

UV is breaking new ground in the production of tinfoil

Hoffmann Neopac benefits from the many years' experience with UV curing in metal decorating – IST Metz as technology partner from the company's inception

Metal is a packaging material for the future. Branded companies often use metal packaging if a product is to be well protected with a high quality presentation. It is also sustainable, as it is 100 percent recyclable without any loss of quality. With a high quality finish, it ensures a high level of attention from consumers. Hoffmann Neopac AG in Thun in Switzerland has already been using UV technology since 2002 to be able to achieve a wide range of individual models. Michael Wagner, COO of the company, and Production Manager Urs Mauerhofer explain the benefits achieved by using UV curing and the longstanding co-operation with UV provider, IST Metz.

Achieving the optimum in each case using UV

The company had taken the plunge virtually 20 years ago to reject traditional thermal curing when it installed its first multicolour printing press and equipped the new facility solely with UV curing. IST Metz was established as the supplier for this. The decisive features when selecting the UV system include the variable

performance setting. As the energy input can be controlled effectively, production with a minimum of curing performance can be achieved wherever the combinations of ink and varnish will allow. The space required is also significantly lower compared with thermal curing. In modern machines, even in compact models, these are often 20 metres in length. Ultimately, at today's usual printing

Packaging has been Hoffmann Neopac AG's core business for more than 125 years. The tinfoil containers manufactured in Thun (Switzerland) for the food, tobacco and confectionary industry are defined especially by the decoration, Michael Wagner explains. The intervals in which the marketing departments of the customers present new designs are getting shorter all the time. For certain products, it is usual for the templates to change twice a year. Decorative elements, e.g. matt/gloss effects, are increasingly in demand. The print technology systems are designed for this.

output, adequate curing and cooling zones are to be ensured for up to 8000 boards an hour. The UV system proves to be significantly more economical even in terms of service and repair costs.

The positive experience made with the system led to a complete changeover to UV printing in 2007. A second machine, also a Roland 900 series



sprint model, was also equipped with UV technology from IST Metz as part of the expansion investment.

"The combination of technical versatility and our many years' experience with UV printing enables a very flexible production process", says Urs Mauerhofer. "It is a fundamental condition in order to actually achieve all the effects that our customers offer".

Food-compliant packaging

Both printing presses have a double stack in the delivery. The consequently lower stack means less bonding pressure, thereby eliminating the risk of marking-off and ghosting effects. A varnish tower is installed next to the offset print works in the second print line, which has an additional IR drier with a hot-air-knife system. According to Urs Mauerhofer, with the integrated flexible varnishing unit, dispersion coatings can also be applied and

cured inline. Mario Werner, sales manager for metal decorating at IST Metz, does not know of any other printing company with a comparable arrangement. The second curing unit opens up particular opportunities with water-based varnishes.

Managing 'visco-elastic' properties of the ink systems

The extrusion of metallic packaging, which in some cases is also combined with mechanical expansion for complex and unusual can shapes, presents the ink layer with a major challenge. It cannot be too brittle or too flexible to prevent the ink from breaking or 'bleeding out'. Exactly the right dose should therefore be used to cure the inks and varnishes. Michael Wagner describes the challenge:

"Our aim throughout the production process is to manage the properties of the ink systems in

such a way that we are always able to manufacture new cans, which meet the ink quality requirements, particularly around narrow radii".

The company has devised the necessary expertise to do this over many years. These results are not achievable with conventional curing systems.

Changeover to UV has paid off

Looking back, the decision to opt for UV printing has proved itself a milestone in terms of heat and energy. Thanks to the reduction from seven curing ovens at that time to today's two and two multicolour printing presses, Hoffmann Neopac has been able to achieve a noticeable decrease in energy consumption. As a Swiss company, the business benefits from the fact that the Swiss VOC incentive tax, which has to be paid when using solvents, ceases to apply when VOC-free UV inks are used.

One less printing operation thanks to UV

Hoffmann Neopac has developed an innovative process for direct metal decoration, made possible by using IST's UV system. By effectively controlling the lamp systems, the surface energy of a tinplate sheet is influenced in such a way that printing takes place without first applying a primer. The company received a European-wide patent (EP 2 428 359 B1) for the process in 2012. The company in Thun is the only user to date to carry out direct metal decoration based on this method.

Service contract as an all-round carefree package

Ease of use, alongside output control, was a further deciding factor in favour of IST Metz for Hoffmann Neopac. Quick lamp changes also played an important role. Moreover, only original UV lamps from IST Metz are used in Thun today. The company has found that its service life is higher by a factor of 5 to 7 compared with contract manufacturers. This is one of the reasons why we have now entered into a virtually all-round,

carefree package in the form of an individual service contract with IST Metz. This includes the complete replacement of the lamps once a year as part of preventative maintenance. Thereafter, the system is again in operation 365 days around the clock. Unplanned stoppage times to replace individual lamps are therefore avoided.

After replacement of the UV lamps, Hoffmann Neopac measures what output they still have after a year. The measurements of the replaced lamps generally lie in the region of 92 per cent – a value that is able to guarantee completely reliable production. Regular and proper cleaning of the lamps and the reflectors has a major role to



Printing tinplate sheets requires special experience because of the material's properties and the special appearance.

play in achieving the long service times. The UV systems use URS-type reflectors, which demonstrate a high level of reflection in the UV range and prevent an excessive increase in temperature. IST Metz achieves both through a multilayer structure that is manufactured in the vacuum process. Reflectors are replaced at Hoffmann Neopac if a rise in temperature in the coolant circuit indicates a reduction in reflective power.

Design consulting tailored to the 'metal environment'

For branded companies, it is essential that a packaging supplier offers attractive options that they

are able to play off against their competitors. Tinplate cans generally give products a higher intrinsic value than plastic containers, for example. Metal decorating requires considerable technical expertise to achieve a comparable image with print and finish effects with other types of packaging, e.g. collapsible boxes. Hoffmann Neopac supports agencies that have little experience with metal packaging using design consultancy. Alongside a high quality print image and different varnishes, customers also value the textured effects, in some cases, in the form of embossments. In tinplate packaging, they represent a particular

endurance test for the layers of ink in the embossed areas. The technical equipment in production has a key role to play, Michael Wagner explains.

"Our machine arrangement concentrates on UV technology, allowing a variety of print and finishes, with which we are also able to meet our customers' unusual requirements in top quality. We have already been able to win prizes in a number of competitions with them."



Lower stacks are formed by double stacking in the delivery, thereby reducing the risk of marking-off and ghosting effects.



Your SPECIALIST Mario Werner
Sales manager for the metal decorating industry,
IST Metz

"Metal decorating would not be what it is today if it wasn't for UV technology"

Recyclable metal packaging

As a manufacturer of metallic packaging, Hoffmann Neopac points to the beneficial properties of the material for recycling. As it is endlessly recyclable, it enables a sustainable use of resources and helps to avoid waste. The EU Commission only talks about 'permanent packaging material' in the case of two materials. One of these is metal. So that end customers are

able to familiarise themselves with this benefit, the company provides information on its own website (www.metaliseternal.com) about the durability of metal as a packaging material.

Even though Michael Wagner expects there to be fewer large printing presses on the shop floor in the future when it comes to digital printing, they will not disappear entirely. Sooner

or later, digital printing systems will be used and, with them, LED curing. IST Metz is one of the providers of such systems. This trend would see a significant boost, according to Michael Wagner, if the manufacturers of printing and LED systems together with the ink industry were to develop an integrated overall system. This could save users from learning the hard way over the next few years.



Source Hoffmann Neopac



Michael Wagner (left), COO and Production Manager
Urs Mauerhofer (right) with Mario Werner from IST Metz
in front of the final curing stage with four UV units.

Traditional company focusing on tubes and metal cans

Hoffmann Neopac AG is a family-run company located in Thun in Switzerland. The company produces high quality metal and plastic packaging on five sites: cans at Hoffmann in Thun and at CMP in Holland, Polyfoil® and plastic tubes at Neopac in Switzerland and Hungary. International pharma, cosmetics and consumer goods manufacturers in the markets of Europe and North America feature among the longstanding customers. The company recently acquired the majority shareholding in 3D Technopack Ltd from Mumbai, India, thereby securing a foothold in the Asian market. With the new production facility in the US, the company employs a workforce of more than 1000 and has capacity for 1.3 billion tubes.