Artistic Plating Combines Plating & Powder Coating To Satisfy High-end Consumer Market

One plating shop manager who's enthusiastic about powder coating is John Lindstedt, president of Artistic Plating Co, Inc., Milwaukee, WI. "We made the decision to diversify into powder coating in 1983 for two primary reasons," says John. "Powder coating was an environmentally friendly finish that we anticipated would give our company a strong growth area in addition to plating. It also gave us a way to upgrade our decorative coating services. From so many perspectives, powder coating is far superior to other organic coatings applied by liquid media."



Now, 13 years after establishing its powder coating department, Artistic Plating powder coats a variety of brass, aluminum or steel parts. These faucets are being coated with white hybrid resin powder to achieve the high-tech, European look.

rtistic Plating built its reputation for quality plating by excelling in a variety of nickel finishes, as well as electroless nickel, bright acid tin, solderable tin, copper, silver, gold and palladium. Customers that are largely buyers of its plating services include Cooper Power/McGraw Edison, Mercury Marine, General Electric Medical, Eaton/Cutler-

Hammer and Allen Bradley. But like other jobshops leading the movement to diversify into powder, Artistic Plating is happy with its decision to offer both plating and powder coating services. It gives them a competitive edge.

Now, 13 years after it established its powder coating department, Artistic Plating is powder coating a variety of zinc die cast, brass,



In the high-end market that Artistic Plating serves, rejects can quickly take a bite out of profits. The company uses numerous "finesse" methods for touch-ups. This procedure has reduced scrapping parts to less than one percent.

aluminum or steel parts: Plumbing and exterior lighting fixtures (where moisture is a strong concern), hand tools. point-of-sale dispensers and housings for electronic circuitry. The company has an impressive list of clients for this specialized area: Kohler.

Chicago Faucets, Quality Metal, Globe Valve Corporation, US Brass, Elkay, In-Sink-Erator and Symmons. Each is known for its high-quality products. Similarly, each has high visual and aesthetic standards for plating and powder coatings. Quite often, plating and powder coating make a winning combination that helps Artistic satisfy the high-end consumer market. Clear powder coats are increasingly being specified for application over plated nickel and chromium.

Lindstedt acknowledges that large capital expenditures-significantly more expense than what is connected with liquid organic systems-are necessary to get into powder coating. One needs powder delivery systems, guns, hopper and booths. Because cross-contamination is a problem with color changes unless cleaning procedures are meticulous (that takes time and time is money), it makes sense to have separate booths and associated equipment for each color of powder. A complete powder booth station costs in the neighborhood of \$75,000 to \$100,000, according to Lindstedt.

Most parts finished at Artistic Plating receive a powder coat that is from two-to-three-thousandths of an



Final preparations are made and an inspection of the finish** is done carefully prior to application of clear powder coat.



The powder coated parts are inspected for removal of problematic particles, such as lint or excess powder. The key to high aesthetics in powder is inspection, touch-up and more inspection.

inch thick. A computerized system* monitored by a thermocouple takes the guesswork out of wondering if parts are properly cured. A quantifiable estimate of cure is provided that helps keep all considerations in line: Maintenance of gloss, color consistency and other important factors. Each part has a different amount of mass, and therefore, a specific mass curing temperature—as estimated by computer.

"With this system," says Lindstedt, "if a part doesn't test properly, you can almost be certain that the problem is in the resin itself and not the cure."

It's Gotta Be Dry

One of the most important considerations in operating a powder coating shop is that the air system must be kept exceptionally dry and clean. Artistic's set-up includes a number of devices following the compressor to remove all dirt, oil and particulate matter, such as after-coolers, refrigerant dryers, loop seals and dessicant dryers. Powder is applied in a "clean room" set-up.

Minimalized Environmental Concerns

"We calculate that we deliver 92 percent of all the powder we buy to our parts," says Lindstedt. "That means that for every 100 pounds, only eight pounds is wasted as overspray on racks or the floor. Most operators

**Brassy Gold[™], Artistic Plating Co., Inc., Milwaukee, WI of liquid systems are happy if 25 to 30 percent makes it onto the part. There are no volatile emissions and even the waste is categorized as non-hazardous, so powder is a very environmentally friendly product. The overspray stripped off the racks is normally burned and no solvents are used in clean-up."

Features of & Procedures Followed In Artistic Plating Company's Powder Coating Department

Humidity-controlled, clean room Constant room temp of 68 °F; 50 percent relative humidity Floors cleaned nightly Conveyor equipment cleaned weekly 4 powder coating stations 4 clear powders offered 10 standard colors Epoxy, polyester & hybrid resins Curing temp & time determined by computerized system*

*DATAPAQ, Inc., Wilmington, MA

Lindstedt believes that powder coating is a high-performance engineering coating that provides excellent adhesion. The increased mil thicknesses associated with powder coating improves corrosion and abrasion resistance. Parts can even be bent and shaped after coating, which reduces masking of certain areas. A variety of resins are available, and each has its strong suits.

Environmental concerns are very important to Lindstedt and Artistic Plating. In 1980, Lindstedt began instituting recovery equipment in the plating areas and employing other techniques to effectively encourage waste minimization. He has been one of the key participants in the Milwaukee area in working with local regulatory agencies, and, in the last two years, has been involved with the **U.S.** Environmental Protection Agency's (EPA) Common Sense Initiative (CSI). As the CSI program enters Phase II. Lindstedt and other Milwaukee area finishers will participate in a sludge characterization study that will have important results applicable to the nationwide finishing industry.

Artistic Plating Company has received significant environmental awards. In December of 1994, it was the first recipient of the "Gathering of the Waters" environmental protection award from the Milwaukee Metropolitan Sewerage District in recognition of its 10-year efforts in drastically reducing the discharge of metals and chemicals. The name of the award reflects Milwaukee's location at the junction of three rivers—the Milwaukee, Menomonee and Kinnickinnic—on the shore of Lake Michigan.

Lindstedt himself received one of AESF's top awards—the Service Award—at SUR/FIN[®] '93 in recognition of his personal commitment to the finishing industry, the Milwaukee



Racked parts are shown

after powder coating on

their conveyorized journey

through the department,

including passing through

the bake ovens and then cool-down to be taken off

the racks and packaged for

shipment to the customer.

Branch and his company; for his leadership then as president of the Metal Finishers' Defense Fund, a group that provides technical support and education to the regulatory agencies in the Milwaukee area; and for serving as a plating instructor in the area.

Are There Disadvantages To Powder Coating?

While he's a proponent of powders,



Lindstedt concedes that those unfamiliar with them will observe that an applied powder coating *looks* very different from a liquid organic coating. Therefore, it's sometimes necessary to *sell* the product's image and appearance.

Powders also cost more than liquid coatings, but their overall advantages are greater.

Future Looks Good

Releases prepared by the Powder Coating Institute show that the powder coating industry is growing at a phenomenonal rate (see p.70, this issue.) More manufacturers are increasingly specifying it for an evergrowing list of products.

"I like powder," says Lindstedt. "The entire process—getting everything just right—is technically stimulating. We spend a lot of time and effort into getting our powder applications to look nice, for the appeal that's required in the high-end market." *PRSF*

When parts reach the shipping/packaging area, they are unracked and prepared for shipment.

Present a Paper at an AESF-sponsored Conference

18th AESF/EPA Conference on Pollution Prevention

& Control for the Surface Finishing Industry To be held during AESF Week 1997, January 27-31, at Disney's Contemporary Resort, Lake Buena Vista, Florida Abstracts due July 31, 1996

33rd Aerospace & Airline Plating & Metal Finishing Forum

March 24-27 • Hyatt Regency San Francisco Airport, Burlingame, California Abstracts due August 1, 1996

SUR/FIN[®] '97—Detroit

June 23–26, Cobo Center, Detroit, Michigan Abstracts due November 1, 1996



Abstract deadlines have passed, but programs are not yet finalized. If you have a timely paper, FAX it in. You may still be placed on the program!

Here's What to Do. It's as Easy as 1, 2, 3 . . .

1. To be eligible for presentation at an AESF Conference, your paper must be an original, unpublished work (case histories or papers on research or technical developments as related to the surface finishing industry).

2. Before the abstract deadline date for the specific conference (please indicate the conference for which you wish your paper to be considered), please send your 75–100word abstract and a brief biography. Be sure to include your name, title, company and company address, phone and FAX numbers, and your statement that the paper has not been published previously and is not pending publication elsewhere.

3. Send or FAX the items outlined in #2 to AESF, 12644 Research Parkway, Orlando, Florida 32826-3298; FAX 407/281-6446.