

Powder provides the medium for industrial growth and artistic expression

A coater establishes himself through expanding his shop's powder coating capabilities. The plant manager, also a designer, finds powder provides the palette to create furniture unlike anything else.

Cole Scego's father, John, opened a liquid finishing shop in a small building in downtown Owensville, Mo., finishing parts for one customer whose specifications eventually demanded powder coating. To keep its main customer, the shop bought a small batch oven and began powder coating. This simple shift to a dry finishing technology proved portentously pregnant with possibilities granting a medium to unlock the visions looming in the mind of the young Scego.

First, the coating shop assumed a new moniker: Select Powder Coating. After retaining its primary customer's business, the finisher began marketing the shop in the surrounding area. Business began to boom. Word-of-mouth credibility began filling the shop with work. Select mostly serves metal fabricators involved with a variety of industries, such as defense, automotive, aerospace, store fixtures, furniture, hardware, and fluid-handling equipment. In addition, the coater has powder coated components for health care equipment, and recreational and sporting equipment. Additional services include light assembly, packaging design, warehousing, and distribution. "We strive to produce quality service and are known for our quick

turnaround time," Cole Scego said. "We work as many hours as it takes to get stuff turned around and keep our customers happy."

In 2½ years, Select relocated to its new 16,000-sq-ft location that houses its original batch system as

well as its fully automated line. The company's customer base now reaches the St. Louis metropolitan area as well as parts of Arkansas and Illinois. "At first we were sparse for work," Scego said. "But now we've been working 12-hour days, 6 days a week...staying busy."



Cole Scego prefers fabricating furniture from one piece of metal, using processes such as waterjet cutting.

Coating capabilities at Select Powder Coating

As the company considered adding an automated line, two main concerns guided its research: cost and efficiency. As a result, it chose a system designed by General Automatic Transfer, Fenton, Mo., that incorporates a powder booth supplied by Deimco, Tama, Iowa.

Workers load parts onto the automated line's conveyor that first brings parts through a three-stage washer, consisting of a clean and phosphate, rinse, and seal. Parts then pass through the dry-off section

of the combination dry-off-cure oven. The line's part window measures 3 feet wide by 5 feet tall by 8 feet long, accommodating parts such as hospi-

tal beds and air-conditioner housings. Dried-off parts then enter the powder booth where workers apply powder with manual application equipment supplied by ITW Gema, Indianapolis. The shop performs eight to 10 color changes on a normal day. To assist in color change, Select uses color-dedicated hoppers—one for black, one for white, and another for a mix of colors. After powder application, parts pass through the oven's curing section and then cool off and complete the line's circuit at the load-unload area.

The coater's batch capabilities process two part profiles: 8 feet square by 16 feet long when cured in the batch oven; 4 feet wide by 3 feet tall by 27 feet long when cured in a slot section added on to the automated line's combination oven. These part profiles accommodate the railing and ornamental ironwork that Select coats for the fencing industry. It also allows the coater to finish pad-mounted and pole-mounted transformers. Workers pre-treat parts in an enclosed area. A foamer applies chemicals supplied

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The artist renders these bird figures by smudging dry powder coatings before curing.

by Chemetall Oakite, New Providence, N.J. Afterwards, workers use a heated pressurized spray-wand to rinse the parts and then seal and rinse the parts again.

Awakening an artistic sensibility

Normally, this type of article would summarize the benefits the coater realized in converting to powder or upgrading its capabilities. While Select Powder Coating has grown as a result of using powder, Cole Scego has applied powder to more aesthetic endeavors as well. Not only does Scego operate his father's coating shop, he also designs furniture as Cole Scego Design, offering high-end, one-of-a-kind pieces fabricated from steel and aluminum, and finished with multiple coats of powder. Scego has been designing and producing furniture since he was 18 years old. "I couldn't find any furniture that I liked, so I started creating my own," he said. "Most of my early creations came out of necessity. I even welded up a set of bushes for the front lawn of my first home because I couldn't find any bushes that were aesthetically pleasing to me."

Necessity crystallized into design expressed in powder-coated metal. In an artist's statement, Scego declares

I strive to provide my clients with quality, high-end pieces that serve not only as tangible objects, but also as cherished works of art. As the world moves toward the ideology of sustainability and away from the love of consumerism and throwaway products, I strive to produce work that will stand the test of time. I use durable materials such as aluminum and steel to construct each piece and apply a multilayer powder coat finish. I design my work to last, to be handed from one generation to another and to sell at auctions for millions in the near future. I make great efforts to produce work that creates a positive impact on its proposed environment. I believe my work is a great investment in function, sustainability, and visual inspiration.



By combining a variety of masking techniques and applying up to 10 layers of powder, Cole Scego achieves aesthetic finishes on his aluminum and steel furniture.

But why use such a counter-intuitive finishing medium for projects demanding multiple coats? Powder poses a greater challenge with each subsequent coat. Some of Scego's pieces have 10 distinct powder layers. Despite the constraints, powder offers some aesthetic advantages in addition to being more environmentally friendly than solventborne liquids.

Indeed, adopting an intuitive approach and applying a counterintuitive coating has allowed Scego to achieve some striking results. "In developing designs, I like a little freedom because I don't know how it will work out," Scego said. "I like to go with what comes out of my head at that moment. Some people will give me a little guidance on color but that is about it."

The fabricators who use Select Coating's services return the favor by allowing Scego to use their equipment to fabricate the furniture. He begins conceptualizing most pieces in his head and then translating the idea via paper and pencil. He then creates a computer-assisted design (CAD) file. Next, he fabricates the

piece by hand with processes, including laser cutting and forming, bending, and cutting on a brake press. Scego prefers to make the pieces from a single piece of formed metal. Lately, Scego has been using waterjet cutting. A high-pressure pump forces water and garnet sand through a fine nozzle to cut the material. The CAD file loaded into the machine directs the cuts.

After forming, Scego brings the pieces and components to his shop and grinds down the edges to smooth them out and performs any welding that is needed. After fabrication, Scego sandblasts the piece and then applies a set of biodegradable cleaning solutions and a chemical seal to prep them for powder coating. Then the powder coating process—sometimes lasting for 6 hours—begins. "Most powder coating applications use only one color and a single coat," Scego said. "I often use up to 10 colors and a clear coat on a single piece. I have spent a great deal of time developing a wide variety of application techniques to achieve the desired finish on my work."

To achieve multicolor, multilayer finishes and other desired characteristics, Scego explored and created various masking, spraying, and application techniques not commonly used in powder coating. To begin, Scego surrounds himself with eight to 10 boxes of powder, using powders supplied by TIGER Drylac USA, Ontario, Calif., and Cardinal Industrial Finishes, City of Industry, Calif. Next, he applies a one-color basecoat to the entire piece. Then he begins masking in different ways using a lot of high-temperature-resistant tape in thin varieties up to 18 inches wide. The tape can be cut and used as stencils. In another instance, a craft store pattern applied to the substrate helped to create an intricate design on a white table.

After masking, Scego begins applying and curing multiple layers of powder. Sometimes, he applies two different powders and “blends” them together by using a brush or his fingers while the coating is in its dry form. This process couldn’t be done with liquids. He also applies powder by hand to a hot part and lets the powder begin to melt onto the surface. Whites and grays tend to discolor as a result of being ex-

posed to multiple cures, and the masking product can discolor the finish. Therefore, Scego avoids applying these colors in the early coating stages. “A good way to describe it is backwards to liquid finishing,” Scego said. “With liquid, you would put your base down and mask off all the details and then paint the details. I’m actually putting my fine detail color down first and then masking that off and going around it. I then add more detail and go over that. The first color is the highest degree of detail.”

These furniture pieces exhibit the durability of any powder-coated component out in the field. However, where a shop tends to control powder film build, Scego welcomes a thick final film, orange peel and all. After applying a coat, the piece has a pretty big ridge along any masked-off edge. Applying a clear coat smoothes out the rough edge. “It gives a nice textured surface where you can see the detail, but you can also feel it with your eyes closed,” Scego said. “The pieces are unique. To tell you the truth, I really don’t plan anything. I just start with one color and go until I feel that I’m finished.” **PC**

Editor’s note

For further reading on the topics discussed in this article, see *Powder Coating* magazine’s Web site at [www.pcoating.com]. Click on Article Index and search by subject category. Have a question? Click on Problem solving to submit one.

Powder system: **General Automatic Transfer, Fenton, Mo. 636/343-6370.**
www.gat-systems.com

Powder application equipment: **ITW Gema, Indianapolis. 317/298-5161.**
www.itwgema.com

Powder booth: **Deimco, Tama, Iowa. 641/484-8806.** www.deimco.com

Powder coatings: **TIGER Drylac USA, Ontario, Calif. 909/930-9100.**
www.tigerdrylac.com