USP: Efficient inline production with strong visual and haptic effects

Effects: Film laminating, hot foil stamping, iriofin® coating, UV gloss coating and matt dispersion coating with haptic effect, rotary debossing, embossing

Suitability: Cosmetics industry | Food industry (outer packagings for closed containers only) | Tobacco industry

Machine requirements: Gallus ICS 670 with 4 gravure printing units and 7 EVA platforms, additionally equipped with 5 flexo modules (3x WB flexo and 2x UV flexo), 1 laminating module, 1 hot foil stamping module and 1 rotary debossing module, inline die-cutting and embossing station, inline waste stripping station, delivery unit

Design requirements: Distinct motif edges that can be brought out in the cold and hot foil finishing, the embossing and the coating effects; greatly differing textures (leather, metal) for high contrasts

Special features: Both design versions are based on the same machine configuration and ink/coating sequence (WB flexo laminating adhesive / silver film / gravure printing, opaque white / gravure printing, green / gravure printing, red / gravure printing, black / UV flexo printing, black / SENOLITH® WB GLOSS COATING with Colorstream® T10-03 Tropical Sunrise / SENOSOFT® WB MATT COATING / hot foil stamping / SENOLITH® UV GLOSS COATING / rotary debossing / die-cutting and embossing) and are produced together inline on a mixed sheet.

Description: This new project of the Value Added Packaging Initiative is intended to show that even folding cartons with a very high degree of finishing can be efficiently produced inline, using a Gallus ICS 670 printing system. When producing these two outer packagings for luxury drinks, use was made of a wide variety of foil and coating effects, pigments and embossings, in order to produce realistic, high-end packagings in a single production cycle. A combination of gravure and flexo printing was used in this context. Although likewise possible, the use of screen-printing components was dispensed with. Instead a newly developed rotary embossing station was used for the first time on this job. The special shape of this packaging was developed by A&R Carton. It is reminiscent of a cut diamond, but also features lateral surfaces with filigree curves, thanks to which the effects used can develop their full impact at the POS, due to their special reflective properties.

Remarks: Attention already has to be paid to numerous parameters at the production planning stage, since this highly complex production process involves different printing processes, substrates and materials. First, a defined scaling factor has to be taken into account during form production (cylinders/flexo plates/die-cutting and embossing tools) in order to cater to the different shrinkage of the board web resulting from the different contact pressures and drying temperatures. Without this, accurate production is impossible. Second, the materials, inks, coatings and foils used have to be coordinated. Optimum results can only be achieved if there is a perfect interplay between material, man and machine. Consequently, it is essential that a project of this kind be clearly discussed with everyone involved, ahead of production. This makes it possible to avoid technical problems in advance and, where appropriate, also to incorporate changes into the design and production planning.

Even though all-over film laminating is used in this printing job, selection of a suitable substrate is still of decisive importance for the quality of the ultimate result. The ALGRO DESIGN coated, bright white woodpulp board from Sappi used in this project, and the Carta Solida coated folding-carton board from MetsäBoard, are also ideally suited to jobs of this kind in terms of their homogeneously coated surface, their problem-free deformability and their great dimensional stability during processing.
Realisation:

In these two printing jobs, the main focus is on the greatest possible contrast of the haptic and optical effects. To this end, a very filigree leather structure is created in Illustrator, for use both as a coating form (UV gloss coating) and as a rotary debossing form. Owing to the fine lines in the gloss coating, this creates a strong optical contrast with the SENOSOFT® WB MATT COATING beneath, which has a very soft-looking surface. Following final debossing of the structure, this gives rise to an effect that not only looks like leather, but also has the corresponding feel.

Next, the metal press studs are likewise created in Illustrator, paying the greatest possible attention to the three-dimensional nature of the embossing form. Only the interplay of silver laminate, printed image and embossing is a successful imitation of metal press studs ultimately achieved. All the lettering, logos and brand names are then prepared for embossing in a similar manner. All green and red areas are printed directly onto the laminate in this context, in order to emphasise the metallic character of the packaging. In contrast, parts of the embossed lettering and the leather are completely underprinted with opaque white.

The completed designs are then rendered as finished screen versions via Esko Visualizer and used for discussion with the customer and the whole production team. The interplay of the individual finishings and the technical specifications can already be visually verified and, if necessary, modified at this point.

Production of the final printing data should then be handled by a repro studio that has sufficient experience with this production system and is also familiar with, and capable of applying, the necessary register and scaling requirements of the production system. This is followed by a final quality control step before the data are forwarded to the individual production partners for preparation of the plates, sleeves and tools.

Finally, appropriate anilox rollers have to be used for production. In this context, the laminating adhesive is applied with 120 l/cm and a 12 cm³/m² anilox roller, UV flexo Black with 440 l/cm and 4.4 cm³/m², Colorstream® T10-03 Tropic Sunrise in the carrier coating with 100 l/cm and 12 cm³/m², SENOSOFT® WB MATT COATING with 80 l/cm and 14 cm³/m² and SENOLITH® UV GLOSS COATING with 120 l/cm and 10 cm³/m².