

ABSOLUTE'S INKSAVE DOES MUCH MORE THAN JUST SAVE INK AT ADARA PAKKAUS



INK LOSS

IS ONLY HALF THE BATTLE

As brand owners push for greater consistency between all their printed materials — from print advertising to shelf ready packaging — the variable nature of the flexographic print process can present problems that cost corrugated packaging manufacturers in unexpected ways.

“Boxmakers sometimes say to me that ink is cheap, so why should they worry if they lose a few kilos flushing it out as long as they can get the next job on press quickly,” says Wilbert Streefland of printing consultancy Technology Coaching. “After all, with shorter run lengths and more make-readies throughout the industry, it sounds like sense to get the press up and producing sheets as quickly as possible. But the thing they don’t realise is that with all that washing, they’ll have a lot of dirty water inside and the press won’t give them accurate print colour on start-up. So although their raw changeover times

might look good, they’ll spend a lot of extra time and board getting the colour right. On top of that, they’ll also be paying as much to clean the dirty water as they did for the ink they lost — so they are paying several times over.”

Antony Whiteside, Managing Director of Absolute Engineering, says that Streefland’s analysis is echoed by their own. “Operators are under pressure to get the next job on press as quickly as possible and they believe that the fastest way to do this is to wash the old colour down the drain. This wastes a lot of ink and water. It also results in another issue — most wash systems do not focus on removing residual water in the system. This means that even though the operator brings new ink from a modern ink to the press kitchen that is press ready, it is immediately diluted by the remaining water, and is out of specification — so any possibility of ‘first box saleable’ is lost. But, as Streefland

says, the boxmaker also has to pay for more ink, for more water and to treat the waste water. It's a big deal because colour consistency becomes harder to achieve and because of that, only about half of the ink that a boxmaker buys gets put on the board."

Having looked at the problem in detail, Streefland realised that, even simply in terms of the waste ink, boxmakers were unaware of how serious the issue was. "The ink returned from a printing machine might not be identical to the ink delivered because of water additions during the production run or from the wash cycle. Assuming that 10 kilos of ink has been put into the machine and 9.5 kilos is returned, you'd think the ink lost would be half a kilo. But if a kilo of water had been added to the system, then the ink returned contains 10% water. This means that of the 9.5 kilos returned, only 8.55 kilos is ink and you have actually lost 1.45 kilos of ink. So, you're ink loss is three times more than you thought."

Case Study

Ilmo Nurminen, Technical Manager for Finland's Adara Pakkaus Oy, was keen to address such issues. "We try to prevent and reduce the detrimental environmental impacts of our operations and at the same time our product quality is really important to us, especially as we offer a complete packaging solution from design through to packing the product into the box. If we have a problem with the quality of the box, then it's our people who suffer further downstream."

To ensure colour consistency, Nurminen wanted to be able to minimise ink loss and residual water during changeover on Adara's presses, while also

ensuring the quality of any recovered ink and the doctor blade chambers cleanliness after wash up. Nurminen says that his company is keen to use innovative technology where it can deliver improvements in quality, productivity or environmental performance — and with this in mind they approached Absolute Engineering with a view to trialling its InkSave system on one of its presses. "About eight years ago we installed Absolute carbon fibre chambers on a Bobst SPO-Flexo 2000 at our Valkeakoski plant and they have performed very well. In fact, they are still just like new. Our experience with these Absolute chambers gave us confidence that their InkSave system would work well."

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"Because there is then less ink in the system, less water is needed for cleaning. We also focus on drawing residual water from the system on completion of the wash-up, resulting in a minimum amount of water in the system to affect the colour of the next job."

The PLC controlled InkSave system removes the ink from the chamber and recovers it to the ink bucket for re-use; washes the chamber, anilox, pumps and piping to ensure a totally clean ink circuit; and then recovers the residual wash water in the system.

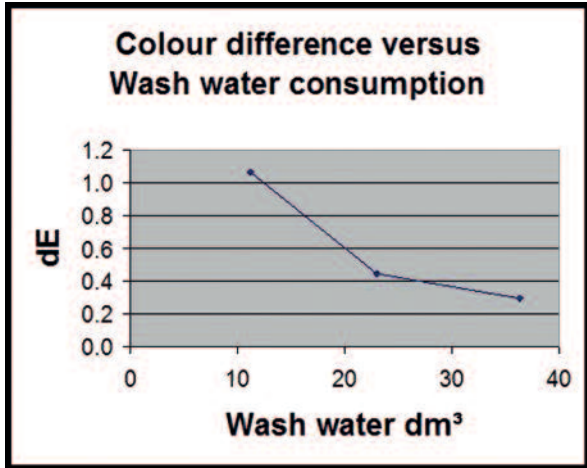
Nurminen considered that the Bobst flexo would make a good pilot machine because it runs on three shifts and processes 10 million square metres of board a year. "It would prove whether the InkSave system would do what we wanted it to do — and also cope with high throughput."

Test Results

Adara Pakkaus asked Streefland to carry out a number of tests before and after the InkSave installation last October. These included measuring the amount of ink lost, the amount of water left in the system and the ink system's cleanliness after ink change. "Ink loss before the system was installed was 2.6 litres per change, but with the InkSave system installed it was down to 600ml. Water retention dropped from a litre to just 200ml."

Streefland designed a new test for flexo presses specifically to measure the cleanliness of the system after wash-up. "The test pushes the system to the extreme in terms of colour change. The

results show that using just 25dm³ of wash water the InkSave enabled press is much cleaner after a colour change than when washing out alone. Only a small quantity of ink is left in the system at the end of the ink retrieval cycle, which means that the washing of the screen roll is more effective from the very start. The test we have developed for Adara is very interesting in that it quantifies something that before was very subjective.”



The effectiveness of ink retrieval with the InkSave unit means that only a small amount of wash water produces a very clean result — even with extreme colour change.

Streefland says that InkSave is the first retro-fit system he has seen where users can truly predict the colours they will achieve after colour change. “Fresh ink in a dirty system means that the colour changes, and then, when you add more ink it changes again. The operator is fighting a losing battle. With InkSave, when you prepare your ink from the dispensing system it will be press ready, with the right viscosity and with no changes needed on the machine. I think this system is the best I have seen in terms of lean manufacturing because it focuses on the minimal use of resources with the bonus that ink adjustments are not needed for the next job.”

Nurminen says that today’s corrugated pack is no longer just a transport package — it’s a vital part of their client’s brand and marketing. “We work with customers to be sure we know exactly what they want and they tell us that their packaging has to stand out because consumers make their buying decisions based on it. Inconsistency across substrates, or even between batches, confuses this. By investing in an innovative system like InkSave we are able to provide the quality and consistency our customers expect — and achieve it more easily.” ■

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“The chambers Absolute supplied for our new High Quality Conprinta Pre-Printer performed beyond our expectations. In all our flexo print trials we have never seen a chamber 100” wide meter so precisely at 300m/min. Great job! There is no doubt Absolute will be supplying our chambers moving forward.”

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