Flexographic printing

Introduced into Britain in the early 1960’s. Similar in principal to (and a development of) Surface printing. This proved a very cost effective way of printing at a time when production costs and performance were particularly important in a competitive market.

**FLEXOGRAPHIC PRINTING, OR ‘FLEXO’ AS IT IS MORE COMMONLY REFERRED TO, IS A RELIEF TYPE PRINT PROCESS THAT USES A RELATIVELY SOFT RUBBER PRINT CYLINDER WITH A ‘RAISED’ PRINTING SURFACE. THE AREA YOU DO NOT WANT TO PRINT IS CUT OUT OF THE ROLLER, LEAVING THE RAISED AREA FOR ACCEPTING THE INK, IN A SIMILAR WAY TO A HAND HELD RUBBER STAMP IS CUT.**

The print stations are equally spaced around the outside of a large cylindrical drum that carries the paper, face out, around it. This drum is approximately 1.2 metres in diameter, however, a flexo machine can, if room permits, have an ‘in-line’ configuration, as a gravure machine does.

The print roller itself will be typically 52cm in circumference and between 52 and 68cm.

The ink is transferred from the ink tray to the print roller via an ‘anilux’ roller, the purpose of which is to both even out and determine how much ink is transferred onto the cylinder.

A deeply cut anilux roller will transfer more ink than a shallow cut one. As the print cylinder rotates the ink is transferred directly onto the paper as it’s squeezed against the large cylindrical drum.
This process will readily accept the use of either solvent or water-based inks, although like gravure, solvent based inks are considered more stable for printing purposes.

Flexo printing is such a versatile print process that, along with the wallpaper industry, it is used extensively in the packaging industry, for printing such things as plastic bags, crisps packets, cardboard boxes, etc.

In keeping with most relief type print processes flexo cylinders lay down a single flat colour, therefore if numerous tones of the same colour are required, for say, shadowing purposes, then each colour would require an individual cylinder. Although in recent times advances in cylinder cutting technology have resulted in flexo rollers that now produce a reasonable degree of tonal work.

1 Close up of Flexo cylinder showing ‘raised’ print motif

2 The flexo print machine showing the ink transfer from the ink tray via an anilux roller onto the print cylinders