Finishers' Think Tank



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Have a problem on the finishing line? Please e-mail your question (aesfjournal@worldnet.att.net), use the postpaid form on our Readers' Service Card, or mail to "Finishers' Think Tank," 12644 Research Pkwy., Orlando, FL 32826-3298.

Refinishing Metals in Elevators We refinish existing metals in passenger elevators, working on stainless steel, brass, bronze, muntz metal and nickel-silver. How can we achieve better mirror-bright finishes?

A The problem with refinishing mirror-bright copper alloy coatings may be that the coatings have been protected with organic materials, such as lacquers and paints, which are applied to achieve longlasting protection for the surfaces. Unfortunately, these surfaces are commonly attacked and damaged in



Platers Gotta Eat!

A Restaurant Review By Marty Borruso

I must admit that eating—and eating well—is something I love to do. When traveling, I always try to find a restaurant representative of the specialties in that area, but have found that plating shops don't always end up in locations rich in dining opportunities. Because so many of us in this industry travel, I thought that my culinary experiences might be of interest to others. So for my first review, I will discuss the area I know best: New York City.

New York is known for its fine restaurants, but finding great dining in the more industrial areas can be a challenge. Here are some of my recommendations. service. When the coating is removed, the brass or bronze is prone to attack by the environment, resulting in tarnishing and discoloration.

Another problem is that these coatings must be *completely removed* before any restoration is attempted. With regulations tightening on the use of organic materials for stripping the coatings, on-site removal is difficult. I recommend that the panels be removed and processed at an appropriate facility that can remove (strip) the organic coating, re-plate the brass or bronze, and then re-coat the panels with clear organic materials for protection.

Stainless steel panels usually just need to be cleaned. On occasion, however, they may need to be repolished and any scratches and surface imperfections removed by mechanical means. With the right equipment and expertise, this can be accomplished.

Breakfast—Diners, diners and more diners (mostly Greek) are wonderful. You can get eggs any style, from sunny-sideup to Benedict, and will be served by experienced staff in nanoseconds. In Manhattan, try the Empire Diner on 10th Ave.; in Brooklyn, Tiffany's on 4th Ave. and 100 St.; in Queens, it's the Crossbay Diner; in the Bronx, anyplace on Arthur Ave. is great. (Always opt for the toasted bagel instead of toast!)

Lunch—Don't miss New York's great delis—pastrami to die for, pickled tomatoes and corned beef. Try the giant sandwiches at Grabstiens in Brooklyn on Rockaway Pkwy., or Goldens in Staten Island. In Manhattan, the Second Ave. Deli is wonderful, and Lindy's will make you smile. On Union St. and Hicks, Ferdinando's Sicilian Fast Food will delight your soul. The roasted eggplant and peppers is wonderful, as well as the Vastade sandwiches. Manhattan Specials (coffee soda), a New York tradition, are on tap, along with freshly ground espresso. Zinc-Nickel Alloys

Q. We deposit a zinc-nickel alloy in a barrel plating operation from an alkaline plating bath, and are having difficulty distributing the alloy on the parts, which results in chromating problems. How can we reduce that effect?

Alloy deposits offer a unique opportunity to attain special effects that can provide different properties than are found in either metal when deposited separately. Zinc-nickel alloys have shown superior corrosion resistance for some applications, and these alloys are in great demand. In order to fix your problem, you must first understand how the alloy deposit is created.

Metals deposit at different rates, depending on several factors. These factors influence the deposition potentials of the metals and create

On Coney Island—Nathan's—hot dogs, lobster rolls and fries. The best.

Dinner—If you want a great steak, go to Peter Lugars in Brooklyn, where the 2in. porterhouse is tender enough to cut with a fork. Not a place for the cholesterol-conscious, it has been a cathedral to the perfect steak for more than 100 years. (My wife once asked for a menu at Lugars, and our server asked, "Did you come here to read or to eat?") Start with the tomatoes and onion salad-sweet onions and juicy, 4-5-in. diameter tomatoes covered with special steakhouse sauce. Home fries and creamed spinach are my preferred side orders. A perfect ending to a perfect meal: Chocolate mousse cake with freshly made whipped cream.

For lobster, The Palm in Manhattan is the place, on 46th and 2nd Ave. The specialty of the house: Lobsters that are 4, 5 and 6 pounds each, delivered to your table! (Don't worry, someone will help crack them for you.) Dig in and enjoy the butter flows like wine. ³ different alloy compositions from the same solution. To achieve a uniform alloy, it is important to bring the deposition potentials of the zinc and nickel constituents closer together. This is accomplished through the use of complexors. The complexor package used should be the one in which the two metals of the alloy will behave similarly at different concentrations. The concentrations of the materials in the plating bath are important, because the alloy will deposit differently at different levels. Most of the newer alloy deposits behave similarly at low metal concentrations of the plating baths, so the effects of the deposition potential differences are minimized. The relative concentration of the materials is also a factor when depositing an alloy, because the mass effect of the component concentrations can influence the alloy.

For instance, although not linear, if you increase the concentration of nickel in the solution, you will probably increase the nickel content of the deposit.

Other parameters that influence the alloy composition are current density and, consequently, the voltage of operation. An increase in voltage will generally increase the nickel composition of the deposit. Temperature of the solution is also important, because as it increases, it tends to affect the way materials deposit from the process, thereby changing the efficiencies of the metals and affecting the alloy.

The final area to examine is the agitation of the solution, because materials plate out at different rates. In barrel plating, therefore, a big factor in the alloy distribution is the rotation speed of the barrel.

Q. What is the best way to dissolve aluminum from a nickel substrate, other than using caustic soda?

As you might suspect, aluminum is soluble in caustic solutions. In fact, aluminum is an amphoteric metal and, as such, is soluble in both acids and alkali. Most of the industrial experience is in etching and chemical milling with hot alkaline caustic solutions. It is also possible, however, to solubilize the aluminum in acid systems.

Aluminum is often used as a base for electroforms because of the precision with complex shapes that can be attained by machining the aluminum templates and plating them with different materials. Warm hydrochloric acid is used to dissolve aluminum away from aluminum electroforms, allowing for clean separation from the templates, which are sacrificed and discarded when the electroforms are put into service. The warm hydrochloric provides for good removal of the aluminum, and also allows the electroforms to come away cleanly and precisely. In addition, the aluminum protects the coatings from attack by the hydrochloric. P&SF