

Apex offers offset printers attractive alternative for existing anilox roll

GTT: More gloss, less lacquer

Apex Group of Companies has built an unrivalled reputation in the Flexo industry as a producer of high-quality anilox rolls for printing on corrugated board, flexible packaging and labels. From its home in the Netherlands, this innovative, family-owned business has expanded its international sales presence into more than 80 countries worldwide, as well as having major production facilities in Italy, North America, India and Brazil.

Additionally, the newly-refurbished and expanded state-of-the-art headquarters are also home to Apex's leading-edge R&D department, where it developed its patented GTT (Genetic Transfer Technology) metering roll. This groundbreaking new technology has allowed market leader Apex to offer offset printers a genuine alternative to existing anilox rolls, an alternative which brings with it such advantages as a visibly and measurably higher gloss; a more consistent layer; significant savings on lacquer; and infrequent roll changes.

Genetic Transfer Technology

Already renowned as a leading global producer of anilox and metering rolls, Apex has built on its twelve year history in Flexo technology to develop its pioneering Genetic Transfer Technology. Driven by the increasing demands of the Flexo industry, GTT transcends the technical limitations of traditional anilox rolls to offer enhanced results and significant savings to offset printers worldwide.

Many of the specific limitations of anilox are related to hexagonal, Trihelical and positive screens. To overcome these issues, Apex tore up the old rule book and took Flexographic printing in an entirely new direction, combining three distinct new developments - a newly composed ceramic layer, a new laser technology, and a newly developed profile. Taken together, these elements resulted in GTT.

Equal lacquer layer

The most important advantage of GTT is the improved laydown of aqueous or UV lacquer, as compared with a conventional anilox roll. GTT has dispensed with anilox cells, utilising instead a unique "slalom" structure. This innovation is why Apex now speaks about metering rolls, and no longer about anilox rolls.

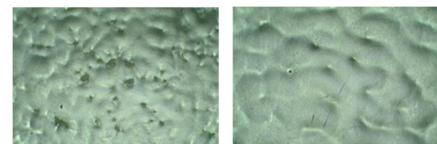


Photo: conventional anilox smoothness (left) & GTT smoothness (right)

Joris Cabri, Global Offset Manager at Apex explains: "Due to its unique surface structure, GTT enables the transfer of an extremely homogeneous and consistent lacquer layer over the full width of the printing sheet. This has a visibly positive effect on matt/satin lacquers, as well as on gloss lacquers".

Less lacquer, more gloss

Aqueous lacquer is often used to protect the printed materials, or to process them faster afterwards. Gloss lacquer is also applied to create added value. "For both applications, GTT offers interesting advantages compared to the existing anilox rolls," explains Cabri. "By using the right profile, it is possible to achieve an increase in gloss, while at the same time using less lacquer. Can you imagine what would happen if you used just a little more lacquer? The gloss value would be considerably higher."

Hardly any roll changes



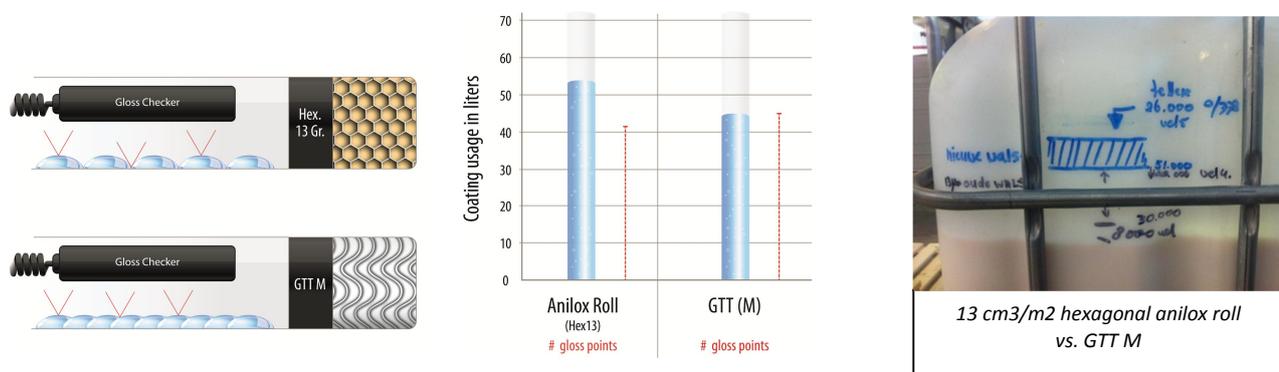
Apex has developed four different profiles of GTT metering rolls for the differing requirements of its various markets: S, M, L and XL. Said Cabri: "For the majority of all lacquer orders, the L-profile is universally applicable. However, by using the M profile, it is possible to print even more economically, while the S-profile is used for special applications. In the UV-range, the XL profile gives the best results, with any orange-peel effect being significantly diminished."

Photo: Joris Cabri, Global Offset Manager at Apex Group of Companies

To illustrate the point further, Cabri points out that, as a result of its reduced lacquer consumption, the M-roll is ideally suited to the application of protection, matt and satin lacquers; and in the case of gloss, it is sufficient to replace only the lacquer, and not the anilox/metering roll, thereby saving enormously on time and reducing the risk of damaging the anilox rolls during the changeover process.

Proven in practice

Despite being a relatively recent innovation, the GTT metering rolls developed by Apex have already proven themselves in demanding industrial settings. For example, at the end of last year, a Dutch printing company field-tested the technology by exchanging GTT for a standard anilox roll during an actual print order. By simply marking the level difference onto the storage tank, the printer was able to calculate the difference in consumption, and the result spoke for itself: after both orders were finalized, it was established that the GTT roll created impressive savings and an increase of gloss. The performed friction test was within the range of the desired glide path; and the abrasion test demonstrated that the same level of abrasion was retained.



Change easily from conventional to GTT

Apex has made it easy for any offset printing company to change from conventional rolls to GTT. Apex possesses a wide range of banded rolls which are ready for trials at printing companies – and these companies can determine for themselves which profile gives the best results. Most commonly-used types are currently in stock in the Apex warehouse, and can be delivered very quickly. Additionally, in order to create fast and simple mounting into the printing press, all rolls are already provided with new bearings.

Furthermore, there is no need for the printer to change the currently used lacquer. Alternatively, the printer may choose for already optimized lacquers, utilizing the extra advantages that GTT offers.

“The one-time investment in GTT metering rolls is quickly paid back with the help of savings of lacquer,” calculates Joris Cabri. “Besides, less maintenance is needed and less time is lost in exchanging the rolls.”

Because of the increasing pressure to save on costs and the higher quality requirements of end users, many printing companies have already embraced the benefits of GTT.

[Sidebar] Anilox roll vs GTT

There are massive technical differences between traditional anilox cells and the GTT slalom channels. To create anilox cells, a pulsing laser that creates holes in the ceramic top layer of the roll is used, like a sort of ‘Woody Woodpecker’, pecking out the walls of the anilox cell. This kind of method requires a high degree of control and precision, because the large quantity of pulses must be positioned very precisely in order to achieve the required screen fineness. These cell shapes – in particular the hexagonal cell shape – come with certain limitations: for instance, they are extremely sensitive to the sort of pollution that causes deteriorated cell emptying. Additionally, by closing it in the chamber doctor blade system, friction and foaming occurs, which causes a disturbance of the equal surface of the lacquer layer.

Conversely, the Apex-patented GTT engraves a constant pattern of slalom channels in the roll. These channels are filled with lacquer much more easily than are closed cells, while the transfer onto the printing form is also easier.

Because of this, doctor blade pressure is barely necessary, and due to the smooth bottom of the surface hardly any pollution occurs, making the cleaning of GTT metering rolls much easier.

Finally, as a result of the broad application of GTT metering rolls, only a few profiles are necessary: S, M, L, XL.

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