

On the Job

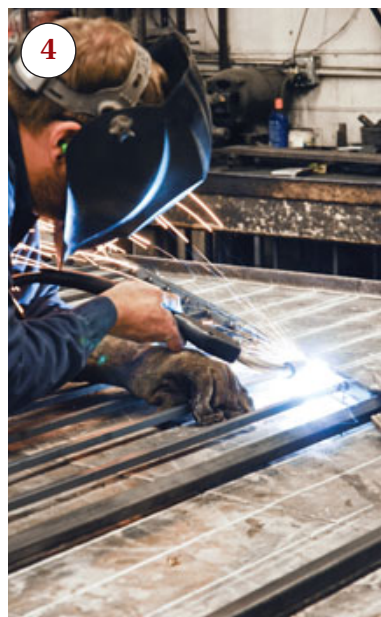
Solid, Classy, Wrought-Iron Rails

by Mark Petersen

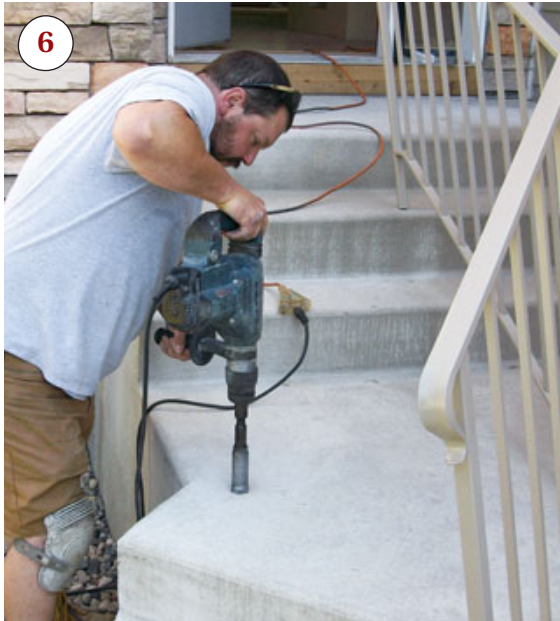
Our company was recently hired by a bank to finish a foreclosed townhouse project. Part of the work was installing handrails on the front stoops. A couple of the units already had wooden rails, but they weren't much to look at (1, 2). After considering various options — wood composite, aluminum, glass, stainless steel — we decided simple wrought-iron rails might look the best, given the style of the buildings. We got a quote from a local fabricator, Anchor Iron, and it turned out that wrought iron not only was within the bank's budget but was priced more competitively than some of the other choices.

When you think of wrought iron, you probably envision a sooty-faced blacksmith with large biceps hammering away on a glowing piece of ornate metal. But in fact, except for a small number of craft shops, most of today's iron work is done by cold bending, welding, and grinding. That black corrosion-resistant material traditionally used in the ornamental-iron business went out of production in the U.S. in the 1960s.

The first step of the job was to make careful site measurements, which were taken by Jim Roberts, the owner of Anchor Iron (3). He wanted to make sure that the rails would meet the Minnesota building code, which states that a 4-inch sphere should not be able to pass between



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the balusters, nor a 6-inch sphere through the triangular space under the bottom rail.

At the shop, the field measurements were converted to a CAD drawing for accuracy, and the manufacturing began. First, all the pieces were cut to size and the rails were shaped as needed with a bending machine. A hydraulic press punched holes into the rails for the baluster spindles, and the various pieces were then welded together (4). Finally the rail was made ready for paint by thorough, careful grinding (5), after which it was sent to the finish room. Whenever possible, Anchor Iron immerses its creations in a vat of industrial oil-based primer. When that dries, the final coat is sprayed on. The finish typically holds up for 10 to 14 years without maintenance.

Back on site, Jeff, the shop's installer, used a hammer drill equipped with a core bit to make holes in the steps (6). He was careful to stay at least 4 inches from the edge to avoid cracking the concrete during the drilling process. After dry-fitting the railing and checking for level and plumb, Jeff mixed up a small batch of Super Flow-Rock (lyonsmanufacturing.com, 214/381-8100), a rapid-setting nonmetallic hydraulic cement designed for anchoring metal to concrete. He poured it into the holes (7), allowed it to set up for about 20 minutes, then cleaned it up with a trowel. After 24 hours of cure time, the railing was solid.

The railings cost about \$70 per linear foot. By comparison, a finished cedar railing would have cost about \$36 per foot. On another recent project, we paid \$85 a foot for a curved aluminum rail. Overall we were very pleased with the results — and more important, so was the customer (8,9). While wrought iron might not be the right choice on every project, it's hard to beat its strength and durability.



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