

SOLAR PLATE ETCHING

Solar plate etching is a method by which Photopolymer Printing Plates are used for either intaglio or relief printing.

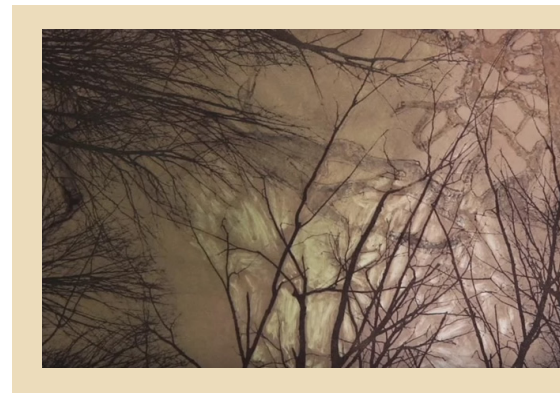
UV light or sunlight is used to expose the image and tap water to etch the plate, thus eliminating the need to use acids etc in the classroom or studio.

Used as relief, these photopolymer plates offer high quality and adaptable alternative to lino or other relief products.

Solar plate etching has emerged over the last few years in Australia as a very real alternative to traditional type etching, due primarily to its non toxic qualities. The potential is unlimited in the styles and techniques obtained as well as improving the health and safety aspect of printing.

Materials required for exposure and printing plates;

- Photopolymer Plates (water wash)
- A negative, i.e. a black image on film
- A sheet of clear glass preferably non reflective
- Clamps - only if exposing in sunlight
- A hair dryer
- Etching Ink
- A hard rubber roll to deposit the ink onto the plate
- Paper, rice paper, lightweight printing paper, litho or butchers paper
- Backing board the same size as the plate and some padding.



How to Solar Etch

Remove the protective cover from the face of the plate (instructions from manufacturer) (we have been leaving the film on so we don't get fingerprints and dirt transferred onto the plate from the acetate originals and its producing perfect results)

Position the negative on the plate, matt surface face down. (Ensure that any writing is the wrong side up.)

Place the glass on top of the negative, so that no air is between the glass and the plate. (you can make up a holder with cardboard on back and glass on top. Hold together by tape. Ensure that glass is clean as any finger prints or scratches will show up.)

Clamp the edges so that the negative does not move. This is only required if you are exposing the plate in sunlight. Clamps are not needed if the plate is to be exposed under a UV light source.

Expose the plate to sunlight for approx. 2-4 minutes depending on the strength of the sunlight (A faint image should be seen on the emulsion if exposure is correct.) If placed under a UV light source, expose for approximately 2.5 min. total. Best to always do a sample on the day with a test strip. (I did mine on a sunny winter's day and exposed plate for 4 mins. If cloudy you can still do but need to expose longer)

Once exposed, the plate should be washed immediately under lukewarm water to remove the soft unexposed polymer, preferable with the water running off the plate. Use your finger tips to rub the polymer out. If using a water bath place the plate upside down, and then turn over to scrub. (If the emulsion does not wash out of the areas easily, you have overexposed the plate. If the emulsion washes directly to the plate thus lifting the image, you have underexposed the plate.)

Please turn over

S&S
Creativity unlimited



If the emulsion is immersed too long in water, it will expand and then lift off the base. If the emulsion is still tacky even after drying, it is probably underexposed. (Don't use paper toweling as it sticks to the surface)

Remove any excess water by shaking and dry the plate immediately with the hair dryer, making sure the plate is not left feeling tacky. Try to always keep the plate as flat as possible.

Expose the plate for at least 3 minutes so that the plate is fully hardened. You do not require the glass for this step. Dust with talc powder, rub over with your fingers and then wipe off with a clean cloth. The plate is now ready for printing.

How to Print

Use a boxboard (or off cut of matt board) to "squeegee" the ink on. Use 1 bead.

Use a piece of tarleton the same size as your plate and wipe off the ink. Keep the tarleton flat. Do not scrunch up. When wiping do not use your fingertips apply the pressure with the palm of your hand

Once clean, use the palm of your hand to do a final clean up and run a clean cloth around the edge of the plate.

Place newsprint underlay on the bedplate. This can be used as the registration sheet. Then lay plate face up. Dampen the back of the print paper with a sponge. Place the paper on the plate, then the blankets.(Size catcher, cushion and pusher). Roll at an even pace, ensuring that the pressure is correct.

IMPORTANT INFORMATION

Ensure that plates are stored in the dark and in an area that doesn't get too hot.

Trouble Shooting

Problem: When washing out the plate, everything washed away.

Cause: Insufficient exposure

Solution: Increase exposure

Problem: When washing out the plate, not enough washed away

Cause: Too much exposure

Solution: 1) Decrease exposure. 2) Increase washing time. 3) Wash in area without daylight.

Problem: Plate Sticky

Cause: Insufficient post-exposure.

Solution: Post-expose again.

Problem: Not enough detail in print

Cause: Transparency not opaque enough; Transparency upside-down.

Solution: 1) Use more opaque image-making materials 2) Turn Transparency emulsion to emulsion.

Problem: "Open-bite" effect

Cause: Image too dense.

Solution: 1) Longer exposure. 2) Shorter washout & blot with fabric before washing to bottom of polymer layer. 3) Use double exposure technique with screen

Problem: Scratches in plate

Cause: Washout brush may be too rough.

Solution: Use softer bristle.

Problem: Water spots on plate

Cause: Water residue not dried quickly.

Solution: Blot immediately and dry with hair drier after washout.

Problem: White spots on plate

Cause: Acetate & photocopy characteristic

Solution: 1) Better contact with vacuum may help; however, there may not be a solution. 2) Try heavier weight acetate. 3) Dust emulsion side of film with talc. 4) Change the brand of acetate.

Problem: Black spots on plate

Cause: Drawing dust or dirt.

Solution: Brush transparency or clean exposure glass.

Problem: Drawing material transfers to plate

Cause: India ink, certain pencils combined with pressure and heat.

Solution: Dust drawing with talc or baby powder.

Problem: Parts of plate are blurred or ill-defined

Cause: Contact between plate & transparency too tight or too rigid or shifting may have occurred

Solution: 1) Use more efficient clamps or vacuum or use different transparency. 2) Use backing foam or cloth.