

Install a Vinyl Fence

The right site for vinyl fencing

Vinyl fences are far easier to install on level ground than on slopes. Most kinds of fence handle slopes by stair-stepping down them. That's not an option for most vinyl fences, though, because the holes in the posts for the rails are in set places, and posts aren't available in a variety of heights. Minor variations in grade can be dealt with either by letting the rails run out of level here and there, or by keeping the rails level and allowing the distance to the ground to vary a bit. How far out of level you can run a fence depends on the system, so check with your fence manufacturer or supplier.

We see what's above ground, but what matters most is below the post

BY ANDY ENGEL



Whether you're tired of looking at your neighbor's blue-tarp-covered 1970 Dodge Dart, or of seeing him gazing at your backyard hot tub, or if you just want to keep the deer out of your tulips, the solution is a fence. But that can bring its own issues. Depending on the material, fences can require regular maintenance. What if you don't have Tom Sawyer's people skills, and you aren't interested in spending your future weekends staining or painting your fence?

One solution is a vinyl fence. Like vinyl siding, once a vinyl fence is up, you generally don't have to do much to keep it looking good except give it an occasional bath. Vinyl offers another advantage: Many zoning codes require that the "finished" side of a fence face outward, leaving you either to look at the ugly side or to spend even more money on a second finished side. Vinyl fences look the same from either side.

As with any fence, a vinyl fence's longevity depends on the installation details. Think of wind loads and the sail area that a fence provides, and then of the number of fences you've seen that lean permanently to one side. How well any fence resists wind loads has much to do with the most mundane aspect of its installation: how well it's anchored in the ground.

Stay on the right side of the law

Before you even get near the drawing board, you need to be certain where the fence can go. Check with your town's land-use office to find out which zoning and building regulations apply. For example, in my town, I can build a fence right on the property line, but it can't be higher than 6 ft. above the existing grade. Other towns have different requirements, such as setbacks from the property line and restrictions on the types of fences allowed. Also, if you live in a subdivision with a homeowners association, find out its requirements. These are often more restrictive than a town's zoning regulations.

On site, start by verifying the location of your property lines. For this, you need a survey map of your property. You may have received one when you bought the property, or there may be one on file with your town's land-use office. Failing that, you might want to have one done, but that typically costs thousands of dollars.

Don't trust any monuments or driven pipes you might find that appear to be marking the property lines and corners unless you can verify them with a survey map. What looks like a property marker often isn't. And don't assume that your property line coincides with the street edge or with some established distance from the edge of the pavement. Road rights of way are wider than the pavement, and the distance from the pavement to the edge of the right of way may not be consistent.

Finally, call 811, the national number to request that your underground utilities be located. Not only is it the law—even for something as simple as a posthole—but it can save you from the consequences of sending your shovel through a gas or electric line. If you do have underground utilities, locate your new fence at least a few feet away from them.

Design for your property

Once you know where the fence can go, it's time to decide where it should go. If it's just to block a specific view, you might only need to fence one side of the property. If you want to create a private backyard or discourage unwanted guests, that's a different matter. When

STEP 1 LAY OUT AND DIG THE POSTHOLES

If you need a square corner, remember that any triangle whose sides measure 3, 4, and 5, or any set of consistent multiples of those measures (6, 8, and 10; or 9, 12, and 15, etc.), will have a square corner opposite the long side. You must know the location of the corner point and of one fence line. For accuracy, make a bigger triangle—say, one that's 6 ft. by 8 ft. by 10 ft. Drive a pin at the corner, and stretch a tape measure 6 ft. along the known fence line. Drive another pin at this point. Hook a tape measure on each pin. Where they intersect, at 8 ft. along the unknown fence line and at 10 ft. measured across the corner, is the third point of your right triangle.



1. MARK THE SPACING

Use upside-down spray paint and a tape measure to lay out the postholes.

3. LOOSEN THE DIRT

A shovel's best friend, this heavy-steel digging bar makes short work of rocky soil.



2. MOVE THE STRING

You don't want the string where you'll be digging. After establishing the fence line, set a parallel string a few feet away as the reference.

fully enclosing an area, don't forget to allow access for lawn mowers and back-of-the-house deliveries such as fuel oil or propane. And if you're only enclosing part of your property, consider access from the enclosed area to the rest of your land.

Next, measure the actual distance you'll fence. Once you know the length of each run, you can calculate material. Making each run of fence a multiple of the panel width avoids cutting and scrapping material. Still, scrapping a few bits of fence might be a small price to pay for enclosing more area.

Several kinds of posts are available. Most of what you'll use are line posts, but there are also corner posts, end posts, and gate posts, which frequently have internal steel reinforcement to carry the load of a gate.

For each run of fence, you'll need one fewer line posts than you have sections. Plus, you'll need to terminate the section with end, corner, or gate posts. If it's a corner, that post also counts for the adjacent run of fence. You'll also need one fence panel for each section, a cap for each post, and any gates and gate hardware.

Each post gets set in concrete and on a pad of gravel. For the fence here, I used two 40-lb. bags of pea gravel, four 50-lb. bags of fast-setting concrete mix, and one cardboard form tube (12 in. dia. by 2 ft. long) per post. Depending on how deep you have to set the posts, you might not need as much gravel. The forms are optional, but they save a little concrete because you only fill the form, not the entire hole. Also, the relatively smooth sides they give to the concrete reduces the chance of frost grabbing and lifting the posts.

Laying out the fence

Building the fence begins with layout, and layout always begins by finding where the ends and corners will be, then driving stakes or pins in the ground at those points. Stretch a tape measure (you might need a 50-ft. or even a 150-ft. tape) between the pins, and mark the location of each posthole on the ground. To keep the fence line straight, set up an offset string as a reference for locating the posts. A string between the end pins themselves would be in the way and would be useless after the first post was set. To set up an offset string, simply place a second pin 3 ft. to the side of each existing end pin. Stretch a string between these offset points, and measure from it as you set each post.

It's all about the holes

Holes are the most important aspect of fence building. Fences offer a lot of area to catch the wind, and what keeps a fence from blowing over is the posts' engagement with the ground. Don't be tempted to slack off and dig shallower holes. You owe it to your neighbors not to build a fence that will become a projectile in the next windstorm.

Each fence manufacturer specifies a minimum hole depth. In this case, it was 30 in. The post needs to be 24 in. into the ground, with an additional 6 in. of gravel below for drainage. It's best to dig the hole down to the frost line, however, even if that's deeper than the minimum suggested depth.

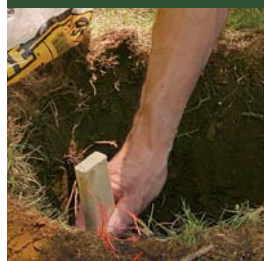
Be sure to fill the hole back up with gravel to the elevation of the post bases. If you don't, water in the ground below the post can freeze and expand in what's called a frost lens, pushing the post upward. Come spring, the frost lens thaws, leaving small voids below the post that partially fill in with dirt and prevent the post from settling back to its original level. Over time, the post is pushed out of the ground. Filling the hole with gravel might seem to defeat the intent here, but

STEP 2 PREP THE HOLES

After the hole reaches the required depth, tamp any loose dirt at the bottom, then add gravel so the bottom of the post will be 2 ft. below grade. Gravel drains freely, and it's cheaper than concrete. It's also easy to adjust the depth of the gravel to locate the bottom of the fence post accurately.



Dump in some gravel. Filling the bottom of the hole encourages drainage, which minimizes the chance of frost heave.



Measure with a story stick. Rather than measure each hole with a tape, cut a stick to the height of the form and use it to verify depth.



Set the form. Forms limit the amount of concrete used, and they make smooth sides that frost is less likely to adhere to.

STEP 3 MIX THE CONCRETE AND SET THE FIRST POST

Fence-post concrete should be wet enough that you can push the posts down through it. Mix the concrete in a wheelbarrow near the hole, then shovel it in.



Add water. Fill one end of the wheelbarrow with concrete mix, and start by adding a gallon or so of water to the other end.



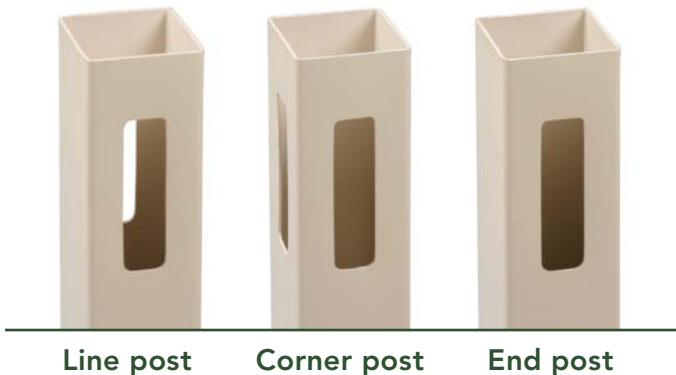
Mix it. Pulling from one end of the wheelbarrow to the other, mix the concrete to the consistency of loose oatmeal. Add water as needed.



Plumb it up. After pushing the post into the wet concrete, check for plumb, and brace it with some 1x boards, clamps, and wooden stakes.

Three vinyl-fence posts

Line posts have holes in two opposite sides for the rails. Corner posts have holes in two adjacent sides. End posts have holes in only one side. Gate posts are a variation of end posts, but usually with an internal steel reinforcing member.



gravel doesn't hold water. It gets wet, it drains. No water, no frost lens, no problem.

The shovel meets the ground

In this part of New England, the frost depth is 42 in., and we have very rocky soil. While in many other places postholes can be dug with power augers or with clamshell-type posthole diggers, those tools have limited use here. I find that a shovel and a steel digging bar are the most efficient tools, and there have even been occasions when I've rented a jackhammer to get through a rock.

Dig the hole for a corner or an end post first. Shovel out an area that's a little larger than the cardboard form. Once you reach the dense, rocky subsoil, bring out the digging bar. Its purpose is to loosen the rocks and soil more quickly and easily than a shovel can do. Thrust the bar into the ground, and lever it back and forth to loosen the earth.

Repeat the process, working around the perimeter of the hole. If you work the edges, the center mostly takes care of itself. After loosening a few inches of subsoil, shovel the spoils out. Because the hole will

STEP 4 ASSEMBLE THE FENCE ONE PANEL AT A TIME

When assembling the panels, always set and brace one post. Work the second post while its concrete is still wet, so that you can adjust it as you insert the rails and panel boards.




Set the next post. With the concrete still wet to allow movement, place the bottom rail in place.



Cap the panel. Place the top rail, then brace the second post.



Fill the space. Individual tongue-and-groove boards make up the fence panel.

 **To see a video series on installing this vinyl fence, visit FineHomebuilding.com/extras.**

be filled with gravel and concrete, most of what comes out has to be disposed of somewhere else, so shovel it right into a wheelbarrow.

Setting the posts and panels

Set the posts as each hole is dug. After making sure that everything needed to set a post is close at hand (post, clamps, a pair of 8-ft. 1x braces, and two wooden stakes), start mixing concrete. I use fast-setting mix so that by the time I've dug the next hole and am ready to set a post and a panel, the previous post is firmly supported.

I usually mix up four 50-lb. bags of concrete, which is enough to do one hole. Place the concrete into the form. When it's filled almost to the top, properly orient the hollow post, and push it into the wet concrete until it bottoms on the gravel. Eyeball it square to the fence line, and set it the desired distance from the offset string. Next, drive the two stakes in the ground, and plumb the post in both directions by clamping the 1x braces to it and to the stakes. The manufacturer of this fence, Veranda, says to place the post first, then shovel concrete around the post. I ignore this instruction for two reasons. First, push-

ing the post into the concrete minimizes splashes that will have to be cleaned off. Second, pushing the post in fills its center with concrete, making for a sturdier installation.

With the first post set, insert the next one, then install the rails and panels while the concrete is still wet. These panels have top and bottom rails with built-in channels to capture the ends of the panel boards. The panel boards have tongue-and-groove edges that engage the adjoining boards. No fasteners are needed, and the panels install quickly.

If you need to shorten a panel, cut the rails to length on a miter saw. It's easiest to make the shortened panel's length some multiple of the individual boards (plus 2 in. or so on each end to fit into the posts). If you can't do this, you may have to rip individual panel boards to width. Do this on a tablesaw with a fine-tooth blade. When the fence is up, all you're left with is cleanup, popping the post caps into place, and cracking open a cold one in the new privacy of your backyard. □

Senior editor Andy Engel is a former carpenter. Photos by Patrick McCombe except where noted.