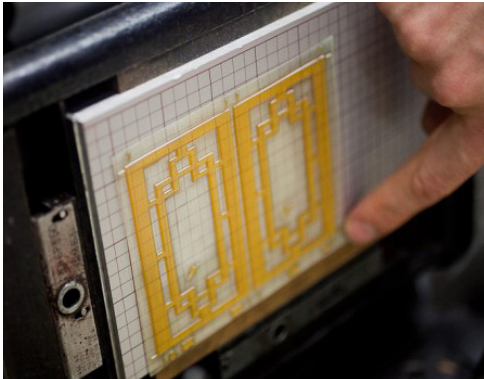


# Relief

## Creating Photopolymer Relief Plates

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A Photopolymer Relief Plate mounted in a tabletop platen press.

### Further Information

Spofford Press demonstration of Letterpress printing on an etching press: [https://youtu.be/Zd\\_xyZFv\\_wU](https://youtu.be/Zd_xyZFv_wU)

Good walkthrough example of creating a digital negative in Illustrator: <https://youtu.be/-cvGv385bwI>

Demonstration of exposure and manual developing of a photopolymer plate: <https://youtu.be/wiKYIszhYYo>



A 2 colour print made with PF152 plates and printed on the Adana 8x5.

### Introduction

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Photopolymer plates have been used in commercial printing for some years, however, the resurgence of letterpress has helped establish their use in contemporary relief printmaking. Images can be created from a wide variety of sources, from hand-drawn artwork or using photographic and digital techniques.

The artwork is exposed as a negative to a photopolymer plate, where the artwork blocks the UV light reaching the plate the polymer remains soft and will wash away, the UV light that reaches the polymer will harden leaving a relief surface to print from.

This is predominately used for Letterpress printing, however may be used for relief printing and embossing also. Currently at WSA photopolymer plates of dimensions not exceeding 160mm x 120mm can be printed on the Adana 8x5 table press or, for larger plates, on the Hunter Penrose Littlejohn etching press.

### Plate Types

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There are two types of plate available through the [WSA Printmaking Online Store](#), For Relief printing, Letterpress and Debossing the below plate should be used for the best results.

**PF152** Mylar Backed Polymer Plate 1.52mm thick, Suitable for letterpress printing on the Adana 8x5 and deep relief deboss on the Hunter Penrose etching press.

**Available in A7, A6, A5 and A4 sizes**

**The above sizes are the sold size but it is possible for you to cut them to suit your design. Any remaining plates can be stored, wrapped, in a cool dark place and used at a later date.**

It is also possible to have plates professionally created from your digital artwork. This may be a better choice if you have particularly fine detailed artwork or fine text.

If you are considering getting your plates professionally made we would recommend using [Lyme Bay Press](#). This local company has a fast plate turn around and are extremely helpful.

## Artwork

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Deboss examples on various card and paper stock printed on the Hunter Penrose Littlejohn etching press.

### Tip

\*To produce a dense black when creating a photographic negative on acetate, it is essential to print the negative 2up on the same sheet of acetate. Once printed the 2 copies of the negative are aligned, one on top of the other, to produce a dense enough negative film.

If the negatives are printed on separate sheets of acetate it is unlikely the images will align properly resulting in a poor quality negative film.

Artwork for Relief plates is best produced digitally, as a negative image needs to be created to expose to the plate. The technique lends itself to more graphic styles, though continuous tone (photographic) imagery can be employed through experimentation with bitmapping techniques. Autographic (hand-drawn) imagery may also be used however they will usually need to be digitally edited to produce a negative image.

### Photographic Negatives

Digital images can be printed or photocopied onto acetate as a cheap and easy method of creating negatives. However, as a cheap option this may produce poor results. The density of the black areas of the negative image are crucial to the making of a high quality print\*. Printing the image onto Colour Separation Film through Creative Services will provide a denser black that is necessary to produce a good quality plate to work from.

### Design Considerations

When preparing your artwork it is important to consider the limitations of the plates for printing or embossing. Very fine positive lines and serifs of type can easily be damaged during the washout process. Fine detail and small counters will also not provide good results when embossing.

### Exposing The Plate

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01. Cut your plate to size using a sharp and nick-free blade or a good quality pair of scissors.
02. Ensure the exposure unit is switched on and warmed up and the glass is clean from dirt and dust.
03. Carefully lift up the top of the machine. Place your artwork onto the glass (right side reading up).
04. Remove the protective film and put the photopolymer plate, gelatin side down, onto your artwork ensuring it is lined up properly.
05. Place a piece of cartridge paper on top of the plate and close and latch the lid.
06. The light unit setting should set to 400 light units. Turn on the vacuum. Once the vacuum is fully engaged push the green start button
07. Once the timer hits zero, the UV light will shut off and it is now safe to turn off the vacuum. Once the vacuum is off, unlatch the lid and let the rubber 'exhale' before opening.

### You will need

- Nitrile Gloves
- Eye Goggles
- Water Tray
- Soft Paintbrush/Sponge
- Chamois/Blotting Paper
- Hairdryer
- French Chalk

### Health and Safety

Always ensure you are wearing blue nitrile gloves and safety glasses while developing the plate.

## Developing The Plate

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Before you begin developing the plate ensure you have all the tools and materials ready and laid out.

01. Put on gloves and remove the plate from the glass.
02. Submerge and agitate your photopolymer plate in a tray of warm (25°C) water for one minute.
03. Continue to gently agitate the tray and gently brush or sponge over the image area, replace the water when it becomes cloudy.
04. Continue to do this until you have removed all the gelatin from the plate in the negative areas and can see the mylar or metal backplate (depending on which type of plate you purchased)
05. Rinse the plate in cold water and let excess drip off.
06. Quickly blot the plate carefully with a chamois or blotting paper, removing as much of the surface water as possible.
07. Use a hair dryer to completely dry the plate for 5-10 minutes.
08. Apply French Chalk to the plate and gently rub in, shaking off any excess. Expose the plate for a further 400 Light Units to cure the photopolymer.
09. The plate is now ready to print.

## Printing

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Small plates can be printed on the Adana 8x5 with relative ease. Plates larger than 160mm x 120mm can be printed on the Alexandra press or Hunter Penrose etching press.

Plates intended for deep emboss or blind deboss methods will need to be printed on the Hunter Penrose Littlejohn etching press.

Please consult the technician for advice on the best press to use and how to set it up.

### Health and Safety

Improper use of the press can cause serious injury and damage the equipment.  
Always ask the technician to set the press for you.

# Relief

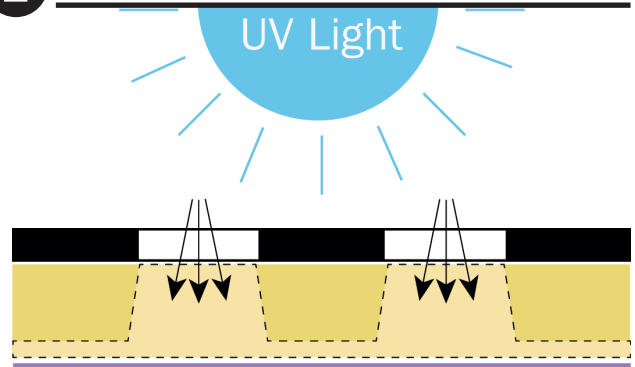
## Plate-making Process

### 1 Contact with negative film



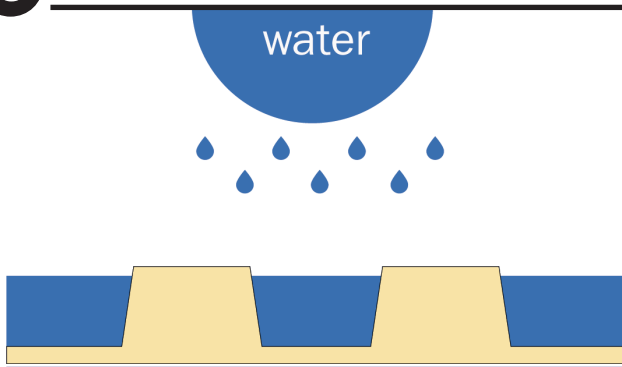
Remove the protective cover film and place a negative film on the undeveloped plate.

### 2 Exposure



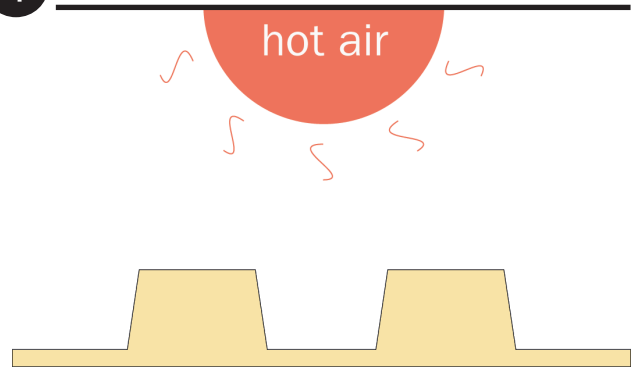
Expose the plate through the negative film to UV light for the correct exposure time.

### 3 Washout



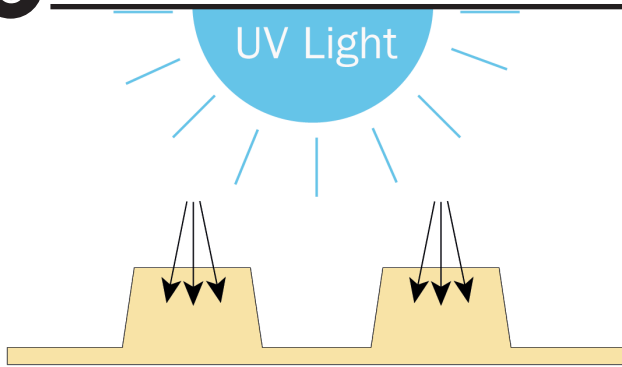
Remove the negative film. Washout the exposed plate with luke warm water for no longer than 5-10 minutes. Rinse the washed out plate with fresh water.

### 4 Drying



Absorb any excess water with blotting paper and dry with a hairdryer for 10 minutes, until there is no tackiness to the surface.

### 5 Post exposure



Expose the developed plate after drying to UV light to fully cure the polymer. Post exposure time should be the same as the main exposure time.

### Clean up

Clean away any mess or spills. Dry and put away all utensils and trays. Throw away any rubbish in the bins provided.

### Health and Safety

Always ensure you are wearing blue nitrile gloves and safety glasses while developing the plate.