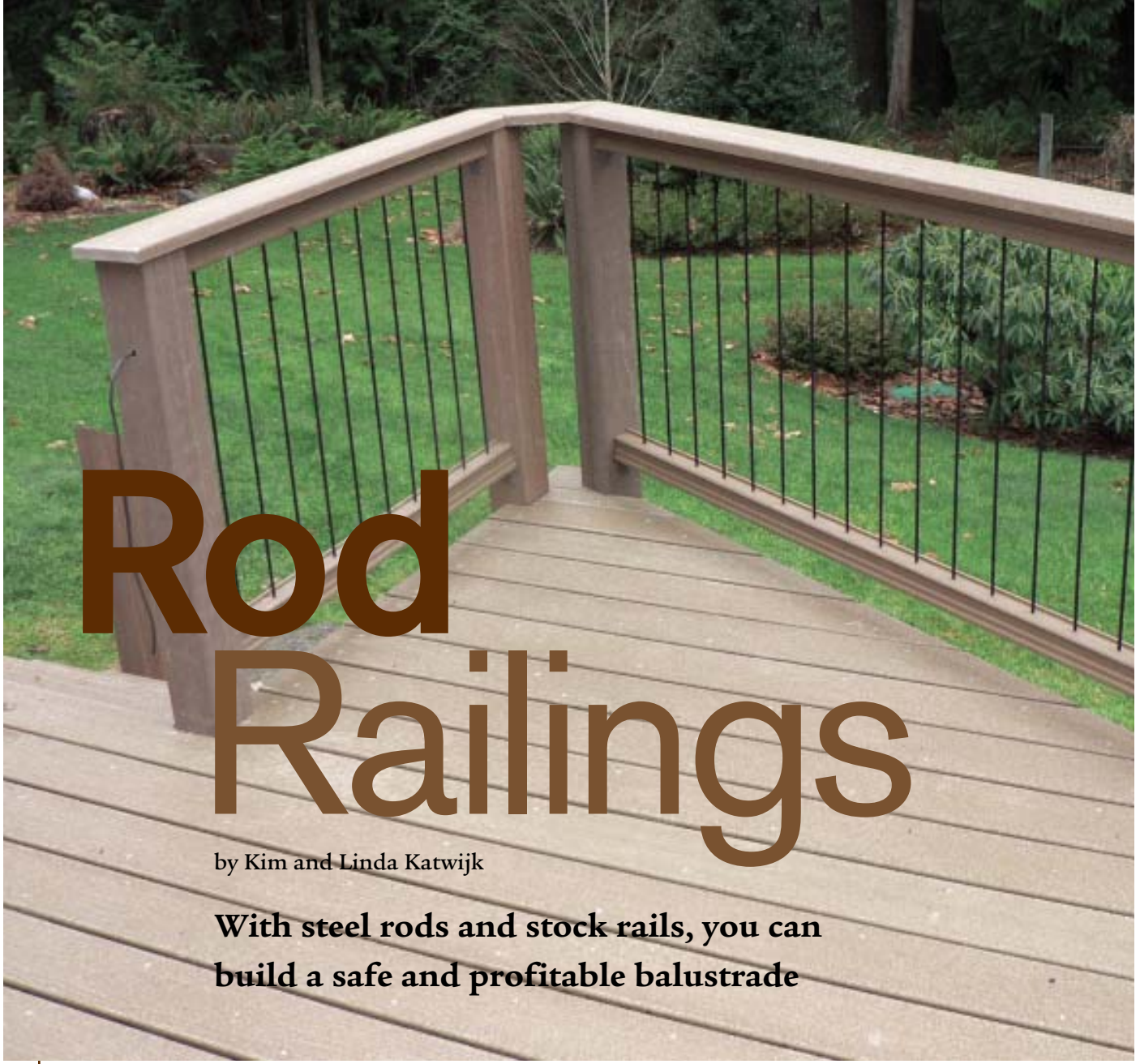

Rod Railings

by Kim and Linda Katwijk

With steel rods and stock rails, you can build a safe and profitable balustrade

Cable railing has a wonderful, inconspicuous look, but it also has a few drawbacks. For one, horizontal cables form a ladder that is dangerous for children to climb. And although vertical cables are safer, installation is more challenging: It's labor intensive, there are more cables to tighten, and it can be difficult to build rails that are stout enough to resist the tension.

After I installed vertical cable railing on two decks, I knew there had to be another option. My creative juices began to flow, resulting in the vertical-rod railing system described here.

Steel Rods

For the balusters, which are about the thickness of a pencil, I use 1/4-inch-diameter rods made either of stainless steel or of plain steel that I have powder-coated locally. The standard powder-coat color is black; the rods can be custom colored, too, but the advantage to black rods is that they virtually disappear when you view a landscape through them. For water views, stainless steel rods have a similar effect, as their silver color blends with the silvery appearance of the water.

Obtaining the rods will take a little initial legwork — you can't just go to any lumberyard and pick them up off the shelf. You'll need to find yourself a good metal-fabricating shop or a steel supplier. For a 36-inch-high guardrail, I order 1/4-inch-diameter cold-rolled steel cut to 30 3/4-inch lengths. The

rods need to be clean-cut at both ends and straight; don't accept bent rods.

After being cut to length, the rods go to a powder-coating shop. My powder coater stands the rods in 1/4-inch-diameter holes drilled in a piece of 1/4-inch flat steel bar. This allows the entire rod to be powder-coated, except for 1/4 inch of one end. I order them 1,000 at a time, and currently the cost of the rods with powder coating is $1.80 each. Stainless steel rods are more expensive at $2.34 each.

Composite Railing

Sometimes customers request wood, aluminum, or another composite as the framework for the rods, but mostly I build with EverGrain composites (Tamko Building Products, 800/253-1401, www.evergrain.com).

I use the company's Designer Universal Rail — which I call a "unirail" — for both the upper and lower rails. It comes in 12-foot lengths, and as long as the lower rail is supported every 3 feet, posts can be spaced as much as 6 feet apart. For a cap rail, I install a deck board over the tops of the posts, which gives the railing a clean line.

Figure 1. Stock pieces of EverGrain Designer Universal Rail form the frame for the author's vertical-rod railings. So he can use deck boards for the cap rail, he has removed the ridge from what will be the upper rail (right in photo), with a circular saw.

Assembling the Rods and Rails

I start building the railing after I've installed the 4x4 wood posts to extend 35 inches above the decking. I cover the posts with EverGrain post sleeves, and then cut the unirail to fit between the covered posts. To make a flat top on what will be the top rail, I use a Skilsaw to cut the 1/4-inch-by-1/4-inch ridge off the unirail (**Figure 1**).

Next, I lay out the rod spacing on the top of the bottom rail and on the bottom of the top rail. Assuming the rods will be installed on 4-inch centers, the space between the posts and the end rods may be less than 4 inches, but should be more than 2 inches.

Drill the holes in the unirail with a 9/32-inch drill bit (**Figure 2**), all the way through the top rail and halfway through the bottom rail. With unirail, it's easy to tell when you've drilled halfway, because there's a hole running lengthwise through the center of the rail.

Install the top rail first. Then put the bottom rail in place, and slide a rod into one of the two end holes. I use a piece of 4x4 to hold up the rail while I do this.

To set the bottom rail at the correct height, push it up until the rod goes through the corresponding hole in the upper rail and is flush with the top (**Figure 3**). Attach the bottom rail to the post on that end. Next, insert a rod at the opposite end of the rail and repeat the process. Remove the 4x4 block, and attach that end of the lower rail to its post.

After installing the rails to the posts,

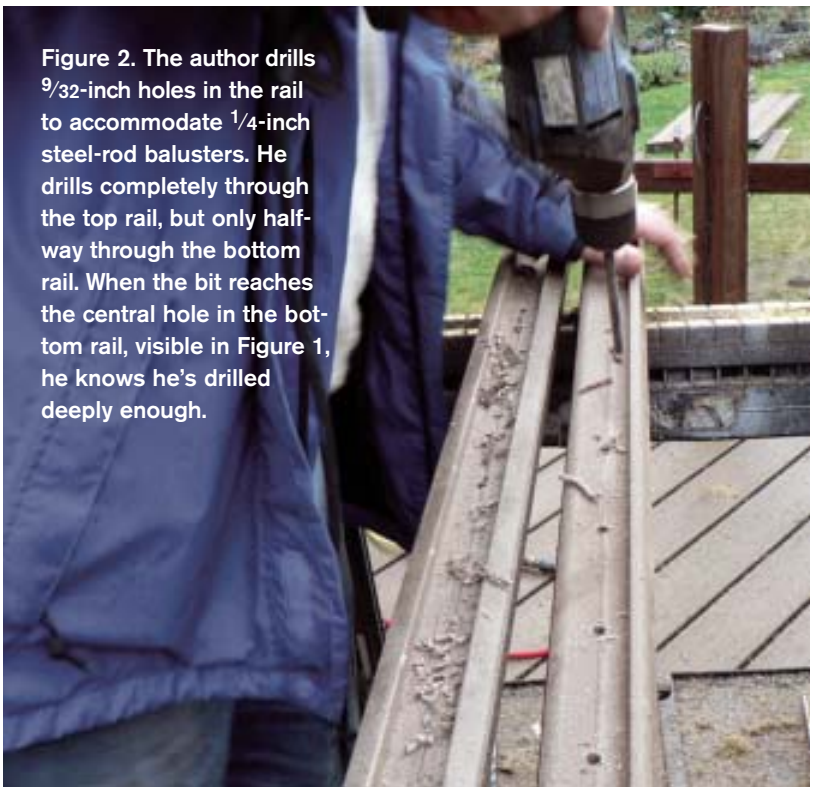

Figure 2. The author drills 9/32-inch holes in the rail to accommodate 1/4-inch steel-rod balusters. He drills completely through the top rail, but only halfway through the bottom rail. When the bit reaches the central hole in the bottom rail, visible in Figure 1, he knows he's drilled deeply enough.

Figure 3. After installing the top rail, rods precut to the correct length help determine the bottom rail's height. With the rod bottomed out in the lower rail, the author raises the rail until he feels the rod become flush with the top of the upper rail. That's when he screws home the lower rail's support bracket.

Figure 4. Holes in stair rails have to be drilled at the correct angle, which is easily measured using a level and a Speed Square (left). To make a drill guide (below) for the stair rails, the author drills through a scrap of decking and cuts it in half along the drill hole. He then cuts the bottom of the scrap to the angle he measured above.

slide the remaining rods into the holes with the uncoated end up. The rods should fit tightly in the holes and not rattle. Install the deck-board cap rail with stainless steel trim-head screws.

Guardrails on stairs are done in a similar fashion, but in this case, I drill the holes at an angle that I measure in place using a rail, a torpedo level, and a Speed Square (**Figure 4**).

I've used this system now for more than two years. Though I offer several other options, the rod railing has consistently been the No. 1 choice among the majority of my clients. I love it because it's easier to install than vertical cable railing — which also makes it more economical for the client and more profitable for me. Isn't that really why we're in the business, after all? ❖

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