

Indigo Clothing Ltd: Artwork Design for Screen Printing

Art design for screen printing is very different from any other type of design. This is due in large part to the inherent limitations of the screen printing process. In addition, the size of the designs necessitates the use of vector art as opposed to pixel based art. Blowing up art to fit on the full back of a T-shirt (13.5" x 18") requires crisp and exact lines. This tutorial will attempt to explain the screen printing process and the requirements for submitting screen printing designs.

General rules for submission: The general rules for submitting vector art are as follows:

- The art must be submitted in Adobe Illustrator (if submitted as Adobe Photoshop min. resolution must be 400dpi);
- The art must contain not more than four different colours (spot colours, not colours);
- The thinnest lines cannot be less than .25 point;
- There can be no gradients, shadows, or colour tints;
- All text must be converted to outline.

File Programs and Format: T-shirt design requires the vector art format due to the necessity to blow up and resize art work. Since there are a variety of vector art programs, we have chosen the industry standard; Adobe Illustrator. If we had to get every vector art program and convert different versions of each file sent, we would have more trouble opening the files than we do already. We prefer the files to be sent in the .ai or .eps format. If the file is bigger than 1 Meg it should be zipped or stuffed.

No greater than four colours: It is important to understand the actual process of screen printing in order to understand why multiple colours' cause problems. Each colour requires a separate screen to be created that corresponds to that colour. Then each screen must be perfectly registered over the other so that no overprinting of colours occurs. The more colours you print, the more likely you are to have a registration problem. If the colours overprint, or the (fabric moves or stretches, the shirt is then unsuitable for sale.

The shirt is placed on a platen and each screen swings around over the top of the shirt. The screen is then brought down and placed on top of the shirt. A squeegee is then pulled over that screen's ink colour which pushes the ink onto the shirt fabric. That screen is then lifted, carefully off of the shirt. (If the shirt moves or is stretched, the next colour will be out of registration.) The platen with the shirt is then moved under a flash unit where it dries. Upon curing, the shirt platen is brought back and the next colour screen is swung over the top of it. To better understand the process, take a look at the screen printing machine below.

As you increase the number of colours, then, you increase the risk of misregistration.

Thinnest line can be no less the .25 point: Screens are made by putting a chemical emulsion on a mesh surface. Vector artwork is taken from Adobe Illustrator or Freehand and printed out on a film type paper or vellum. The screen is then exposed on a light table with the artwork under it. The light solidifies the chemicals around the design, and where the light failed to pass through, the chemical breaks down. The screen is then rinsed out and what is left is the area where the light hit.

Since the screen mesh is of a certain finite size, only lines over a certain line can actually hold the emulsion. So you are limited to about a .25 point line for screen printing.

Gradients: It is extremely difficult to accurately produce gradients when screen printing. This is because of the way they are produced. If you want to have the background of your design to go from navy blue to aqua blue by gradient, the only way to print it would be to use half tones. What this means is that the screen would be outputted from the computer with dots, which would increase in size as you went from one colour to the other. The navy blue would fade when printed because the dots would get bigger thus printing less of that colour. Then the Aqua screen would be just the reverse.

Gradients are difficult to print. The printer can spend days with the art, testing shirts and inks before producing a sellable shirt.

Text converted to outlines: Because there are thousands of fonts, and we could not have all of them installed in our computer, it is necessary for all text to be converted to outlines. This will allow us to view your files as they were designed, instead of having our program convert your font to one that is installed.

Friday, 17 January 2003