

Proofing methods

Presenting the customer with a proof that is as close to the finished print as possible while keeping costs down remains a challenge for flexo pre-press houses and printers.

By *Neel Madsen*.

Getting to press with aniloxes, plates and ink that will produce the correct print the first time is what flexographic printing is all about. But with a process that has so many variables, the importance of accurate proofing becomes ever more important. Both flexo proofers and digital proofing each have their own advantages and we look here at some of the many options available.

chase flexo proofing machines because they can replicate press parameters without the expensive business of supplying incorrect plates or running production press trials for customer approvals. They remove the remaining uncertainties from digital proofing and can also be used for testing production inks and substrates saving the significant costs associated with carrying out this testing on production press.'

sleeves or continuous sleeves. Servo driven machines are fully electronic with motors controlling the rotation and impressions settings. Any issues can be dealt with via a remote diagnostics. The proofing function can also be incorporated into the plate mounting process and the company has a wide range of mounter proofers on the market.

Ms Heaford continued to explain that while it is difficult to provide an absolute answer on costs of digital versus flexo proofing, the following factors are relevant. Capital costs are higher for flexo proofers but the life times are much longer, 15 to 20 years compared to three to five years. Operating costs for inks and consumables are higher for digital proofing. Key in the calculations is the savings from elimination of production press proofing.

She concluded, 'Flexo proofing will identify the faults that digital proofing can't, namely manufacturing errors in plates and sleeves. Though digital proofing is becoming more prevalent, there is still a definite requirement for flexo proofing. The increasing technology incorporated into our proof presses reflects the users demands on this type of proofing.'

AV Flexologic's Flexo Proof Press has a chromium coated cylinder to support the substrate, a cantilever sleeve change system for printing sleeves and an anilox sleeve. The ink deck is driven with AC servo motors, while the ink chamber has been designed so that it is very easy to change ink and clean the system. With a max proofing length of 3500 mm and width up to 1700 mm, the proofer prints at speeds of up to 100 m/min.

Many of the company's mounting systems also offer the operator the ability to make a 100% print before bringing the sleeves to the printing press. As such, the complete image can be checked for plate mistakes, and with a magnifier it can also be determined if the printing plates are mounted within registration. This can either be done by the operator manually or by using a computer controlled system which



JM Heaford's Drum Flexo Proof Press

Flexo proofing

Traditional freestanding proofing machines are still used by many printers as these have the advantage of being able to check the contents of the plate and ensure that they have been produced correctly before they go on the press. Other options include machines that combine the mounting and proofing operations.

Having sold over one thousand proofing machines and proving that there is a definite demand for flexo proofing, JM Heaford's customer base is made up of printers, repro houses and plate and sleeve manufacturers, and in the case of gravure, also cylinder manufacturers.

Sally-Anne Heaford said, 'While digital proofing obviously has its benefits, customers continue to pur-

The company said that flexo proofing presses, using production aniloxes and doctor blades, ink and substrate are able to achieve a match of between 95% and 98% of the production result. Customers use the flexo proof presses for either quality control of platemaking and continuous sleeves or customer approvals. A colour takes 10 minutes to proof and the investment in the machine is quickly recovered. One customer in South America said that the cost of the machine was recovered in less than a year on savings on airfares from not flying customers to its facility for on-press approvals.

Flexo proof presses are available in narrow or wide web, geared or servo driven and can be used for cylinders,

positions the proofing drum and pulls a proof automatically.

Digital proofing

Until the late 1990s, the printing industry mainly relied on manual processes to produce proofs, but with the arrival of wide format inkjet devices, software developers began to develop front end proofing solutions to control both data interpretation and colour output. From a production perspective, the benefits of utilising inkjet technology were threefold: the low cost of proof, speed and automation.

Early software developers engineered proofing applications that printed continuous tone, or 'Contone' images, which output a stochastic or FM screen, giving a photo-like effect on the proof. Since the early inkjet devices were limited to an output resolution of 720 dpi, the decision to choose Contone as an output format was understandable and Contone proof systems became popular among the largest target market, the offset printing industry.

Mimic then merge

The flexo sector however required a more refined solution to show the effect of various production influences, and Kodak's Approval system (see below) became popular amongst the packaging fraternity.

the Star Proof proofing system.

Graphic Republik's Steve Donegan explained, 'Star Proof works by using the final colour separated 1-bit Tiff or Len files which will be used to image the flexo plate. Each

in highlight areas, and 'spot colours' which are automatically calibrated via a multi colour library.

More recent developments by inkjet manufacturers have further expanded the quality offering. Addi-



The operator can manually ink the plates and produce a proof

colour is independently corrected for ink hue, dot gain, overprint and grey balance to mimic different press/substrate characteristics. The separations are then merged to create a final print file with the resultant inkjet proof showing the actual dot structure, which will be seen on press.'

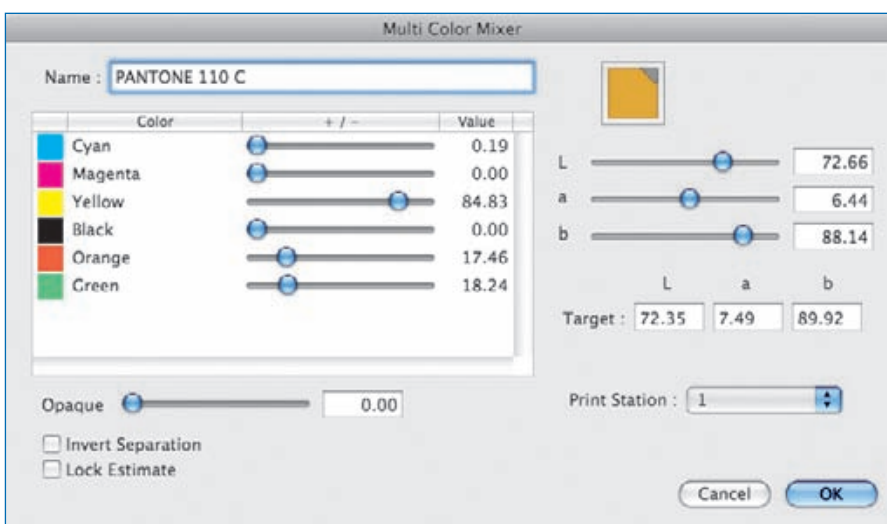
tional ink sets, such as orange and green, help to closer match spot colours, and devices are now capable of outputting at high resolutions of 2880 dpi. With the introduction of the Stylus Pro WT7900 device, Epson has addressed another key packaging proof requirement – the appearance of white ink.

Released in 2010, the WT allows for an opaque white ink to be printed on substrates ranging from transparent and adhesive films through to metallic foils. As the white can be applied surface or reverse print, it enables a broad spectrum of packaging proofs and mockups to be created. One additional benefit is that this white ink set is water based and needs no special ventilation is unnecessary.

Linking with the cloud

Esko's FlexProof, an option on the Imagine Engine RIP solution, will also output contract proofs to a range of Epson printers. It integrates with Color Engine and PantoneLIVE for colour management and Automation Engine for workflow.

'In the packaging market, the accuracy of brand colours is critical. Research shows that consumers spend five seconds or less making their decision on what product to



Screen shot of Star Proof's Multi Colour Shade Mixer

Software to meet the challenge of using inkjet devices to produce a cost effective yet colour correct halftone proof was developed by ISI Graphic System, the developer of

Additional flexo related features are also available, such as 'ink spread' which shows the effect of pressure related dot gain, 'dot loss' which mimics the effect of lost dots