



Basics of Flexo and Litho Printing

Hello there and welcome to Zumbiel Packaging.

We would like to introduce you to the basics of flexo and litho printing. Here at Zumbiel Packaging we're unique in that we have both print processes under one roof. That allows customers to change print processes as they grow and as their needs change without having to switch to a new supplier or to a different plant within the same supplier's network.

You probably remember from kindergarten and finger painting, but the colors blue, red, and yellow, can be combined to make just about any color. One of the bases of printing is that those colors plus black are the elements of printed images. Cyan, magenta, yellow, and black are the technical names and they're referred to collectively as the process colors. Here you can see the four process colors separated and then combined to make this image of Times Square.

Now that we've discussed a little about separations, we can move into flexo printing. Flexo uses a printing plate with a raised image you can think of it as a very special sophisticated rubber stamp. Here's a flexoplate, flat before it gets mounted on its sleeve, and here's another being mounted in the Press. Ink is pumped into a cylinder called an

anilox. The anilox meters the ink volume and then applies that ink to the raised image area of the plate. The plate transfers the ink to the web of paperboard. As that web passes through the press, you can see the black anilox in the foreground transferring ink to the plate, then the plate printing that image onto the paper board.

The next print process is litho. Litho is based on the principle that oil and water do not mix. Here you can see a litho plate, flat before it goes into the press. The blue is the image area. The rest of the plate is the aluminum, non-image area. Notice that a litho plate is smooth, unlike a flexo plate. Water is applied to the entire plate. The blue image area does not accept water but the aluminum non-image area does. Watch the image area repel the water. Ink is also applied to the entire plate. The ink is made from soybean oil and since oil and water don't mix, the wet areas of the plate won't accept the soy oil-based ink. The plate then prints onto a very smooth compressible rubber blanket that ultimately prints the ink on the sheet.

There you have a very basic overview of the four process colors and a flexo and litho printing.

We'll record more videos to take a deeper dive into them as well as some of the other processes that go into making a folding carton. Feel free to contact us if you have any questions or comments about what you saw here and we hope to see you again soon.

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