assembled, is less than a minute with PVC cement, so a dry-assembly is a must. The good news is if the cement hardens before you can get the joint together, all you have to do is brush on a new coat of cement and then reassemble the joint.

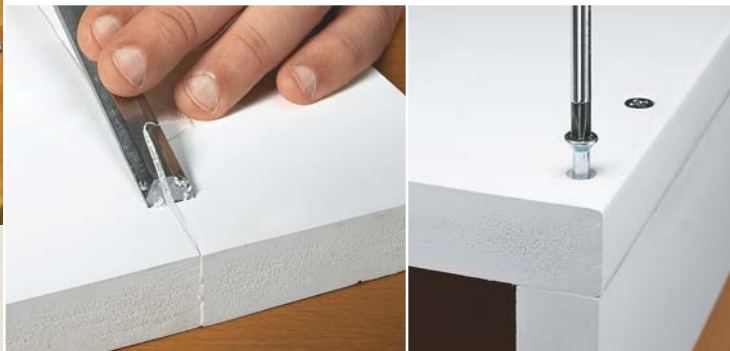
The second consideration is to use much lighter clamping pressure than you would when gluing wood. The cement melts the PVC, meaning too much clamp pressure can actually deform the mating edges. So tighten the clamps only enough to draw the joint closed.

As a rule, you'll want to apply a pretty thick coat of cement. That will result in some squeeze-out, but it can be pared away with a chisel once the glue hardens, usually a few hours after assembly (*Middle Photo, below*).

**Success with Screws** — Another time when PVC lumber's lack of grain structure pays benefits is when joining pieces with screws. The material offers plenty of holding power no matter what direction you drive the screws in. As usual, you'll need to drill shank holes in the "front" piece, but pilot holes in the mating piece aren't necessary. Countersinks should be shallower than normal, as the screw head will pull into the material as it's tightened (*Right Photo, below*). When you drive in the screws, do it by hand to prevent them from stripping out.



Whether joining PVC lumber with glue (*above*) or screws (*far right*), it goes together easily and holds well. Excess glue is easy to remove (*near right*).



## COLOR AND PAINT

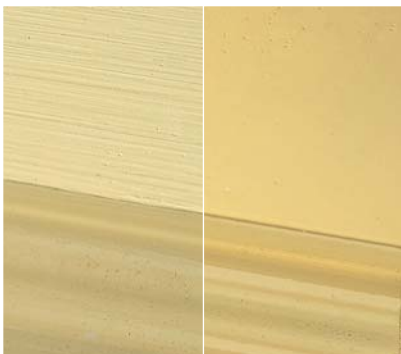
The one complaint I've heard about PVC lumber and molding is the way it looks in its raw form. With its lack of grain structure and its uniform texture, PVC definitely has a "plastic" look when you examine it closely that makes it clear it's not wood.

But the solution for giving PVC a more traditional appearance is easy — paint it. And once it's painted, you'll be hard-pressed to tell that the material isn't real wood.

Of course, if you want to leave PVC lumber raw, that's just fine. It comes with a factory-applied coat of white paint that can be left exposed or used as a primer under either oil-based or latex paint. And a few manufacturers offer brickmold and door jambs in tones that match popular window colors (*Photo, right*).

Even if you plan to leave the PVC raw, though, you'll have to prime any edges that have been cut or machined, as well as any areas where you have sanded through the factory-applied paint coat. This is necessary to protect it against exposure to UV light. It also seals the open "pores" to prevent dirt from accumulating in them. Standard white primer matches the factory color well.

**Get Your Fill** — Before you can paint, though, you'll probably have nail or screw holes to fill, along with any nicks that can't be sanded out. Standard wood fillers, as well as vinyl spackle or painter's putty, can be used with good results (*Photo, above*).



A brushed paint finish makes PVC look like painted wood (*left*). Spray paint gives a glossy appearance (*right*).



Holes and gouges in PVC lumber are easy to fill using either plastic wood filler or vinyl spackling. Overfill the hole, let the filler harden, and then sand it flush with the surrounding surface. Finish up by applying a coat of primer.

**Brush or Spray** — When it comes time to paint, you can either brush or spray it on, depending on the appearance that you're after. When brushed, PVC lumber looks just like painted wood (*Photo, bottom left*). If you want a super-smooth finish, you can spray on the paint. Again, the uniform texture means you'll get a glassy surface without much sanding or other prep work (*Photo, bottom right*).

Whether you brush or spray, the paint goes on easily. Thanks to the factory base coat, you'll get good coverage with just one or two coats of paint.

**Lighter is Better** — When looking at information on PVC lumber, I did see one common caution when it comes to painting. Most manufacturers recommend against painting the material with dark colors. Dark colors absorb more heat, which can cause the PVC to expand more than it normally



PVC door jambs and brickmold are offered in a few colors that match common window colors.

would. That could push joints apart or cause adjoining pieces to bind. So remember that you'll want to keep the colors light when choosing your paint scheme. 🏠

— Written by David Stone

## FOR MORE INFORMATION

To learn more about PVC molding, see available profiles, or get project ideas, check out the product information in home centers, or contact the following manufacturers:

- Royal Mouldings: 800-368-3117; [RoyalMouldings.com](http://RoyalMouldings.com)
- Azek Trimboards: 877-275-2935; [Azek.com](http://Azek.com)