

Steel-Cutting Circ Saw Blade

by Dave Crosby

The *SteelPro* from DML (Item #72803) is a 7¹/₄-inch 38-tooth carbide blade designed to cut steel (see Figure 1). According to the manufacturer (Primark Tool Group, 1350 South 15th St., Louisville, KY 40210; 502/635-8100), this blade is recommended for thin-gauge ferrous metals, but it will cut steel up to 1 inch thick if it is softer than Rc-25. The blade is also supposed to cut rebar, galvanized steel, nail-embedded wood, Schedule 40 PVC or cast iron pipe, steel studs, and fiberglass.

Does It Work?

If these claims are true, this blade would be an outstanding addition to the toolbox. Steel angles, channels, and plates up to about 1/2 inch thick can solve a lot of problems on the site, but residential contractors don't use steel very often because most of them don't own tools for cutting and fitting steel. Those that do rarely find it worth the trouble to lug their oxyacetylene torches to the site to make a couple of cuts.

A circular saw blade that could cut

rebar would also be a real boon on site. A regular rebar cutter handles #4 grade 40 rebar easily, but what do you do when the engineer specifies #5 grade 60 bar? Material this size is hard on ordinary rebar cutters and even harder on the worker trying to cut it. And if the rebar is any bigger, forget it.

So I approached this test thinking that if this blade works the way it's supposed to, we're in luck. As it turns out, the actual performance didn't meet my expectations, but this blade could still come in handy.

The Trial

I only had the one blade, so I started off with some easy cuts. In a Skil worm-drive with the depth of cut set 1/2 inch deeper than the work, this blade sliced through 3/16x2 1/2-inch angle iron effortlessly, making four cuts with no apparent load on the blade or the saw. Likewise for 1/4x1 1/2-inch angle.

Encouraged by these results, I tried a dozen cuts through one side of 3/8x4-inch angle. Each cut took less than 15 seconds, and was smooth, clean, and as

good as any other cut in any other material you'd use a circular saw for (Figure 2). As a side benefit, the cut doesn't have to be lubricated with oil so your work stays clean, and the material is cool to the touch immediately after the cut because the heat is dissipated in the chips. The chips do get very hot, though.

Since the local steelyard charges me a dollar a cut, I figured I'd get my money's worth if this \$65 blade could make 50 or 60 cuts, affording me the luxury of fitting the steel on site instead of guessing at the yard. After 18 cuts, the blade showed no signs of slowing down.

Rebar. Unfortunately, I just couldn't resist the lure of a blade that would cut rebar, so I had to try. I'm sorry to report that this blade is no match for #5 bar (Figure 3). To verify this, after making it part way through the first rebar cut, I went back to some thinwall box-section tubing, which the blade could not cut through without overheating.

Resharpen. It occurred to me, however, that maybe this blade could be salvaged, so I took it for a ride to the local saw shop, C-Saw Sharpening, in Santa Fe, New Mexico. The proprietor, Bob Mathie, is a long-time carpenter, tradesman, and sharpener-of-everything. He noted with some interest that the stress of cutting through all of this steel didn't seem to have hurt the blade one bit. He saw no problem with sharpening it as many as three or four times.

Bob explained to me that the grind used on this blade had several distinct angles, and although this was a pretty sophisticated tooth profile (a label on the side of the blade called it a "modi-

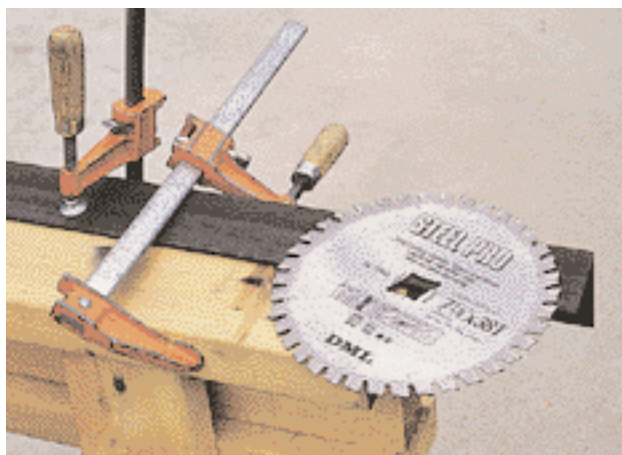
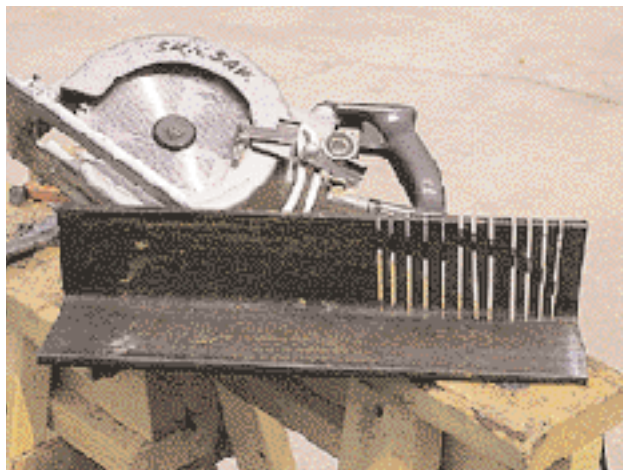


Figure 1. Primark's SteelPro looks like an ordinary circ saw blade, but it cuts steel.

Figure 2. The blade made clean, straight cuts in angle iron as big as $\frac{3}{8} \times 4$ inches (top). Although the cuts are cool to the touch, be careful because the steel chips are hot enough to start a fire or burn your skin.



fied ATB”), he could probably provide a fair approximation if I wanted. After considering that some builders might only have access to simple resources for sharpening, we decided just to put a flat top on the teeth and see what happened. Twenty minutes and \$15 later, I had a good blade again.

Restored. The flattop grind made for slightly slower cuts, but the blade still cut effortlessly through the $\frac{3}{16} \times 1\frac{1}{2}$ -inch angle iron. But when I tried it out on $2\frac{7}{8}$ -inch-diameter oilfield pipe, the blade overheated the material and cut so slowly that heat damage to the blade seemed imminent (Figure 4). The good news, however, was that even after this episode, the blade still cut relatively easily through $\frac{3}{8} \times 4$ -inch angle, making five cuts with no trouble.

Encouraged again, I decided to test one more of the manufacturer’s claims. This blade is supposed to cut through wood with embedded nails, so I drove three 16-

penny sinkers into the endgrain of a 2x4, and had a go at it. The first dozen cuts went well, then the blade started to slow down. By the eighteenth cut, there was some smoke coming out of the 2x4 and the blade was laboring, so I stopped (Figure 5).

Second try. I called the manufacturer to find out why this blade didn’t do so well on the rebar. They suggested that the approach angle might need to be steeper for rebar, so if the blade depth were set lower, the blade might cut better. They also sent me another blade so I could test this theory. The first four cuts through #5 grade 60 rebar were amazingly smooth and fast. On the fifth cut, however, the blade slowed down suddenly, and the sixth cut was too slow to be useful. After that, the blade was done cutting rebar. I suspect that I might have been dealing with two different hardnesses, since the first four cuts were on one piece of rebar and the remaining



Figure 3. Cutting #5 grade 60 rebar proved to be too much.

cuts were on a second piece.

Strong teeth. Everybody I had showed this blade to first expressed disbelief that it could work at all, then decided that even if it did, the carbide tips would fly off. Although the rebar test didn’t go as well as expected, it did reveal just how well this blade is put together. When I tried cutting off a short ($1\frac{3}{8}$ inch) piece of rebar, the drop got caught between the blade and the guard. This is no big deal when you’re shaving a 2x4, but a $\frac{5}{8}$ -inch-wide piece of steel jammed between the running blade and the guard has no mercy on either component. In the case of the SteelPro, however, the carbide teeth appear to be firmly attached to the blade, since none came off during the rebar jam. Even when I deliberately tried to knock the teeth off by installing the

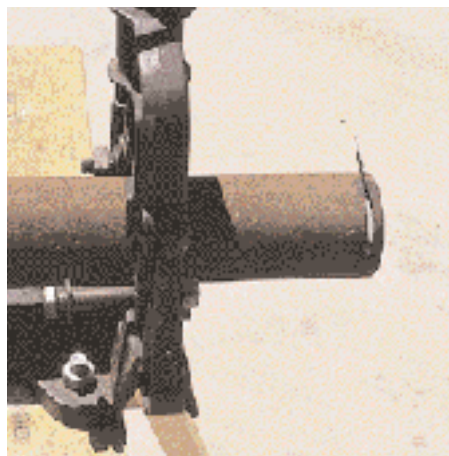


Figure 4. After sharpening, the blade had trouble cutting oilfield pipe, but still cut $\frac{3}{8} \times 4$ -inch angle easily.

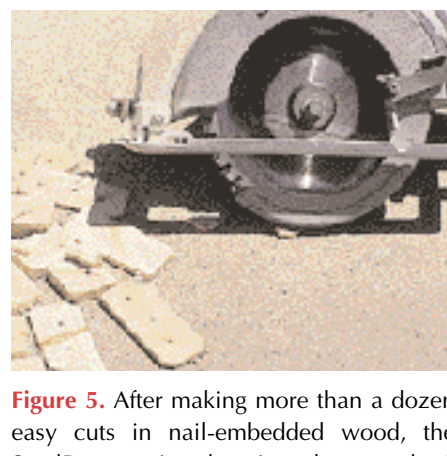
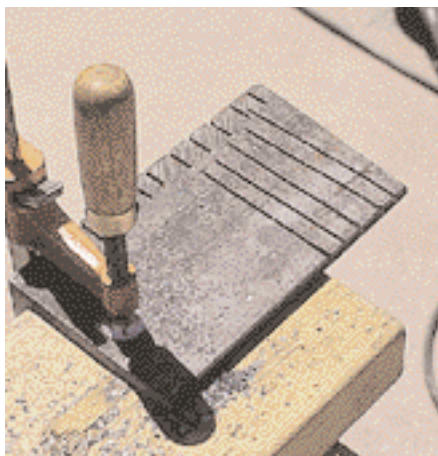


Figure 5. After making more than a dozen easy cuts in nail-embedded wood, the SteelPro starting burning the wood. A metal-cutting blade in a recip saw is still a better choice for this type of work.

blade backwards and running it hard into the steel — don't try this at home — they held up.

The Verdict

As a rebar cutter, I can't recommend the SteelPro based on what I saw. Even if my test piece was unusually hard, the average pile of rebar on a site is likely to have one, too. As for cutting nail-embedded wood, I would say you're still better off with a demolition blade in your recip saw.

But the SteelPro is a worthwhile tool if you have to cut a clean line in steel plate or angle. To extend the life of the blade, be sure to start the cut slowly, maintain minimal pressure, and let the blade do the work. Avoid cutting steel that is too hard, and make sure the work is well secured, since overheating, shock, and vibration will cause premature failure.

Safety. Above all, read and understand the manufacturer's safety warnings before you use this blade. Along with the usual precautions of safety glasses and hearing protection, don't try to cut steel unless it is firmly secured. And watch out for the metal shavings — they are hot enough to start a fire or burn your skin.



TOOLBITS

Torpedo Level

Unlike most torpedo levels, which only read plumb, level, and 45 degrees, the magnetic *PL-360* has a vial that measures and replicates angles through 360 degrees. Accuracy is said to be $\pm 1/16$ inch over 60 inches, guaranteed for life. Suggested retail is \$19.99.

Contact: Stabila, 340 Industrial Dr., South Elgin, IL 60177; 800/869-7460.



No-Slip Wrench

This adjustable wrench grips on all four sides to prevent slipping and rounding off of hex-head fasteners. *The Claw Cinch-Lock* has an offset and angled head to help avoid busted knuckles, and is available in 6-, 8-, or 10-inch sizes priced from \$22 to \$29.

Contact: The Stanley Works, 1000 Stanley Drive, New Britain, CT 06053; 800/782-6539; www.stanleyworks.com



Big Chalk Line

With 100 feet of line and almost a pound of chalk, the *Little Giant* chalk line reel lives up to its name. The one-piece crank has a quick rewind ratio designed to save time, and the fill grommet is said to make reloading easy and prevent spillage. Suggested retail is \$27.70.

Contact: Keson Industries, 1660 W. Quincy Ave., Naperville, IL 60566; 630/369-8848.

