

# Turning To Stone

BY K. SCHIPPER

Mention stone to many engraving shop owners, and they tend to think in terms of items that need to be decorated with a metal plate or sandblasted. However, there's a common shop tool that offers another alternative, and possibly even access to an entirely different market or two.

It's no accident that many of the laser engraver manufacturers were featuring stone in their booths at the 2003 ARA International Awards Market in Las Vegas. Stone—mainly marble—desk sets, clocks and nameplates are popular options right now for higher end corporate awards.

And, while laser engraving on stone doesn't offer the same deep etch as sandblasting, it can do some things on the material that sandblasting can't, including hold fine details and reproduce photographic images.

Nor are the awards and gifts markets the only ones where stone is extremely popular these days. More contractors are using stone to customize their residential and commercial projects in areas such as kitchens, baths and entryways, and they're finding laser engraving can make a custom job just that much more custom for a higher end client.

As with any natural product, there are some tricks to working with stone. However, those familiar with the equipment say some practice and experimentation should produce the same quality results these machines achieve on other substrates.

## Mixed Markets

Most engraving shop owners who have laser engravers recognize the versatility of the equipment. And, yet many of them don't think of using it to mark stone when the order for such a product comes through the door. It's also a situation that slowly seems to be changing.

"It's something that people are starting to recognize as a viable product

they can offer," says Mike Dean of the Golden, CO-based Epilog Laser. "More and more marble and granite products are coming into the marketplace that accept laser very well, and those products provide very nice contrast—something they've never been able to do with traditional engraving equipment."

"It seems like more and more people are trying to sell in the corporate market, and this is very nice for high-end awards," says Jimmy du Bose, director of sales for Xenetech Global in Baton Rouge, La. "There's a very classic look you can get from laser engraving black marble and black granite."

If anything, the awards industry is a bit behind some others when it comes to using laser engravers on stone. Trevor Laurence, a manager with Vision Engraving Systems in Phoenix, says that company is selling a lot of larger machines to people who are doing monuments and historic plaques on stone.

"I just think that maybe the awards industry hasn't been exposed to somebody showing that this is something you can do and enhance your business," he says. "A lot of people get used to doing what they're doing, or they're afraid of handling the heavier pieces, so people just aren't seeing it yet."

Still another market where the lasers are already picking up steam is with custom builders. John Pacult, Pinnacle laser product manager for the



The images on these 12x12-inch stone tiles (also featured on this month's cover) were created with the LaserPro laser engraving machine from GCC. (See cover credit for more information.)

Sherman, Texas-based SignWarehouse, says probably 10 percent of the people he speaks with about lasers are interested in getting into that market.

"We're talking about floors, chair rails and backsplashes, anything that can be customized and personalized,"

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he says. "Plus, you can use clip art or a photo that you can't do with a lot of other processes. Even if it's just a single custom tile in the entryway, that's where a lot of the demand is coming from."

The idea that a photographic image can be reproduced on stone, whether for an award or as part of a custom wall in a company boardroom, is probably the most attractive reason to use a laser to do the decoration.

"We like showing photographs that are done that way," says Jim Rabideau, market development manager for the Scottsdale, Ariz.-based Universal Laser Systems. "You're really just microchipping the surface, and if it's black marble, it turns white, so it's really going to stand out."

While other colors of stone don't offer quite that amount of contrast, in that respect it's much easier to get a quality image than one done with a laser on a dark wood such as walnut, which also don't offer much contrast, he adds.

Kurt Koser, a distributor for LaserPro through his Morgan Hill, Calif.-based office, says a good piece of stone will handle both photographic images and text quite well.

"It works great with text and it works great with photos," he says. "Of course, the photos are a great way to show a shop's capabilities. Anyone can do text, but adding a photo to something makes it truly unique."

### Test of Skill

That's not to say that all stones respond equally well to laser engraving, or that there aren't some tricks of the trade that can make shorter work of such a project.

As for the substrate itself, Xenotech's du Bose says there's less work involved in preparing stone for laser engraving than there is for glass.

"It's pretty easy, really," agrees Vision's Laurence. "It's a matter of getting the right parameters, but it's pretty straightforward after that."

While Laurence doesn't recommend taking on a piece of stone with a 10-watt machine, du Bose says it's a situation where size doesn't matter—at least much.

"You can get the job done with a 30-watt laser, but if you want to achieve some depth, the higher wattage is going to give you that," he says. "On a 30-watt machine you're just going to be going slower to get the same depth that you could get with a 100-watt machine."

"A 30-watt machine would be my minimum," Koser agrees. "But, 120 watts isn't too much when working with black marble. Power is contrast on black marble. The more power the material absorbs the higher the contrast, or whiter the engraving. A more powerful laser will not do a better job; it will just produce higher contrast faster. Granite works great at low power but gives courser results

as the dot produced is far bigger and less round."

While all these experts say a laser can do a really nice job on stone, Koser also calls it the most difficult material he's worked with—and his favorite. One big problem, he says, is that it's much less forgiving than other materials.

"If you're engraving aluminum or brass or wood, if anything varies a bit you aren't going to see it in the end product and the variance is going to be virtually invisible," he says. "But, if the tube fluctuates, if the machine has some vibration or the driver doesn't quite control the power properly, you'll see it with black marble."

Because there is no penetration, all the laser does is change the contrast. If the laser is not working properly any variance shows up as contrast changes. This is also why Koser uses marble for most of his samples; it truly shows the machine's abilities. Or, as he likes to say, "Pictures can't lie."

While black marble is probably the preferred stone for engraving because of its softness and its ability to produce good contrast, it's certainly not the only one out there. However, granite, which has become very popular for kitchen countertops and bathroom vanities, is a harder stone, and the colored particles it contains can create a couple different problems.

"The harder the rock, the more variegated the surface," says Jan Wheeler, equipment sales manager for SignWarehouse. "Consequently, you're going to have to do more to get the image to stand out."

Additionally, by blasting those particles with the laser engraver, the risk increases that the stone won't hold the true dot pattern necessary for photographic work.

"You need to start with a less detailed file, because you want to have fewer dots," says Koser. "Even then you run the risk that with too many dots you end up making a rectangle instead of a photographic image."

Of course, a stone's polished surface contrasted with the color left by the laser isn't necessarily the only way to do an image on stone. Color filling is also a possibility. For instance, SignWarehouse's Pacult says he has a customer in California who does elaborate fills involving multiple

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colors on marble.

"He has a certain sequence he may go through," Pacult explains. "He will do a pass, then color fill that with a red, do another pass and fill that with green, then do another pass and fill with blue. He gets a lot of variations with it, and in those cases, your imagination can just run wild."

Universal's Rabideau agrees that color filling can enhance a lot of stonework when done correctly. He says one thing engravers need to be aware of, though, is the porosity of the stone they're working with. While stone may seem dense enough, some types of stone will absorb moisture, including color.

He uses the example of soapstone, which is used in some kitchens, and that when laser-engraved produces a natural light contrast with the darker finished stone.

"If you want to do something like a solid black or a solid gold, you're going to have to do something in advance of your fill because it's porous in nature," he says. "You may want to create a mask and spray the engraved areas with something like a clear enamel. Once that's dry, you can go back and hit it with your color and you don't have to worry about the rest of it taking on the paint."

Rabideau adds that the market should soon see a product that can be sprayed on any number of materials—tile, stone, glass and metal, among others—and baked. Then, when the material is hit with a laser engraver, it turns black, making engraving on lighter stones still more practical.

One other nice thing about stone: It doesn't necessarily have to be finished. Most engravers leave the exposed stone as-is. But if the finished piece is going to be outdoors and subject to dust, Koser recommends using a clear stone sealer to protect the engraved surface.

### Doing It Right

Finding just the right stone for a laser job can be very important, in large part because it can impact the overall quality of the work.

As a natural product, stone offers some of the same flaws and challenges as dealing with wood. Rather than grain, some stones may be veined in different colors. One obvious problem

is a vein that may disrupt a design by appearing in an unfortunate location—such as the tip of someone's nose—in a photo image.

Rabideau refers to that background problem as, "noise," and while it may disrupt a photo image, he says many engravers are able to eyeball whether it will be a problem when it comes to engraving text or clipart.

"There are a couple other old-fashioned ways to check that," he says. "You can place a piece of scrap acrylic on top and see where it comes out on the stone. You can also print a transparency and see how it looks."

Xenetech's du Bose agrees that a poorly located vein can impact the overall appearance of the finished product.

"If you have black marble with a vein running through it that's gold or another color, it might be fine," he says. "However, if a letter is going across

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that, you're going to see a variation in the letter itself because of the different density of the stone and the different composition in that one area."

The obvious answer, of course, is to buy good quality stone whenever possible. However, that's not always as easy as it sounds.

"It's not easy to find a consistently black marble. When we look at things like photo imaging it's pretty critical that we have a black base," says Rabideau. "We've specifically asked for photographic quality from the suppliers, but we don't always get it."

LaserPro's Koser says he's had so much trouble getting the quality of stone he wants that he's begun selling it himself in boxes of 10 12 x 12-inch tiles.

While obtaining black marble is definitely one thing, engravers interested in

other materials may find stone tiles available through sources as close as one of the bigger home building supply chains, such as Lowe's or Home Depot, or through a local stone installer.

For anyone interested in tapping into the custom building market, making those connections can be a good first step for marketing finished products, too.

"If I owned a laser and I wanted to get into doing stone tile, I'd visit Lowe's or Home Depot and buy a bunch of the stone tiles, then do samples of all the things I could do with this," says SignWarehouse's Wheeler. "Then I'd show them to local home builders and see if they'd be interested. I think they would because this is a different way to differentiate a custom project."

Epilog's Dean agrees. And, he urges people to think further outside the box than putting a design on a single tile.

"We had the 12 x 12-inch tiles at the Las Vegas show, and we had them four across and three down so we could do 4 x 3-foot murals," he says. "You can make a huge image that looks nice over a series of stone. I'd set up a mural so people understand they aren't restricted to a single tile."

Even for engravers not interested in the custom building market, Koser says some good samples are a great selling tool.

Still another option is to buy business-card-sized pieces of marble, engrave those and hand them out to potential customers.

"It depends on how you choose to market it," Koser says. "It's just a material and you market it the way you do any other material."

Ultimately, looking at stone as just another material is the best method for getting comfortable with its use, too.

"It's a matter of knowing what you're dealing with," says du Bose. "If you're doing it for the first time, get some sample pieces so you can practice with them. That way you'll understand the best power and speed setting to use for that type of stone." "Experiment with it," echoes Dean. "Get some tiles or some samples, experiment with them, and then let your customers see them." ▲

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