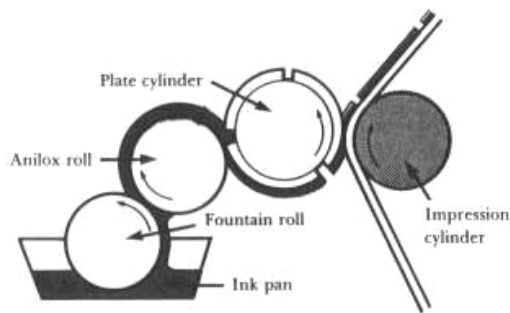




Learning About Labels

How does the Flexographic press work?

Flexography is the major process used to print packaging materials. Flexography is used to print corrugated containers, folding cartons, multiwall sacks, paper sacks, plastic bags, milk and beverage cartons, disposable cups and containers, labels, adhesive tapes, envelopes, newspapers, and wrappers (candy and food).



Process Overview

Diagram of Image Carriers Used in Printing Processes
In the typical flexo printing sequence, the substrate is fed into the press from a roll. The image is printed as substrate is pulled through a series of stations, or print units. Each print unit is printing a single color. As with Gravure and Lithographic printing, the various tones and shading are achieved by overlaying the 4 basic shades of ink. These are magenta, cyan, yellow and black. Magenta being the red tones and cyan being the blue.

The major unit operations in a flexographic printing operation are:

Image preparation
Platemaking
Printing
Finishing

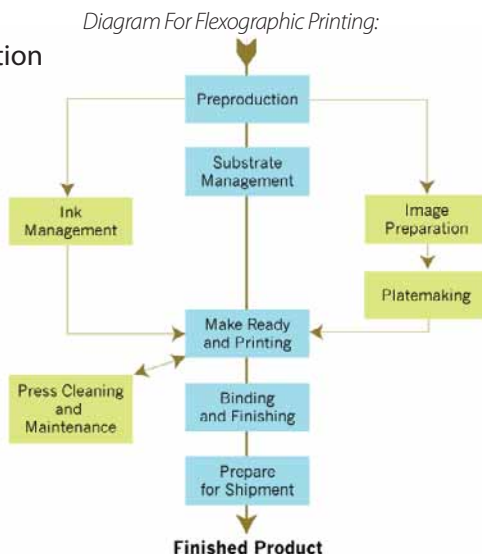


Image Preparation

Image preparation begins with camera-ready (mechanical) art/copy or electronically produced art supplied by the customer. Images are captured for printing by camera, scanner or computer. Components of the image are manually assembled and positioned in a printing flat when a camera is used. This process is called stripping. When art/copy is scanned or digitally captured the image is assembled by the computer with special software. A simple proof (brown print) is prepared to check for position and accuracy. When color is involved, a color proof is submitted to the customer for approval.

Flexographic Plate Making

Flexographic and letterpress plates are made using the same basic technologies utilizing a relief type plate. Both technologies employ plates with raised images (relief) and only the raised images come in contact with the substrate during printing. Flexographic plates are made of a flexible material, such as plastic, rubber or UV sensitive polymer (photopolymer), so that it can be attached to a roller or cylinder for ink application. There are three primary methods of making flexographic plates; photo-mechanical, photochemical and laser engraved plates.

Flexographic Printing Presses

The five types of printing presses used for flexographic printing are the stack type, central impression cylinder (CIC), in-line, newspaper unit, and dedicated 4-, 5-, or 6-color unit commercial publication flexographic presses. All five types employ a plate cylinder, a metering cylinder known as the anilox roll that applies ink to the plate, and an ink pan. Some presses use a third roller as a fountain roller and, in some cases, a doctor blade for improved ink distribution.

Flexographic Inks

Flexographic inks are very similar to packaging gravure printing inks in that they are fast drying and have a low viscosity. The inks are formulated to lie on the surface of nonabsorbent substrates and solidify when solvents are removed. Solvents are removed with heat, unless U.V. curable inks are used.
More information...

Finishing

After printing, the substrate may run through a number of operations to be "finished" and ready for shipment to the customer. Finishing may include operations such as coating, cutting, folding and binding.