

Serigraphy

Introduction To Screenprinting



Printmaking Societies:

East London Printmakers
The Printmakers Council
The Royal Society of Painter-
Printmakers

Workshops, Studios & courses:

Brighton Independent Printmaking
Badger Press
Red Hot Press
Kensington & Chelsea College Studio
North Start Studios Ltd
London Print Studios

Periodicals:

Printmaking Today
Contemporary Impressions
Pressing Matters

Artists:

Andy Warhol
Anya Galloccio
Robert Rauschenberg
Richard Hamilton
Ben Nicholson
Chris Pig
Frank Martin
Emma Grover
Angie Lewin
Louise Best
Jukka Vartinen
Irma Boom
Ursula Schutz
Lina Nordenstrom
Stephen Chambers
Ciara Phillips

Introduction

Screenprinting also known as silkscreen or serigraph, is a printing technique that uses a woven mesh to support an ink blocking stencil. The attached stencils forms open areas of mesh that transfer ink as a sharp edged image onto a substrate (i.e. base material e.g. paper, fabric etc.) A squeegee is moved across the screen stencil forcing ink through the open areas of the mesh and onto your material.

A Brief History of Screen Printing

Silk screen printing has its origins in Japanese stenciling, but the screen printing process that we know today probably stems from the patents taken out by Samuel Simon at the turn of the 20th century. He used silk stretched on frames to support hand painted stencils; a process also used by William Morris. In 1914 John Pilsworth of San Francisco also took out a patent for multicolour printing, using the screen process .

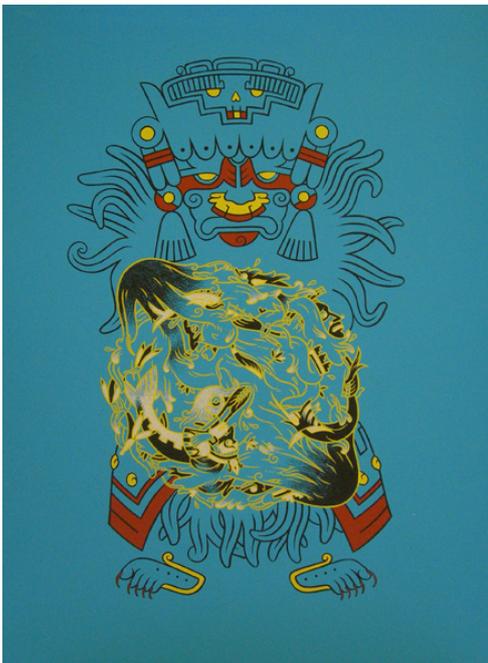
During the First World War screen printing took off in America as an industrial printing process. It was mainly used for flags and banners but also for 'point of sale' advertising in the chain stores which were appearing around that time.

Around this time the invention of the photographic stencil revolutionised the process; in the following years, improvements were made in the presses, inks and chemicals used, but apart from the introduction of computer technology in the 1980's - in the pre-press side of screen printing - little else has changed.

Many different artists have used Screen Printing, especially since the days of Pop Art in the sixties - Andy Warhol; Robert Rauschenberg and Richard Hamilton are a few notorious examples. These artists opened up a whole new vista in the use of the screen process.



'Untitled' May Yango



'Untitled' Nicholas Varsalona

General Handling

Please be careful with the screenprinting frames, they are very fragile. To avoid damaging the screens please follow these simple guidelines.

- Please remove rings from fingers as these can tear the screens.
- Be aware of your surroundings when carrying screens between the racks, beds and washout tank.
- When returning or removing screens from the racks and drying cabinet be careful!! Ensure the screens are stored the correct way round.
- Avoid leaving screens out unnecessarily. They should only be left on the bed, in the storage racks or by the fire exit **if they are being force dried.**
- **Never** leave them behind or leaning against the print beds.

Procedure

01. Book out one of the 4 screenprinting beds by writing your name and email on the clipboards near the fire exit.

You may book for a maximum 3 hour block per day. If you are late, your slot may be given to another student.

02. Book out an appropriate size screen by writing your username on a piece of brown tape and place it on the frame edge.

You may only book out one screen for one week unless you have permission from the printmaking technician.

03. Leave your screen in the coating area and notify the technician so they can prepare your screen.

PLAN AHEAD! Expose your screen in advance to make the most of your time on the beds.

Please don't block book the beds "in case you might want to print" Respect your fellow students and give them opportunity to use the equipment.

It is your responsibility to reclaim the screen after you have finished with it. You may not use another screen or book out slots on the beds until this is done!.

If in doubt ask the technician for advice or assistance!

Screen Coating Directions

To reduce wastage the technician coats screens on request at the end of the day. If you require a screen please ask them in person or email the technician in advance of your scheduled printing slot.

If you wish to learn how to coat a screen please ask the technician for a demonstration before following the below guide.

You will need:

- Newspaper
- Wooden stir stick
- Scrap of greyboard
- Trough scraper
- Coating trough (suitable size)
- Plastic end caps
- Azocol Z1 emulsion
- Screen

01. Close and lock the door to prevent the emulsion being exposed to light. Layout scrap paper on the light table and ensure have everything you will need to hand.
02. Ensure the ends caps fit snugly and check the coating (thin) edge of the coating trough for dirt, dings or nicks that could damage the screen.
03. Make sure your screen is completely dry before proceeding. Prop the top edge of your clean screen under the wood block on the wall with the print side (flat side) facing out.
04. Open the Azocol Z1 photo emulsion and stir it with the stir stick to make sure it is mixed well (it can separate over time).
05. Pour the photo emulsion into the coating trough so that it fills up one inch from the bottom of the trough. Ensure the emulsion is evenly distributed in the trough.
06. Place the coating edge of the trough against the screen, one inch from the bottom inside edge of the frame.
07. Apply a little pressure and gently tip the trough so the emulsion pools against the screen.
08. Carefully drag the trough up the screen being sure to maintain light pressure so the trough keeps in contact with the screen.
09. Stop two inches from the top inside edge, maintain pressure and tilt the trough back allowing the emulsion to settle back in the trough and drag up one more inch.
10. Smooth out the edges of the emulsion where it is thickest using the scrap of greyboard.
11. Carefully place it, flat side down, on one of the shelves in the drying cabinet. Adjust the shelf by depressing the trigger and slide left or right accordingly.
12. Scrape any emulsion back into the tub using the trough scraper. Make sure the lid is on the tub and return it to its place. Wash and dry; the scraper, stir stick, end caps and coating trough using the white handle brush by the sink and put them back.

Important!!

Don't drag the coating trough over the screen frame, always allow at least one inch between the emulsion and inside edges of the frame.

Good Housekeeping

Respect other users of the equipment. Ensure the light table is clean and any rubbish put in the appropriate bin.

Exposing Your Screen

Follow the directions on the wall to turn on the exposure unit.

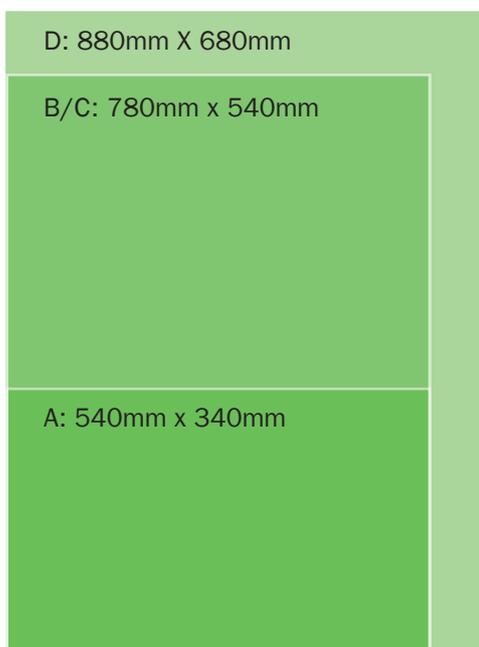
01. Lift the lid and check the glass is clean from dust, dirt and emulsion residue. If it needs cleaning use Mr Muscle and Blue Paper Towel, ensuring it dries thoroughly before continuing.
02. Close and lock the darkroom door and remove your screen from the drying cabinet. Make sure your screen is completely dry!
03. Place your film positive on the glass right side reading up (type should be legible). If exposing multiple films onto one screen, arrange them accordingly, leaving enough space.

Information on creating film positives for screenprinting can be found in the 'Creating Films For Printmaking' guides.

[Films From Digital Sources](#)

[CMYK Process Films](#)

[Printing Onto Acetate](#)



Maximum print area for each screen size.

04. Very carefully place your screen, flat side facing down, centred on top of your artwork. Do not slide the screen on the glass (this will scratch the glass!)
05. Check you have left sufficient space between the artwork and the inside edge of the screen. Always leave a minimum of 6cm between the artwork and the screen edges.
06. Close the lid and secure the latches. Turn on the vacuum and wait for it to fully engage, the rubber lid will be pulled snugly around the screen frame
07. Check the light unit setting is set to the correct exposure time for the type of film you are using. **Refer to the table on the wall.**
08. Push the green start button and let the timer count down to zero.
09. Once the timer hits zero, the UV light will shut off and it is now safe to turn off the vacuum. Once it is off, unlatch the lid and let the rubber exhale before lifting it.
10. Carefully lift out the screen and proceed to the washout booth and follow the instructions for washing out the screen.

Good Housekeeping

Ensure you remove your acetates from the exposure unit and look after them. Leave the glass clean on the exposure unit and close the lid to avoid dust settling in the unit.

Screen Washout Directions

CHECK THE HOSE IS CONNECTED AND THE WATER IS TURNED ON

Health And Safety

You must wear goggles and gloves when using the washout tank. Always wear ear defenders when using the high pressure washer.

01. Carefully place your screen in the washout booth with the squeegee side facing you (flat side facing the back of the tank).
02. On low pressure thoroughly wet down the screen, you will see where the unexposed emulsion becomes lighter. Turn the screen around so the flat side is facing out and thoroughly wet down this side too.
03. Leave the screen for 30 seconds for the emulsion to soften and continue washing out the stencil area on low pressure.
04. Check your screen has been thoroughly washed out by holding it up to the light. If necessary, use high pressure on the flat side of the screen and from a distance of about 30cm, until the stencil areas turn yellow.

Washout should usually take no longer than 2 minutes. If you are having problems seek advice from a technician.

05. Once the image is washed out, let the excess water drain off and remove the screen from the booth.
06. Dry the frame edges with Blue Paper Towel and return the screen to the racks to dry naturally or use a fan or hairdryer if required.
07. Ensure the screen is thoroughly dry before continuing.

Screenprint Ink

Daler-Rowney System 3 Acrylic Paint is provided for you to use. It is important that this paint is mixed with Printing Medium to prevent the ink from drying in the screens. The ratio for mixing is 60% Printing Medium to 40% Acrylic Paint. Plastic tubs and lids are provided so that you can custom-mix your colours.

Always mix a full plastic tub of ink, you don't want to run out half way through printing. Follow the directions on the mixing table for the correct measurements.

Cyan, Yellow, Magenta and Black inks are premixed and can be used directly from the large tubs on the ink table. Please avoid contaminating the colours and replace the lids properly to stop them drying out.

You may take any custom mixed inks with you to use for screenprinting at a later date, or to paint with, they will last approximately 6 months in a cool place.

Important!!

Only water-based inks can be used in the studio.

Good Housekeeping

Please clean up any ink spills from the mixing table and wash any tools you use.

Printing

You will need:

- Squeegee - slightly larger than image
- Premixed Ink
- Scrap Card - for scraping up ink
- Printing Paper - cut to size
- Bucket with Water and Sponge
- Paper Towels - for drying the screen

Before printing, it is best to have everything that you will need prepared and at hand in order to avoid the ink drying in the screen. If the screen is not printed constantly, the ink will dry out very quickly. Once this happens, the screen will need to be washed out.

The screenprint vacuum beds all provide the same printing convenience. The vacuum helps to keep printing paper in place and the squeegee arm provides even pressure distribution for large-scale screenprinting.

Please ask the technician about any questions related to the screen bed adjustments, as they are too complicated to explain here.

There is a sign-up sheet for each table so make sure that you sign up and arrive at your time or the bed will be given to someone else.

Clean Up

01. Scrape up any excess ink from the squeegee and screen with an ink knife or scrap of greyboard.
02. Wash any remaining ink from the squeegee with clean water and a sponge, dry and return it to the rack. **Never leave the squeegee in the sink or bucket!**

Cleaning the screen in situ.

03. Spray with Mr Muscle and wash out with clean water and a sponge. Keep the bed raised so as not to make the vacuum base wet and dirty.
04. Dry the screen with the paper towels and continue printing.

Follow the Screen Reclaim Directions if you have finished with the screen.

Cleaning the Screenprinting Bed

01. Use Mr Muscle and a blue J cloth to clean up any ink residue on the screenprinting bed and to carefully remove ink from the top of the acetate registry sheet.
02. Ensure any tape is removed from the bed and the screen locks and arm are free from ink.
03. Put everything back in its place. Newsprint, inks, buckets and sponges, tape, screens, etc!

Good Housekeeping

It is very important that you clean up after yourself once you are finished printing.

The screen, squeegee and vacuum table need to be thoroughly cleaned before you leave the workshop and everything put away.

Screen Reclaim Directions

Once you have finished with your screen it is your responsibility to reclaim it for other students to use.

CHECK THE HOSE IS CONNECTED AND THE WATER IS TURNED ON

Health And Safety

You must wear goggles and gloves when using the washout tank. Always wear ear defenders when using the high pressure washer.

Important!!

Always ensure you remove ALL the emulsion, once it dries onto the screen again it cannot be removed. Repeat this process to remove stubborn or thicker areas of emulsion

01. Ensure any excess ink residue and tape (including your name) is removed from the screen before carefully placing it in the washout booth.
02. Use Mr Muscle and a sponge on the stencil areas to remove stubborn ink stains, rinse on low pressure and then wash on high pressure from a distance of 10-15cm, on the flat side of the screen.
03. Brush Pregasol F onto both sides of the screen and leave it to activate for 1 minute. Never let the chemical dry onto the screen!
04. Rinse the excess chemical from the screen on low pressure.
05. Wash the screen on high pressure with the flat side facing out. Be systematic working from top to bottom and left to right to remove **ALL** the emulsion.
06. Brush Pregar NT9 onto both sides of the screen, rinse excess chemical off the screen and wash on high pressure in the same manner as in step 5.
07. Remove the screen from the booth and dry the frame edges with Blue Paper Towel.
08. Carefully place the screen in the racks to dry.

If in doubt ask the technician for advice or assistance!