

# Gravure finished films

*The supply chain of gravure printing was the centre of attraction at the »Gravure finished films« event, the first international conference of its kind, Innoform Coaching had organized on November 5–6, 2008 in Osnabrück/D. During the 12 presentations, more than 150 guests gained a deep insight into the updated developments and trends in gravure printing, relating to colour systems, printing cylinders, manufacture quality, security systems and machine techniques. In addition to the theoretical input, Windmöller & Hölscher demonstrated a Heliostar G press at their technology centre in Lengerich/D, producing a six-colour multilayer laminate 520 m/min (1700 fpm) – the practical aspects definitely were well in evidence.*

Karsten Schröder (*Innoform Coaching*) welcomed the attendees and promised a series of interesting lectures that would reflect the complete supply chain of gravure printing. The large number of guests from packaging manufacturers, end-users and suppliers proved that the near enough »hands on« practical, the well chosen themes and the information, were a hit.

Following the introduction, James Siever (*ERA European Rotogravure Association*) took over, giving apart from information and details on many aspects of gravure printing, in publications and decorprint, furthermore about the image, the chances and the potential of package gravure printing. According to a *GfK* survey gravure still has the highest printing quality and reliability but they recognise inflexibility in branded goods. Therefore expectations of gravure print are high in short handling times and competitive prices and short runs.

Rudi Weis-Schiff (*Janoschka Group*) clarified the average cylinder price, to the supply industry. In Europe in 1990 the price was EUR 1000 and is now EUR 350. The prices are not only influenced by production location, manufacturing equipment, degree of automation and contract volume but also the handling time (transport time included, which in total is about two weeks). The challenge and competitiveness of small runs, such as the new hollow cylinder concepts, like *Cylight* from *Janoschka* or *Gelenium* from *Saueressig* have an effect.

The advantages of lower weight, lower transportation and storage cost was covered by Stefan Beilenhoff (*Saueressig GmbH & Co KG*). The in-house development of the *Gelenium* sleeve is based on the conical principle; the core is of Aluminium with a chemically nickel plated outer layer. It also has solvent resistance, unlimited usage and can be imaged with all gravure and laser methods. The sleeves can be used in different types of presses.

An important aspect in gravure printing is definitely the ink systems available. Dr Stefan Häp (*Siegwerk AG*) showed the delegates that two-component and effect inks can benefit face printing. The information from his lecture: Against the background of new packaging and materials or regulations, the ink systems offer not only the chance to realise innovative packaging concepts but also options to increase efficiency or for cost reduction. With a side-sealed bag for example a laminate coating (film, adhesive and processing) can be replaced with a two-component ink and an overprint lacquer. High standards are also demanded from the ink system when laminating printed films.

The challenge is the mixture between inks and adhesives to avoid migration, poor compounding or insufficient sterilization characteristics as Dr Matthias Henker (*Flint Group Germany GmbH*), pointed out. The latest developments in this area were presented as pure Polyurethane-based lamination inks that are not only suitable for flexo and gravure printing but adhere on nearly all types of film; they are chlorine-free and allow sterilization applications.

Whether print and film quality fulfils the customer's expectations and how this can be discovered was explained by Jochen Mank (*Amcor Flexibles Europe Schröder & Wagner GmbH*). Apart from the aim of delivering safe products for customers and consumers in the right time, quantity and quality, *Amcor* have the ambition of environmental protection, job safety and economy. To achieve these goals a variety of equipment and various testing processes are available. It is also very important to include the staff in quality inspection during the production, independent of what management tool (Kaizen, Six-Sigma) is installed to give continuous improvement, as in future it will not be possible to win or please customers without such a process.

The requirements of the customer and thus for the packaging producer are increasing constantly as Karolina Rosenberger and Micha Weik (*Alcan Packaging Kreuzlingen Ltd*) emphasized with examples of security systems for gravure printed pharmaceutical packaging. In addition to security characteristics visible for the customer, hidden char-

acteristics that can only be identified under specific conditions are required to protect pharmaceuticals against counterfeiting – an increasing phenomenon worldwide. Visual effects are fine line prints and holograms, whilst large colour pigments as used for banknotes or printed moiré effects stay hidden and can only be controlled with great technical effort. In gravure printing these larger pigments, for example, require deeper cells and a very sharp edge.

With in-mould labelling (IML) the advertising message should come across very clearly. Udo Skopek (*Rahning GmbH & Co KG*) showed in his report that gravure printing is the method for IML when large runs or special requests like solvent/water-based inks/lacquers or when difficult materials are required. One of the problems in production is the separation of labels and the chargability for the subsequent injection moulding. One technique, for example, is the addition of a spacer into the lacquer. But how good is the charging of the printed substrates? To measure this is not so easy, especially when in laminated films, various charge levels are included.

Uwe Matschulat (*QUMA Elektronik & Analytik GmbH*) presented a newly developed measuring instrument. The substrate to be measured is decharged contact-free using ionised air and recharged again contact-free. Then the decharging process is measured. The data is documented and can be the basis for quality management for product development and control.

An important part of the supply chain for gravure printing is the machine techniques which was the topic of Clemens Brinkmann (*Windmöller & Hölscher*). Varied change concepts for trolleys, slide-in cassettes and sleeve solutions or the selection of hollow or shafted cylinders offer the printer a wide spectrum to select the press tailored to their requirements. Based on the *Heliostar* gravure press concept he outlined that there is no contradiction between high speeds and short runs. Innovative solutions such as the patented inking roller, the automatic pre-register system *Easy-Sync* or the new patented colour matching system *Easy-Col* guarantee not only fast changeovers but also excellent print quality.

The main topic of Gerhard Hochstein's presentation was print quality and its absolute repeatability even after years. His company *Interprint GmbH*, one of the leading decorative gravure printers worldwide, and their customers expect stable colour accuracy and repeatability even after years. To achieve this they have the modern finishing technology like laser gravure systems, online colour measuring systems and special gravure printing machines.

With the theme »Standardisation of flexo helps achieving gravure quality« Udo Linke from leading flexo tradeshop *WKA Warburger Klischee-Anstalt GmbH* pointed


out that the standardization of flexo will not achieve gravure print quality but will enable excellent print quality. Prerequisites are modern photopolymer endless sleeves that guarantee high consistency of highlight dots and high resolution offering further savings potential.

The guests were then taken to the *Windmöller & Hölscher* technology centre in Lengerich/D. Runs on an eight-colour *Vistaflex C* CI flexo press demonstrated that excellent print quality with endless sleeves can be achieved at a maximum speed of 800 m/min (2624 fpm). Equally impressive were the changeovers of this first automatic setup flexo press with extremely short changeover times.

Maximum output, reduced setup times and minimized waste were the main focus of the demonstrations of the *Heliostar G* gravure press and the fast changeover with the help of slide-in carts and the automatic makeready systems.

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