

A Space Age FDA/USDA Compliant Metal Coating Extends Release Properties Of Multi-Metal Chocolate Extruders From 40 Hours To More Than Two Years



If the operation of a real-life candy processing facility were as delightful and exciting as that run by the fictional hero Willy Wonka, there would be little need for experts in troubleshooting candy processing operations. Unfortunately (or fortunately, depending on your perspective), decidedly unglamorous production challenges can arise. When they do, companies like Gertrude Hawk Chocolates reach out to General Magnaplate to tackle those challenges and get the production of high-quality specialty candies back on track.



Chocolate Began To Stick After Only 40 Hours

For Gertrude Hawk's department supervisor, one such challenge involved the company's enrobing process, which he describes as "looking like a waterfall of chocolate."

Look more closely, though, and what you discover is an extrusion unit composed of multiple metals - steel, aluminum and brass - that forms and sizes the chocolates. The extruder has two rollers - one running clockwise, and the other counter-clockwise. The confection is extruded through dies and is sliced at pre-determined lengths by metal fingers.

When the PTFE began to peel, the supervisor became concerned. "Good release properties are critical to the enrobing process. When we began to lose the coating, we also began to lose the release because we were getting down to the bare metal," the supervisor said.

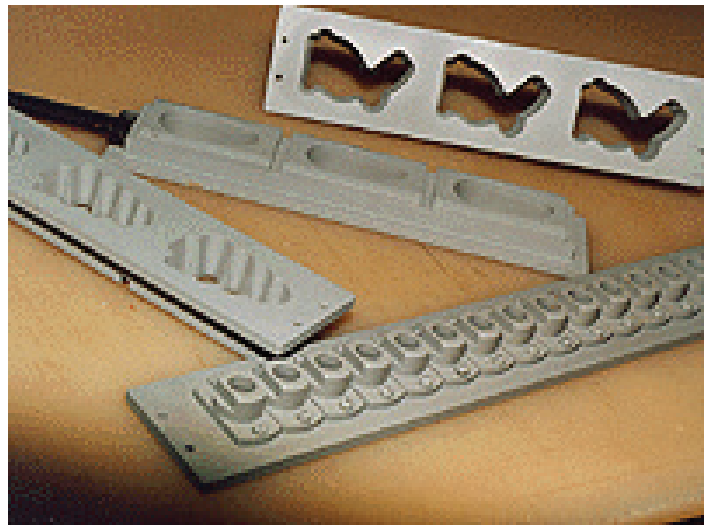
To try and solve the peeling and release problems, Gertrude Hawk tried two different metal coating companies. Both were unable to tackle the problem successfully. The parts were recoated, but they would still get peeling within 40 hours and the dies would again begin to show release problems.

Finally, An Enhanced Composite Coating Did The Trick

Gertrude Hawk turned to Magnaplate to help solve the peeling and release problem. The solution was to coat the extrusion dies and fingers with Magnaplate's PLASMADIZE®. Cromwell's solution was to coat the extrusion dies and fingers with Magnaplate's PLASMADIZE® FT-4.

PLASMADIZE is a synergistic, multi-step composite coatings that enhances resistance to corrosion and wear, producing a surface with lifelong dry lubricity. Release has shown to be excellent up to 500F.

A true composite coating, PLASMADIZE FT-4 is compliant with the FDA, and approved by the USDA for food contact surfaces. It is made up of a matrix of high-tech materials including metals, ceramics, polymers and dry lubricants applied either simultaneously or in as many as three sequential process steps. The resultant surface is superior in performance both to the base metal and to the individual components of the PLASMADIZE coating. That's why it is called "synergistic."



Over Two Years Of Success, Instead Of Forty Hours

The results have been excellent, as Gertrude Hawk Chocolates' experience with extrusion dies and fingers have shown. The supervisor reported, "After coating with PLASMADIZE, our extrusion dies performed beautifully. No peeling. No bare metal. No release problems at all. That was over two years ago and those extruder dies and fingers are still exhibiting excellent on-the-job performance."

There's a bonus to working with Magnaplate, he says: "An important extra that comes with General Magnaplate technical expertise is the support the company offers. They work extremely well with us on coating and engineering matters. With the Magnaplate team you can be certain that it's not a one-shot deal. You know that if you have problems, they'll take care of you."