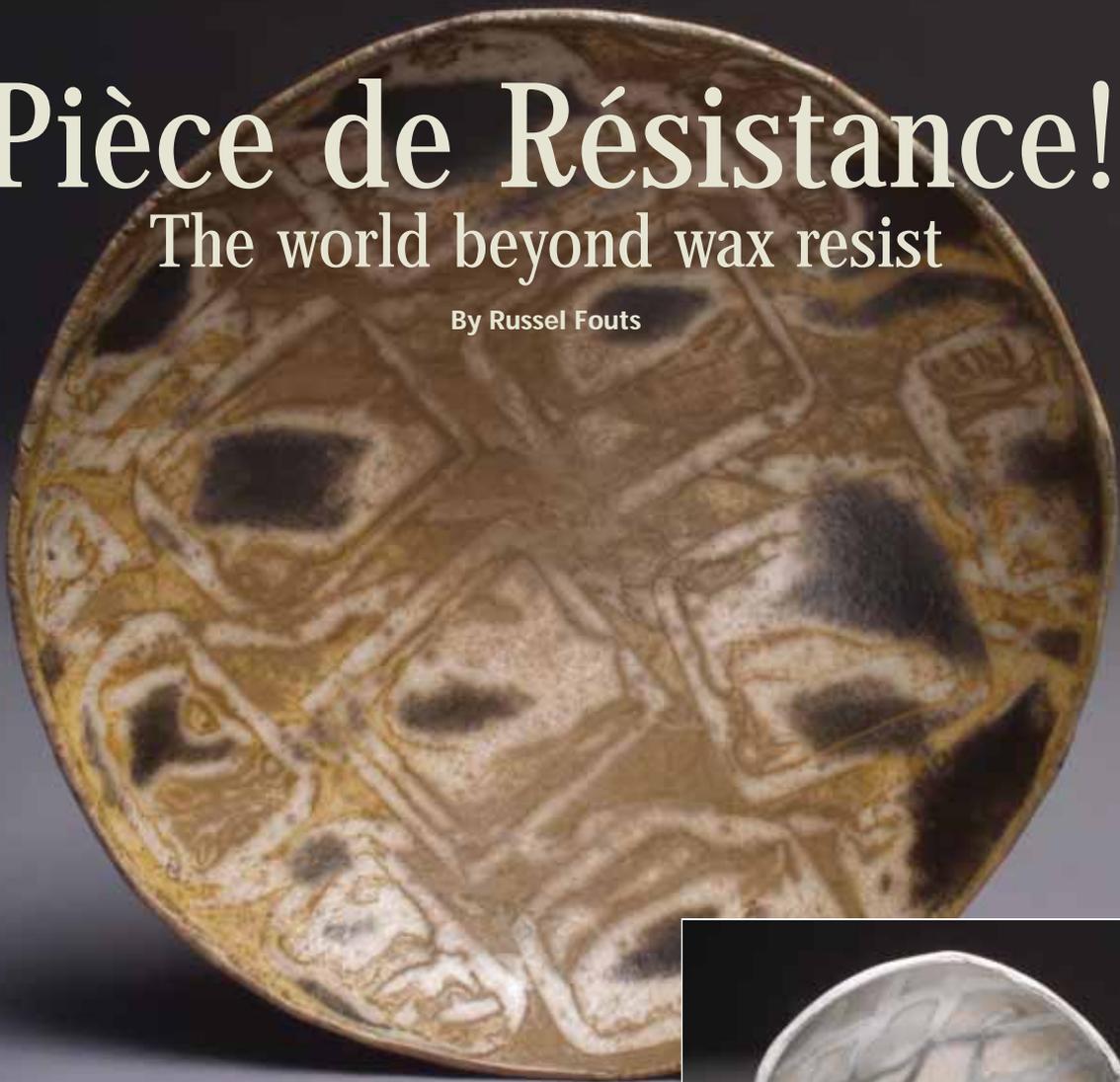


# Pièce de Résistance!

## The world beyond wax resist

By Russel Fouts



**I**smoke fire in an electric kiln using newspaper in aluminum foil saggars. Since the combustible material is trapped inside the foil, there is almost no movement of the smoke so it is prevented from making patterns on the pots. To compensate for this, I rely on resists to create interesting surfaces. But the problem is that traditional resists—like wax or latex—prove unsatisfactory because they resist too well and don't allow for “accidents” to happen. Traditional resists work by creating barriers that repel liquids like slips, glazes, washes and over/underglazes, but I'm also interested in controlling how much and where my work absorbs smoke.

Rethinking the concept of a resist and what makes it work, or not work, opens up a whole new world of possibilities for resist decoration. My efforts are now entirely directed toward the use of “permeable” resists. Resists that sort of resist and sort of don't; that block while still allowing some interaction with the surface underneath. Once you understand how resists create barriers, you can broaden your resist decorating “palette” and use their special characteristics in your work.

Top: “There It Begins,” 19 in. in diameter, handbuilt earthenware decorated with tape and paper resist, and terra sigillata, smoke-fired in an electric kiln, 2004. Bottom, “Beaten Bowl,” 19 in. in diameter, handbuilt earthenware with wax and soda resist, and terra sigillata, smoke fired in an electric kiln, 2005.

### Non-traditional Water Resists

What materials repel water? Think about all the different materials that contain waxes, oils or greases, including the oil from your skin. Soften any of these resists by warming them a little and the quality of the line changes. Here are some hard and soft resist materials you can try.

## Hard Resists

- Lipstick—makes a nice greasy line
- Eyebrow pencil
- Wax crayon—scratchy, “crayony” line
- Butcher’s grease pencil or china marker
- Chunk of wax or a candle—produces a very similar line to the china marker, and you can adjust the width of the line by choosing bigger or smaller pieces
- Oil pastels—similar line to wax but fatter, and you can use it sideways.
- Bar of soap
- Leftover chocolate—(As a Belgian, this is a real sacrifice for me.) different kinds of chocolate make different kinds of lines; the harder, the more scratchy, the softer, the fatter the line

## Soft Resists

- Full strength white glue, wood glue or any acrylic glue—trail like slip or dilute for brushing
- Acrylic floor polish—as the ads state “waterproofs and resists black heel marks”
- Acrylic artist’s medium
- Liquid beeswax—nice to decorate with and works in a pinch for waxing bottoms or feet
- Paste wax or Vaseline—good for smudgy marks when applied with a cloth or fingers

- Left over oil-based creams on your dresser
- Any oils—they can be brushed, smudged or spattered

## Paper Resists

While paper resists won’t work on bisque where I do most of my decoration, tape does and comes in many different forms and widths. Drafting and pin striping tapes come in extremely fine widths and are very flexible. Stickers are also an option. If you want a shape or thickness in a tape or sticker that isn’t available, cut the exact shape you want out of paper, glue it to the pot with diluted white glue and smooth it down with a rubber or foam roller. Or stick the edges of your paper cutout down with a border of tape. You could also cut your design out of self adhesive shelf paper or even masking tape.

## Colored Resists

The *cuerda seca* technique, which originated in Persia and eventually moved to Spain, is the technique of creating an open design using wax, oil or grease containing manganese or iron. The defined areas are then filled with fluid, i.e., colored glazes. When the work is fired, the resist keeps the colors separated and

leaves a black or brown line between them.

- Expand on this technique by adding any under- or overglaze colorant to any of the liquid resists mentioned above.
- Many of the hard resists such as crayons, pastels and lipsticks are colored with the same oxides used in ceramics, and will often leave a colored trace when they melt.
- Paper cutouts or torn strips soaked in a solution of diluted white glue and a colorant also leave behind a trace of the colorant contained in the glue.

## Pressure Resists

Think of tie dying. Wrapping different materials around your piece can provide different effects.

- Tightly wrapped string, rubber bands, or even plastic wrap (rolled into a “string” or left flat) resist water to a differing extent.
- “Fuzzy” strings (e.g., sisal) can leave a distinctive mark. If the string is absorbent, try soaking it in terra sigillata, a colorant or even a liquid resist, squeezing it out a bit to avoid drips. Carefully wrap the pot with it and then apply further decoration, slip, glaze or terra sigillata.
- Use strings made of natural mate-



Hard Resists. Chocolate, crayons, oil pastels, bar paraffin, candles, china marker, stick paraffin, soap bar and lipstick. Note: “Hard” resists work well on soft, raw glaze or slip, sprayed or brushed with a solution of CMC gum or gelatin to harden the surface. I use a solution of VeeGum C diluted with water until it can be easily sprayed.



Masking Materials. Newspaper, various masking tapes, sisal (fuzzy string), stickers, plastic wrap, various cotton strings and “lining” tape.



Liquid Resists. Latex, liquid beeswax, white glue, white glue diluted with water, salad oil, hot wax, cream shoe polish, acrylic medium and paste beeswax.

rials that can either be removed before firing or left to burn out in the kiln.

- Experiment with absorbent and nonabsorbent materials. Try using string or rubber bands to hold open-weave cloth against the pot.
- Think of those lovely finger marks left behind by the potter in the glaze around the foot of a dipped bowl. Make different kinds of marks with your fingers or hands to block the application of dipped, sprayed or spattered materials.

## Smoke Resists

Clays and glazes can resist smoke. For smoke resist to work, fire the work first to at least the point of sintering to seal them, usually a bisque temperature. Once sealed, any of the following will resist against further applications of colorants, terra sigillatas or glazes.

- Terra sigillata is not just about shine. Since most terra sigillatas are made with low firing clays, they keep the underlying body from absorbing the smoke. They take on some smoke themselves but they'll absorb less than the body underneath.
- Glazes form a barrier to smoke and can also be used to add color. An example of this is a white crackle raku glaze.
- A saturated solution of sodium carbonate (washing soda) and water, diluted sodium silicate, or any salt solution form a primitive glaze, sealing the surface of the pot against the effects of smoking.
- Metal foils, like aluminum, can be another interesting resist against smoke. Try covering the whole or part of the pot and cutting holes in the foil to let smoke in where you want. They can also be used as pressure resists or as nonpermeable paper resists when stuck down with tape or removable glue.
- A simple, thin slab of moist clay applied to the side of a pot also works as a resist against smoke.

## Application

Treat liquid or soft resist materials like any other decorating material. They are the same as oxides, colorants, terra sigillatas, slips or glazes, and you can use any means you think of to apply them to a surface. Feel free to dip, pour, spatter (one of my favorites), spray, splash, squirt or brush as inspiration directs you. Also, consider that "bad" tools can often leave the most interesting marks. Look for orphaned tools; balding brushes, spitting sprayers, decrepit sponges, ragged bits of cloth or loose bits of string. How about a mop? Not a mop brush but the hoary, old, string mop standing in the corner.



Smoke resists. (Left to right) Diluted terra sigillata with soda solution, straight terra sigillata, diluted terra sigillata and soda solution.

## Safety

Most of the materials discussed are safe to use. All natural materials should burn out safely in your kiln although you need a good venting system if you're firing indoors. Paper, tape and natural strings can either be left in place or removed as you wish. Left on, the ash residue can leave interesting traces. Plastics like acrylics and floor finishes require adequate ventilation. Trained white glue and pin striping tape should be removed before firing. The soda solution, applied directly to the surface of the work, causes



Applicators. Assorted "bad" brushes, sponge brush, toothbrush, assorted textured sponges and make-up pads.

only a very localized effect and is safe to use in any kiln.

**WARNING:** Manganese fumes from kilns have been linked to certain neurological disorders.

## Conclusion

I hope you're getting the idea. The list can go on and on. Basically ANYTHING that makes a barrier against water or smoke works in some way and each one has its own special character. Think about trying these techniques at different stages of the pot's or the decoration's development. There are a lot of ideas here but I seriously doubt that I've exhausted all the possibilities.

The chart on the following page reveals the effects different resists have on a clay surface that has been smoke fired in a saggar.

*Russel Fouts is a potter living in Brussels, Belgium. He specializes in a technique of smoke firing in his electric kiln and also makes functional majolica work. He is available for workshops. For comments and resist recipes visit Russel's website at [www.mypots.com](http://www.mypots.com).*

## Testing Alternative Resists

The items tested are listed at the end of each row. The first column shows the resist applied to a bisque surface. In the middle column, the tiles have been dipped in a soda solution on the left side and dipped in a 1/10 terra sigillata and soda solution on the right side, leaving the center portion untreated. In the third column, the tiles have been fired to 900°C with newspapers and wrapped in heavy-duty aluminium foil saggars, in a well-ventilated electric kiln. After firing, a stripe of acrylic floor finish was applied to show how color and contrast can be enhanced.



### Smoke Resists

- Brushed soda ash solution
- Cut make-up pads dipped in soda solution
- Paper dipped in soda solution
- Sponged soda solution
- Spattered soda solution using a masque
- Brushed terra-sigillata and soda solution
- Brushed straight terra sigillata



### Waxy Resists

- Lipstick
- Oil pastel
- Oil pastel sideways
- Crayon
- Crayon sideways
- China marker
- Sacrificed chocolate
- Bar soap



### Masking Materials

- Hole reinforcements
- Masque cut from postal sticker
- Thin masking tape
- Thin masking tape torn
- Zigzag of tape
- Paper masque stuck down with tape
- Masking tape cut as a stencil
- Flexible "lining" tape
- Torn strips of newspaper dipped in glue and terra sigillata and stuck down



### Liquid Resist

- Brushed beeswax
- Brushed salad oil
- Brushed diluted white glue
- Trailed and feathered white glue
- Latex with a cutout
- Smudged hand cream
- Brushed cream shoe polish