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proposed wall printing & tiling technique
proposed by peter laxalt

The thought of large-scale wall printing & tiling is hard to wrap your mind around. Keeping a consistent image on a t-shirt with an average printing area of 14" x 18" is one thing. Holding registration throughout multiple prints on a scale such as a t-shirt isn't very hard, and is a process that has been around for hundreds of years - starting in ancient China.

registration - *The process of lining up the screen image to the original art and/or separations on a printing press and/or exposure unit.*

registration marks - *"Crosshair" target marks used for aligning a screen image to the source art.*

Let's try screen printing at approximately 8x the size of a t-shirt. Our goal size print is about 8' x 4' including a bleed. There are multiple problems that immediately come to mind:

1. **Maintaining registration between prints**
2. **Stretching the mesh**
3. **Maintaining a crisp image**
4. **Drying the ink**
5. **Material to create the oversized frames**
6. **Whether to use emulsion or vinyl to create the image**
7. **Method of applying the ink**

Theoretically, if all of the above criteria are met, screen printing of *any* size medium is possible. The real question is how to achieve the above criteria to successfully print multiple walls, with multiple colors, and irrelevant to the printing process itself - to successfully tile these walls when placed together. The tiling will be possible if the printing is acheived.

$0.02

For this proposal's sake, first and foremost I do not believe we will be able to acheive the textbook style of screen printing. To build a squeegee big enough to push the ink through the screen will be one thing, but for one to two people to consistently pull that squeegee consistently between colors and walls. What I am proposing is a printing/stencilling technique that is very close to the screen printing process, but also a form of stencilling.

stencil - *A sheet, as of plastic or cardboard, in which a desired lettering or design has been cut so that ink/paint applied to the sheet will reproduce on the surface beneath.*

I do not believe we can acheive this via stencilling. If we did, it would be incredibly inefficient, time consuming, and disposable. Secondly, if we were to stencil multiple colors, consistently, we would be limited not only by lack of registration, but also we must keep in mind that stencilling does not allow 'islands' as screen printing does due to the fact it is a cut image out of one sheet. My interest in stencilling is the **speed & application** of the image.
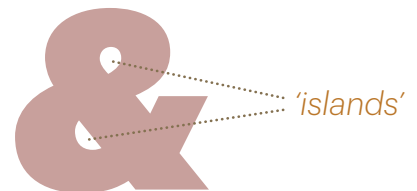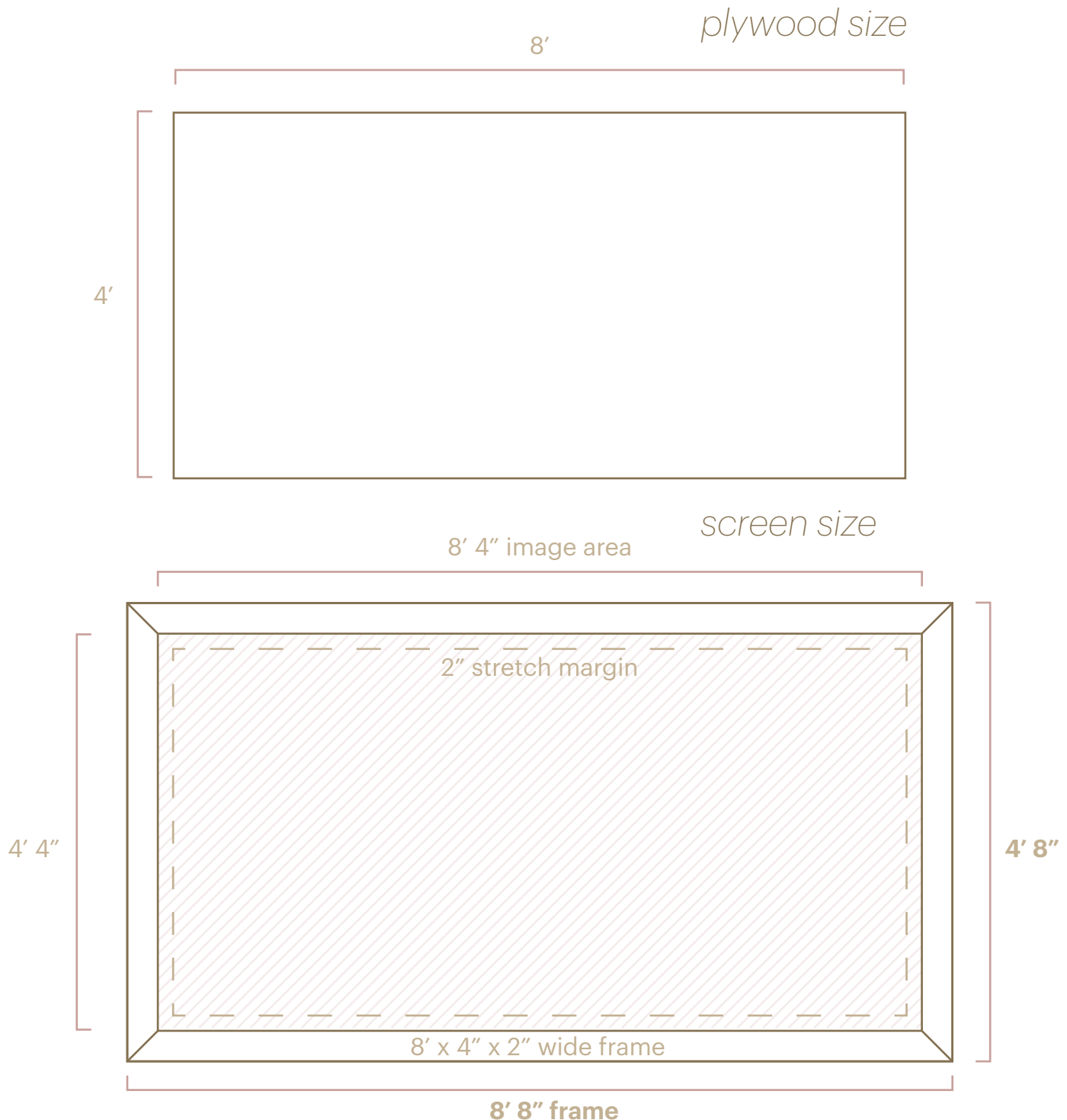
'islands'

I believe combining the consistency, quality, abilitiy to maintain islands, and simplicity of screen printing with the effectiveness, speed, application, and process of stencilling we will be able to acheive a consistent print on a large scale.

dimensions

plywood size

8'

4'

screen size

8' 4" image area

2" stretch margin

4' 4"

4' 8"

8' x 4" x 2" wide frame

8' 8" frame

When screen printing you need ~2" margin of the edge of your image and the edge of the frame, due to the tension of the mesh across the screen. You will lose registration, and your image will get blurry. This is a frame for only one of four colors. Four frames would be ideal due to time constraints, but only one frame will be required to print this project. All of these sizes (except argins) are subject to change and purely for explanation.
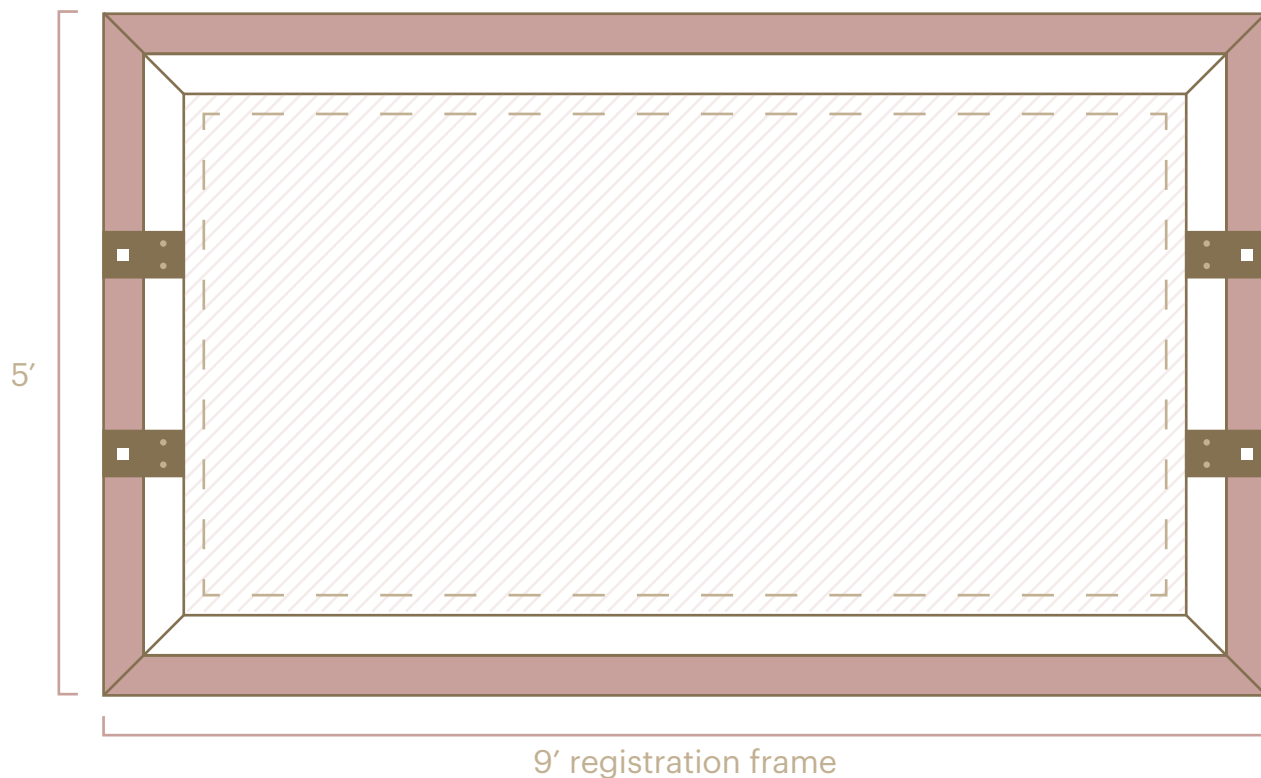
without screen

6" wedges to hold plywood in place (~1" tall)

5'

[plywood goes here]

registration pins

9' registration frame (~3" deep)

*with screen*

5'

9' registration frame

4

To keep an image of this size in registration requires extremely precise measurements. It is essential the image does not move during the printing process. My approach includes building a frame for the screens as well as plywood to be placed in. To maintain a snug fit and minimal to no movement of the plywood, and inner frame/wedge is required to place the plywood in to keep it in place while the printing process takes place. All printing will be taking place while plywood is laying flat on the ground. While inside the wedges illustrated to the left.

6" wedges to hold plywood in place (~1" tall)

[plywood goes here]

This placement of the plywood will be in an approximately 3" deep frame. 3" to compensate for estimated height of the plywood - 1" - and the theoretical height of the screen printing frame - 2". The reason for this is to create a small drop and a precise fit for the screen printing frame to fit in and lay over the plywood. The precise & snug fit is essential to not lose registration while printing. To aid with this, registration pins will be placed on parallel frame edges the ensure an exact placement of the screen for every print. The screens will contain registration holes for the pins to be inserted. This is a very basic pin registration system - used commonly for flier & poster screen printing.

Mainly to prevent movement of the image, the screen will contain registration pins that correspond with the pins on the outer frame. The frame itself should hold the screen in place if measurements are executed correctly. With the precise placement of the screen during printing, this allows the image to print in exactly the same spot every time if the pins are precise, as well as the plywood being held within the inner 1" wedges. Registration is now established with this frame, allowing more colors to be printed corresponding to the first color printed on the plywood.
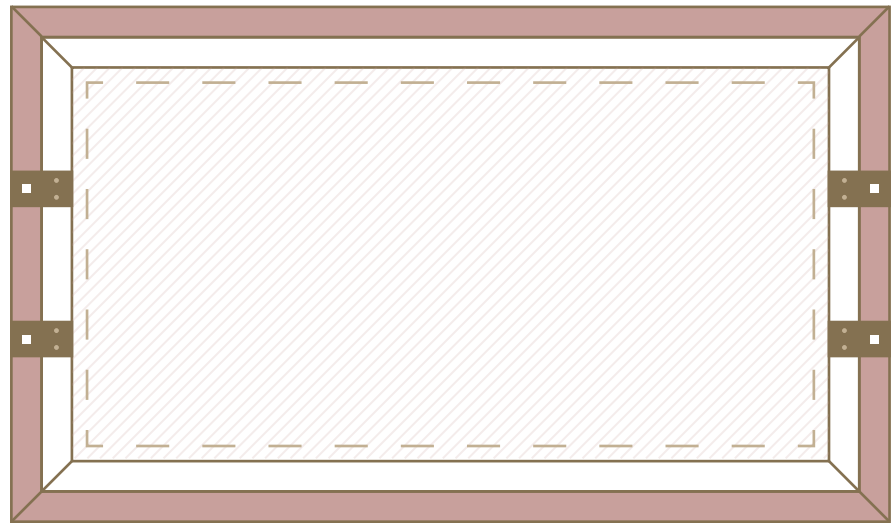
There are many other factors that come into play that will effect this registration system. These factors include tension of screen mesh, mesh count, pressure of ink application, direction of ink application, and method of ink application. All of these factors can be compensated for if screens are made correctly as well as if ink is applied correctly as well. Using this method unlimited colors can be applied to the plywood, but time constraints may suggest that we do a four to five color print maximum. A new screen will be added per color, as each screen will contain a certain color of ink. In the screen printing process, an image is held on a screen most commonly using a photographic emulsion. In the stencilling process, an image is held with a sheet.