# A Field Guide for **Prefab Railing**

# Manufactured deck railings are fast to assemble and look great

BY JOE CIARALDI

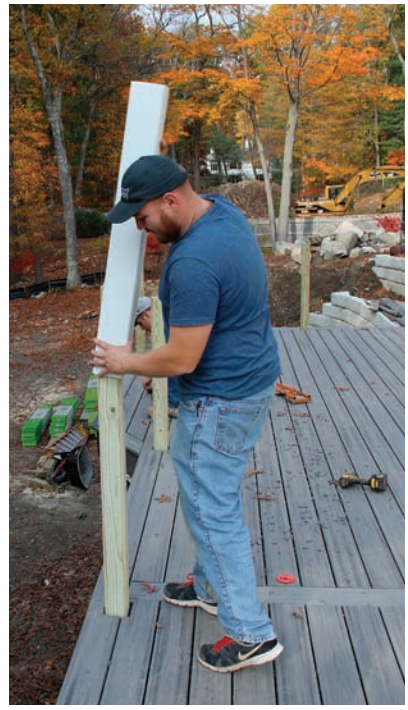
My Salem, New Hampshire-based remodeling company builds a lot of decks. Given our harsh New England weather and insistence on high-quality products, we almost always install manufactured railing parts rather than using wood. We've used several brands over the years, and all have performed well. Generally speaking, the way the various manufactured railing systems are constructed is pretty similar, but we prefer the Trex Transcend line because of the wide range of available rail and baluster styles and colors. The top and bottom rails, post sleeves, and balusters are made from Fibrex, a fiber-composite material made by Andersen Windows (used on their patio door sills, among other products). The railing components come boxed and prefinished, and installation is straightforward. Best of all, our clients like the look of the finished railings, the maintenance-free system, and the option to integrate low-voltage lighting if desired.

A relatively simple white guardrail free of curves, angles, or sloping sections runs about $175 per ft. in material costs. Colors cost more, as do more complicated layouts. The railings depend on 4x4 pressure-treated posts spaced every 6 ft. to 8 ft. The rail lengths are based on the on-center spacing, so they are are actually 67½ in. and 91½ in. long, which is important to keep in mind when you're ordering components and installing the posts. Because Trex designed the rails to work with multiple baluster styles, you'll find that baluster kits include style-specific matched inserts that snap into the universal top and bottom rails to space the balusters. We're careful to accurately order all the parts plus one or two extras of each because it usually takes a few days for our local lumberyard to deliver an order. □

Joe Ciaraldi is an award-winning carpenter and deck builder with Professional Building Services in Salem, N.H. Photos by Patrick McCombe.

## START WITH STURDY POSTS

Before installation, I run each post through the tablesaw to remove all four corners, making space to run low-voltage lighting cable. I fasten the structural posts to the joists and rim joist using self-drilling FastenMaster Thrulok fasteners. Then I reinforce the posts with blocking fastened to nearby joists with structural screws. Once the blocking is in place, I use additional Thrulok fasteners to connect the posts to the blocking. Fibrex sleeves make the pressure-treated posts maintenance-free.



***Slide on the sleeves.*** *The 4½-in.-square post sleeves are sold in 39-in. and 108-in. lengths. Cedar shims are used to plumb the sleeves once they're on the posts.*

***String the posts.*** *Once the sleeves are on the posts, stretch a string across the posts to ensure they are in line. If one or more is out of line, remove the sleeve and use a flat bar to shove the post over. A plastic shim or two is sometimes needed to hold the post in place before reinstalling the sleeve.*

***Follow the template.*** *With the four-sided base trim already slipped over the sleeve, use the included cardboard template to guide the placement of the plastic rail-support brackets. The rail-fastening kit includes zinc-coated, self-drilling screws.*

# FIT THE RAILS AND BALUSTERS

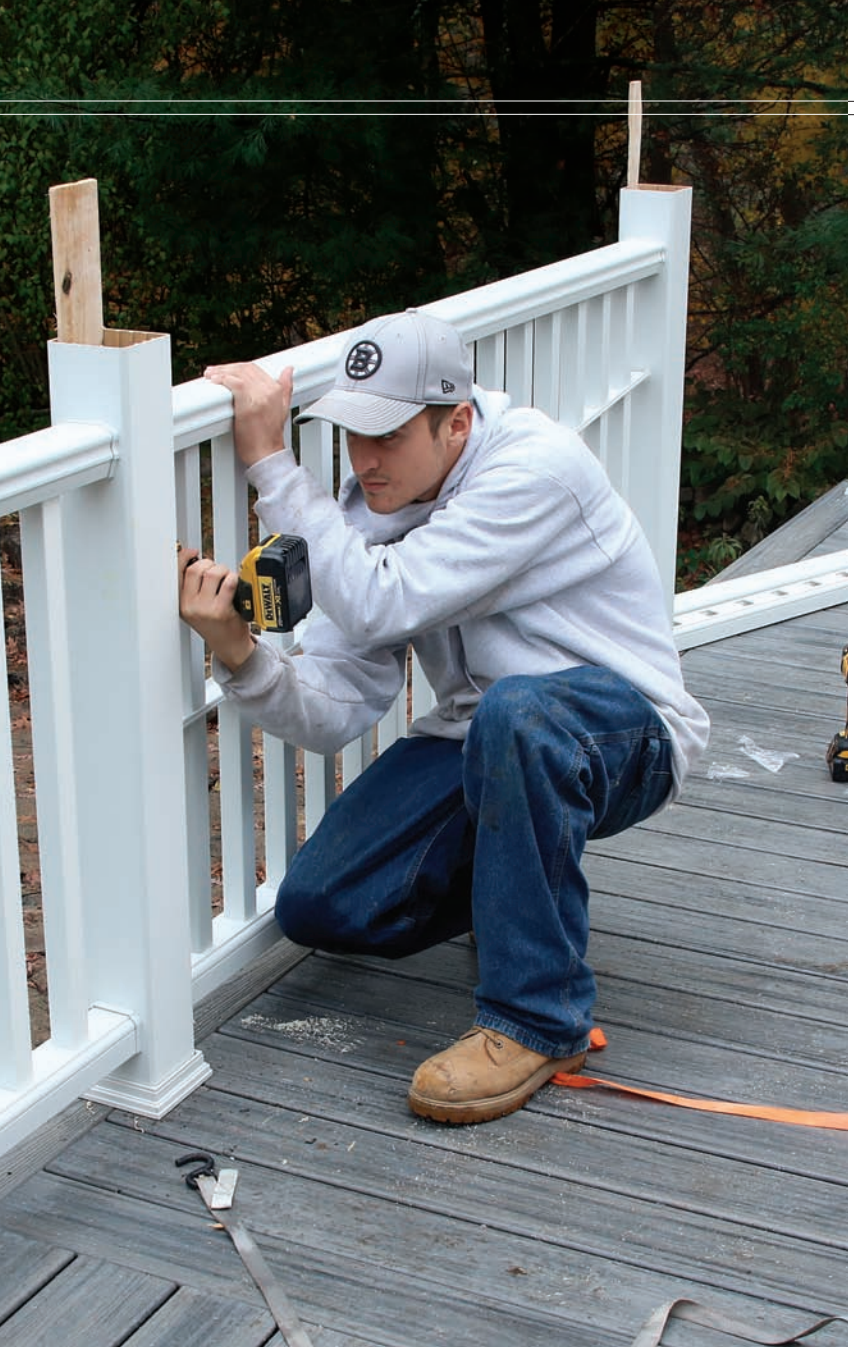
The rails, rail inserts, and balusters all work together to create a sturdy, code-compliant guardrail system. Once I've cut both rails, I fasten the bottom rail and place the top rail on support brackets, leaving it unfastened. I then install the balusters.

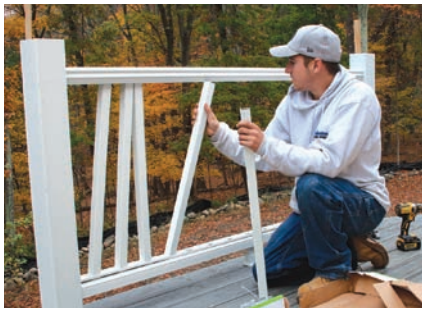
***Cut the rails.*** *Cut the top and bottom rails 3/16 in. short to allow for the trim pieces at each end. It's best to cut the rail section inserts at the same time to ensure the parts are the same length. Removing equal amounts from both ends evens the baluster spacing.*


***Fasten the intermediate support.*** *To prevent the rail from sagging, fasten the intermediate support to the underside of the bottom rail. When the rail is in its installed position, extend the support's telescopic foot to the decking. A pair of set screws with matching caps hold the support in its extended position.*

***Connect the rails.*** *With the U-shaped trim placed halfway onto the rails, drive screws through the brackets into the bottom rail and then the top rail, securing them to the post. Once the screws are driven, push the trim fully onto the rails.*

***Install the insert.*** *Designed to accommodate both round and square baluster styles, the rail sections include PVC inserts to space and secure the balusters. After the top rail is secured to the bracket, snap the lower insert into the lower rail and place the upper insert on top of it to prep for the baluster installation.*





***Fit the balusters.*** *The balusters are precut to make a 36-in.- or 42-in.-high code-compliant guardrail. Slip the balusters through both rail inserts and angle them to fit into the top rail's receiving channel.*

***Pull it tight.*** *Top and bottom rails must be cut to an exact length to ensure the posts stand perfectly straight. If necessary, draw the posts together with a ratchet strap to tighten the fit before fastening the top railing.*

***Slide up the top insert.*** *Once all the balusters are in place, slide the upper insert (which was placed on the lower rail) upward and snap it into the top rail. It's often necessary to move it gradually, switching from one end to the other.*

## Curves require a special setup

**ONE OF THE ADVANTAGES OF FIBREX RAILING PARTS** is that they can be heated to form curves. The ability to easily incorporate curves into our decks helps differentiate us from the competition, so five years ago we bought a CustomCurve heating oven from Trex. This $10,000, 9-ft. long, propane-powered oven can hold two pieces of decking or railing on slide-out racks that make it easy to get the parts in and out.

Depending on the part, it can take anywhere from a few minutes (for inserts) to two hours (for deck boards) to get the material soft enough to bend. Before bending, we place 1x4 PVC stock on both sides of the piece to prevent scuffs and encourage a fair curve. We set up the clamping table for the specific curve using a paper template made by scribing the deck frame. The table—also part of Trex's CustomCurve system—has an aluminum top that accepts clamps to hold a curve while it cools. We've found the table can sometimes flex, throwing off the curve, so we added steel framing underneath to reinforce it.

# WHAT ABOUT SLOPED RAILING?

Although it's installed much like straight railing, sloped railing for stairways requires a different hardware kit. The stair hardware has longer trim pieces for rail ends and an intermediate support cut to match the rail's slope.

***Scribe the fit.*** *With the rail resting directly on the treads, scribe the rail length and the angle of the miter using the posts as a guide. Reduce this measurement by 3/16 in. to account for the U-shaped trim that will be installed on both ends.*

***Mark the brackets.*** *Place the bottom rail on a 2x4 and temporarily attach the bracket to the post sleeve with double-sided tape. Then remove the 2x4 and move the lower rail out of the way.*

***Fasten the brackets.*** *With the bottom rail out of the way, you can now fasten the bracket to the post. The mounting bracket is sloped to match the rail (see below).*

***Pilot holes help.*** *Although the screws are self-drilling, pilot holes are helpful to get the screws started, especially when you're fastening the top and bottom rails to the support bracket.*

TOOLBOX

## Rail brackets do double duty

High-strength plastic rail-support brackets connect the top and bottom rails to the structural post. They include corrosion-resistant self-drilling screws.

Sloping rails use the same bracket as straight rails, but you have to use two instead of one at every rail-to-post connection. The two brackets are joined by means of a sliding dovetail molded into the plastic.

**Clip the long points.** *The sloped balusters have mitered ends and are meant to work with any code-compliant stair's rise and run. But clipping 3/8 in. off both long points allows the baluster to sit deeper in the receiving channel for a sturdier connection.*

***Trim in place.*** *We wait until the end of the railing install to trim the post sleeves. The easiest way to do this is with a cordless multitool equipped with a fine-toothed woodcutting blade. Any slight irregularities in the cut will be hidden by the post cap.*

***Cap it off.*** *Post caps come in flat and pyramid styles (prices start at $12). Both styles are designed to accept low-voltage lighting. Secure each cap with a bead of silicone where it meets the top of the post.*