

## Lithographic Printing, how it works...

The most common form of printing is lithographic printing

The name lithography originates from the words lithos, stone, and graphia and was invented by Alois Senefelder. Lithography is a planographic process; this is nothing more than a process for printing from a smooth surface, called a plate, to a substrate, generally a paper.

Originally lithography transferred the ink directly from the stone or plate to the substrate. Today lithography is normally referred to as Offset or Offset Lithography; both are the same process. In this printing process, offset lithography, the image to be printed is rendered or etched onto a flat surface, (the plane) such as a sheet of aluminum. Next the image is transferred to a rubber roller, and then finally to the substrate.

## How does Lithographic printing work?

The process is founded on the fundamental principle that oil and water will not mix. There are a few steps in getting the image into a printed page, first the plates.

In lithography the plates have a rough texture which is coated with a light sensitive emulsion. This emulsion is a suspension of two chemicals that cannot be mixed together, a common example of an emulsion is butter.

Plates are made one of two ways: Exposure from light source with film on top of the plate, or using a machine that exposes the plate, using lasers directly from the computer. both methods used creates a photographic negative of the required image, releases the emulsion, and transfers a positive image to the emulsion. The emulsion is then chemically treated to remove the unexposed portions of the emulsion. This final step is similar to developing film at a photo lab.

When the printing plate is made the image is rendered grease receptive / or water repelling. The non-printing areas are rendered water attracting, and ink repelling. On the press the plate is mounted on a cylinder which as it rotates, comes into contact first with the rollers wet by a dampening solution or water, which adheres to the rough, or negative portions of the image. Then the plate comes in contact with the roller coated with ink, which adheres to the smooth, or positive portions of the image.

If this image were directly transferred to paper, it would create a positive image, but the paper would be moistened. Instead, a rubber cylinder, called a blanket, is rolled over the plate, squeezes away the water, and picks up the ink. The cylinder is then rolled over the paper, transferring the ink. Because the image is first transferred to the blanket cylinder, we call this process "offset lithography" because the image is offset to the drum before being applied to the paper.

## The Advantages of Lithographic Printing

Printclever uses Lithography and normally prints Full colour (CMYK). Lithography can be used in short, medium, and long print runs. Sheet-fed and web presses are both used in lithography. Sheet-fed lithography is used for printing: Business cards, Letterhead, Corporate stationery, Datasheets, Flyers, Corporate Folders, NCR docketbooks, Greeting Cards, A5 flyers, A6 postcards, A6 flyers, A4 flyers and Compliment slips.

Lithography provides the best print result, the Resolution in pin sharp and can me reproduced on many different stocks. Lithography can be run 24/7 and had been used in Dublin Ireland since early 1800