# The Art of Deception

by Philip Hitchcock

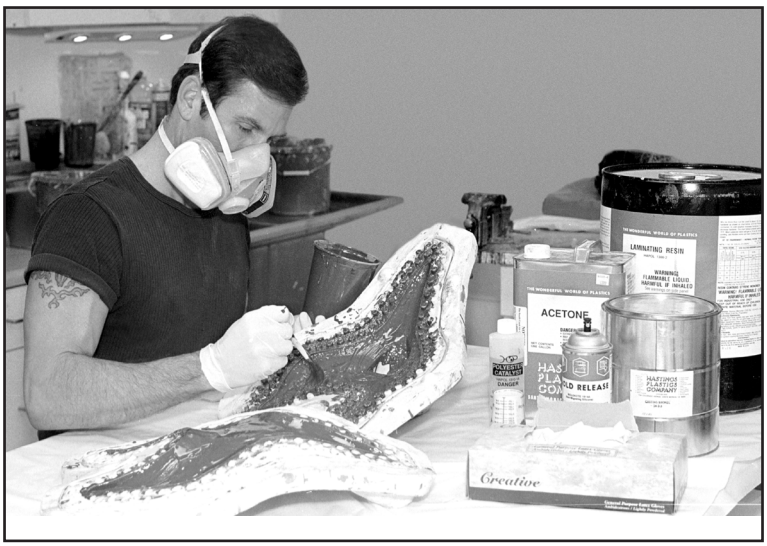
-A three part series examining misunderstood and misrepresented techniques, mediums, and terminologies in Art and sculpture.

Part One:

## Cold Cast Bronze: Why it's hot...why it's not! And how to do a good one!

The credenza that towered over my head in our family's dining room was solid oak. I know because my brother and I once had to move it up two flights of stairs. And even if I had never touched it, I would have known anyway. You see, my mother never missed an opportunity to gloat over that piece of furniture. "Solid Oak...the real thing," she would chant. It was sort of her mantra. I'll never forget the Thanksgiving dinner at my aunt's house when my mother pointed to what looked like an identical credenza and whispered to me softly, "It's a veneer." Her smugness said it all. Somehow my aunt's furnishings were inferior to her own.

Likewise, there exists in the art casting world a protracted discussion, if not a full blown debate, over the merits and liabilities of cold cast bronze. What exactly is cold-cast bronze? How does it compare to bronze cast by the traditional lost wax process and why is there so much controversy?



Artist Philip Hitchcock lays in a "gel coat" of cold-cast bronze.

Cold cast bronze, often called bonded bronze, is similar to "real" bronze in the same way particle board is similar to "real" wood. Polyester resin acts as a bonding agent to hold fine particles of copper and tin together, just as the glue in particle board bonds together the small bits of wood. So, yes, there is "real" bronze in cold cast...but it's not a "real" bronze! Furthermore, polyester resin sets up via a peroxide catalyst, which means there are no furnaces smelting molten metal and despite the exotherm of polyester resin, there is little heat compared to lost wax; hence the term "cold" cast.

If a cold cast bronze is skillfully crafted and finished, it can possess much of the richness and depth of a lost wax bronze. (See below) It will be significantly cheaper to produce, and truer to the original sculpture since the resin which comprises the finished sculpture is applied directly to the silicone mold. And even though a "solid fill" in cold cast increases the weight - which adds value in the eyes of the "art by the pound" crowd- it will always be much lighter than a lost wax casting cast bronze.

Now, before I find myself under attack from foundries and artists alike, let me make it very

clear that I am in no way implying the superiority of one medium over another. Both mediums exist as viable choices for artists and each has its own advantages and disadvantages. I prefer to think of cold cast as simply another option among many already available to artists working in three dimensions. It's the marketing that ticks people off. When prominent museums offer their reproductions in "genuine cold-cast bronze," it confuses the lay person who does not understand or distinguish between the two mediums. To most people, it's ALL bronze and it's the same whether it's hot, cold or lukewarm! It frequently boils down to the bottom line and cold cast is less expensive. So the real controversy arises from deceptive marketing that attempts to "pass off" a cold-cast bronze for a lost wax casting, claiming it's the same but cheaper. It's apples and oranges and as long as you know what you're buying and selling, there's no problem.

Bonded bronze, however, is not fake bronze: It is its own medium and is simply another alternative for casting sculpture. That veneer credenza that my mother scoffed at, had its origins in the minds of colonial cabinet makers who were looking for a way to achieve the beauty of oak without the weight . They soon found that they were able to integrate the veneers of many different woods into the same piece of furniture. In no time, veneers were regarded as exquisitely crafted, superior, and desirable pieces of furniture! If colonial craftsmen working on The Liberty Bell had had cold-cast bronze, ...well...they probably would have done a lost wax Liberty Bell anyway, but they would have delighted in the freedom to choose options!

**How to do a Cold-Cast Bronze**

For purposes of this description I will refer to products sold through HASTINGS PLASTICS in Santa Monica, CA. Resins and bronze powders, however, are available in many sources. Techniques for casting bonded bronze vary according to the size and style of the mold. The following description is concerned with a two-part silicone rubber (RTV-500) mold approximately 18" tall. Work only in an open, well ventilated area and observe all safety precautions.

You will need:
-OSHA approved respirator.
-latex (not vinyl!) gloves.
-a silicone rubber mold.
-non migrating silicone spray (moldkote 1914A) as a rejuvenator and release.
-disposable plastic buckets,
-disposable 1" brushes.
-disposable mixing sticks.
-acetone
-bronze powder (casting bronze 16-2-3)
-cab-o-sil.
-laminating resin(hapol 1300-2)
-mass casting or filled resin (clear mass cast hapol 1300-1L)
-peroxide catalyst (1310-1A)
-sandpaper from 60 grit to 220 grit
-steel wool: coarse, medium, fine, and super-fine.
-acrylic paints: black, dark umber, various metallics.
-sponges and paintbrushes.
-Krylon spray clear and matte.

Lay open the silicone rubber mold, exposing both halves. Spray it lightly with the moldkote1914A. (Technically, silicone rubber requires no release, but it's a good idea to use this spray. It will extend the mold's life.) Wearing respirator and gloves, prepare the bronze mixture. The idea is to lay up gel coats inside the mold to a thickness of about 3/16". Mix approximately 1 pound of bronze powder (the stuff is very heavy, you'll be surprised at how small the volume is) to one pint by volume of laminating resin. You want the surface of the sculpture to be dense with bronze

so you may add even more powder if you like. Dusting the mold with the bronze powder, however, will not improve results as much sanding and polishing is done to the surface, effectively eliminating your "dust coat." Add cab-o-sil to thicken the mix to a consistency approximating pancake batter. Add the catalyst at a ratio of 1-2%, approximately 10-12 drops per ounce of resin...in this case 160 drops or about 7ml. Product differences and especially the weather, will affect gel times. Use more catalyst if it's cold, less if it's hot! Brush the catalyzed mixture into your mold, and around the edges. The cab-o-sil thickens the resin allowing for good coverage on the vertical hangs. When this layer has gelled, repeat the process and close the mold while the second layer is still wet. When the second layer has gelled inside the closed mold, use a less viscous mixture of bronze and resin to "slurry cast" a third layer. Pay close attention to the part lines. When this layer as gelled, "back-fill" the mold entirely with a filled resin or a mass cast resin. Generally I like this resin to be pigmented black in color and often I will use sand or fine gravel to add weight! Mass cast resin should be set off slower, generally .2% After about 24 hours you may de-mold.

**The magic is in the finish!**

Sand the seams using 60 grit through 220 grit sand paper. Voids may be filled with a small batch of resin and bronze. Polish the entire piece with steel wool. Using successive grades will improve your results. You will be surprised at the shine you can obtain! While the beautiful, even, high level golds of a lost wax are unlikely, you will get a nice "antique" look.

Here's where it gets good! Mix a "wash" of dark umber and black acrylic paint. It should be watery. Sponge or brush it everywhere on the sculpture. Continue moving the paint as it dries leaving less in the highlights, and more in the crevices. Add "texture" with your sponge and paintbrush. When the paint dries thoroughly, you may repeat the process if you'd like a darker look. Fine steel wool can "bump up" your highlights as can dry-brushng with a gold/ bronze pigment. Your skill in applying these pigments will determine the richness of your finish. Your goal is to enhance the richness that is already there, not to cover it up. (More on painting techniques in part 3!) If a seam line shows through, carefully paint it out! If you like you may add a little "Verdi" by sponging a grayish green into certain areas. To pull the finish together I use a matte varnish, but first I spray it with a high gloss clear. I have found, that for some reason, the combination of the two sprays works better. When your varnishes are dry you can occasionally "goose up" the waxy, matte sheen with a little pledge or endust. Mounts may be secured by drilling into the finished casting and attached with two-part epoxy.

*Philip Hitchcock is an artist and designer in Venice, CA.*
*Check out his web site at*
*www.hitchcockdesigns.com*