Vinyl, Composite, and PVC Fencing

Improved quality and durability has fueled demand for fencing that's not made of wood

by Charles Wardell

Although most carpenters know how to build a fence, those who limit their offerings to wood may be missing opportunities. That's because demand is growing for alternative, low-maintenance materials such as vinyl, composite, and cellular PVC. They cost more than wood—on average, a high-end vinyl fence will cost twice as much as one made from pressure-treated wood, and a full composite fence system 50% more—but a growing number of customers are willing to pay a premium for the reduced maintenance requirements.

If you've never installed these products but are considering doing so, here are some things to keep in mind.

High-End Vinyl

Ernie Yocum, owner of Austintown Fence Co., in Austintown, Ohio, says that vinyl now makes up half his business and that customer demand has increased markedly in recent years. Thank the quality of today's products for that rising demand. Some installers claim that a good vinyl fence will last for 40 years, and the big vinyl manufacturers offer transferable warranties of up to 30 years.

While Yocum is sold on the value of good vinyl fencing, he cautions that there's a learning curve for people who have worked only with wood. "You will cuss vinyl out the first time you use it, but eventually you will wish you had never seen a piece of wood," he says.

Not all vinyl fences are created equal, and professional fence builders thumb their noses at much of what's sold by big home centers—vinyl sleeves that slip over pressure-treated wood fence posts, and fence sections hung on metal brackets that are screwed through the vinyl to the

Once available only in white, high-end vinyl fencing now comes in a wide range of colors and wood-grain textures.

post—describing them as DIY products of inferior quality.

One problem with DIY-grade fences is that they tend to be made of relatively thin and brittle plastic—that's why the structural wood posts are needed. To demonstrate the difference, Yocum sometimes gives undecided customers a sample of the cheaper product, along with a piece of his high-end fencing, Certainteed's Bufftech. He tells them to go home and cut both before making a choice. "The better product will go to dust, while the cheaper one will shatter into chips."

Another drawback to bracketed fencing, says Yocum, is that it needs to step up a hill, rather than follow the slope of the land, as some customers prefer. That's because the 90° brackets can't be installed on an angle.

By contrast, most of the vinyl fencing that the pros use has rout-and-lock connections: Rails slip into pre-cut openings in the posts and are secured inside of the posts. The system ensures that rails lock into place while also giving them room to expand and contract with changes in temperature. The vinyl posts are thick enough to be structural, and bottom rails are reinforced with steel to make fence panels more rigid.

Unlike with wood posts that can be trimmed in place, there's no room for adjustment once a vinyl post has been cemented in its hole. The slots are pre-cut into the posts, so the posts must be installed at the exact finished height.

Because of the thicker material used in rout-and-lock fence systems and the fact that structural integrity doesn't depend on brackets, longer spans between posts are possible—8 or 10 feet versus 6 feet for most bracketed systems. Rout-and-lock fences are also more resistant to wind. For even better wind resistance, you can buy aluminum stiffeners to drop into the posts. When installed correctly and with approved stiffeners, some reinforced vinyl fencing can even meet Miami Dade County, Fla., wind requirements, the toughest in the nation. The stiffeners are also used to reinforce gate posts.

Some installers go further. The workers at Vinyl Fence America, in Laguna Nigel, Calif., set posts on below-ground footings, then fill the posts with concrete up to 4 feet above ground. They also embed a piece of rebar in the footing before installing the post. Other installers have expressed concern that the concrete will crack the vinyl, but the company claims that this isn't a problem.

New Color Choices

In addition to low maintenance, another reason vinyl fence has become so popular is the growing array of colors and textures that are now available. Once upon a time, the only choice was a white fence with a smooth and shiny surface. A few years ago, manufacturers started adding a limited number of color options, such as light tan and clay tones, but anything darker tended to have problems with chalking and excessive expansion. Today,

Resources

Vinyl

Certainteed
certainteed.com

Superior Plastic Products
superiorplasticproducts.com

Universal Forest Products
amarroso.com

PlyGem
outdoor.plygem.com

UltraGuard
ultraguardvinylfence.com

Composite & PVC

Moisture Shield
moistureshield.com

Fiberon
fiberondecking.com

Enduris
enduris.com

With Universal Forest Products' Amarroso fence, panels (top) and pickets (above) snap into rails without the need for glue or fasteners.

Improved color technology allows manufacturers to offer dimensionally stable, fade-resistant black vinyl fencing.

improved vinyl formulations allow for dark brown and even black fencing that manufacturers claim will perform well in most environments. And with improved manufacturing technologies, wood-grain patterns can be cost-effectively embossed on vinyl to provide the surface with more natural-looking color variegation.

In fact, these improvements in color technology have changed the way fence parts are made. Early products were monolithic—the vinyl was extruded in a single layer. Now, most are co-extruded: A thick inside layer and a thin outside layer are extruded at the same time and joined under heat and pressure to form a molecular bond. The outside layer, or capstock, contains the color and the UV inhibitors. The use of acrylic colors in the exterior layer of some products makes them less prone to fading than standard PVC. Some companies even extend their 30-year warranty to color retention.

Fiberon's composite fencing features a rout-and-lock system, where the rails are recessed into precut slots in the posts. The rails and posts are reinforced with wood cores.

Composite and Cellular PVC Fencing

Wood-plastic composite and cellular-PVC fences have solid pickets and rails, and sleeves designed to go over treated 4x4 posts.

Composite fencing is made from the same material as composite decking. Indeed, the two major players, Fiberon and MoistureShield, are primarily decking manufacturers. While MoistureShield makes pickets only (to fasten to wood posts and rails), Fiberon makes an entire system, with posts and rails made from Port Orford cedar covered by thin composite sleeves. A rout-and-lock system secures the rails to the posts.

One Fiberon representative I spoke with recommended that the company's composite pickets be fastened to rails with staples. He cautioned against using screws, because the composite expands and contracts more with temperature changes

MoistureShield's composite fence pickets are made from the same material as its composite deck boards and should offer similar performance.

Routed (rather than bracketed) rail-to-post connections can be installed so that the fence follows the contour of the land.

Enduris' Endwood capped PVC fence rails have a pair of 1-inch-diameter voids that can be reinforced with steel tubing. The pickets are also made of a capped cellular PVC, while post options include metal, routed PVC, and vinyl post sleeves.

than does wood. Of course screws are acceptable on composite deck boards, but those boards usually sit on joists spaced every 16 inches, whereas the pickets span 2 feet between horizontal rails, making the unsupported span more likely to bow and bend if the connections are too tight. Staples, which are thin and flexible, can move with the boards. Installers who prefer to use screws can compensate by over-drilling the screw holes—that is, drilling a 1/2-inch-diameter hole for a 1/4-inch-shank screw.

Besides its cost, a drawback of composite fencing is that it's quite heavy, with a 6-foot-long section weighing about as much as an 8-foot section of pressure-treated fencing. To reduce weight, some manufacturers have experimented with foam-filled pickets. While this technique can lighten the load by about 30%, it hasn't been widely adopted because it significantly compromises the rigidity of the pickets.

Another weight-saving alternative is to make fence components from cellular PVC. Enduris claims that its Endwood PVC fencing is 30% to 40% lighter than comparable wood-plastic-composite fencing. To improve long-term color retention, Enduris wraps its PVC fence components with an acrylic capstock. Its rails are extruded with a pair of voids that can be reinforced with steel tubing to reduce sagging. The company recommends ring-shank nails for attaching pickets to rails.

Of course, cellular PVC can be substituted for conventional fence-building lumber, too. Just keep in mind that it's more important to plan connection details to accommodate expansion and contraction of the material, and not to prevent rot. ❖

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