

TUTORIAL – WATERPROOF BEVERAGE COOLER



USP:

Waterproof beverage cooler with SENOLITH® WB FP PLUS BARRIER COATING 60F 3025, and inline produced matt/gloss effect using SENOLITH® WB FP GLOSS COATING 60F 1000 and the deep matt SENO-SOFT® WB FP MATT COATING 20F 5000.

Machine requirements:

4-color sheet-fed offset press with double coating unit

Project description:



A browser-based, interactive and photorealistic 3D model of the beverage cooler with all coating effects and AR function, to be found via the QR code.



www.weilburger.com/wa/cooler2024.html

In order to demonstrate the possible applications of SENOLITH® WB FP PLUS BARRIER COATING 60F 3025 in the production of water-impermeable folding carton packaging, a beverage cooler project is being realized together with KNAPP Kartonveredelung. The aim is to produce a modern drinks cooler through an intelligent interplay of shape (cutting die), coating (barrier coating) and design (perfecting and reverse printing as well as double coating), which can also withstand long-term filling with ice and ice water and can therefore be used as an elegant promotional and advertising medium for winegrowers, vineyards, brand owners and retailers.

The die-cut shape of the cooler is based on a dodecagon due to the technically inwardly folded flaps and is therefore almost perfectly point-symmetrical. These inwardly folded flaps are necessary for such fiber-based cooling troughs in order to prevent the penetration of moisture via the punched edges, which would not be sealed by the impregnating varnish due to the system, and thus contribute positively to the service life. The graphic design was created based on a kaleidoscope pattern in the Tiffany style in line with this die-cut shape. In order to emphasize the immense marketing advantage of such barrier solutions compared to the PE coatings commonly used up to now, the print is designed as a double sided print. This is not usually possible with PE coatings, as the mostly white PE coating is applied to the substrates before printing. However, with the solution implemented here, which is based on a barrier coating applied to the inside, a reverse print can be applied before the coating is applied, so that not only do the patterns look more attractive, but the insides of the printed products produced in this way can also be used for design and marketing.

Requirements technical design:

As the cutting die is not a real dodecagon, but the shape of a truncated pyramid with a square base, the resulting different angles of the subsequent outer surfaces must be carefully observed when creating the kaleidoscope effect. When designing the inner surfaces, it should also be noted that the flaps of the cooling trough are bent in sideways. In order to reproduce this graphically, clear, mathematically precise planning is also required here, as well as very high register accuracy in perfecting printing. All effect forms must be designed as pure lineart forms without halftones and with clear edges. When designing the spot coating form, which is applied inline to the flat gloss coating using a coating plate, elements that are too filigree should be avoided so that the coating plate can still be produced and does not clog during the printing process.

Requirements graphic design:

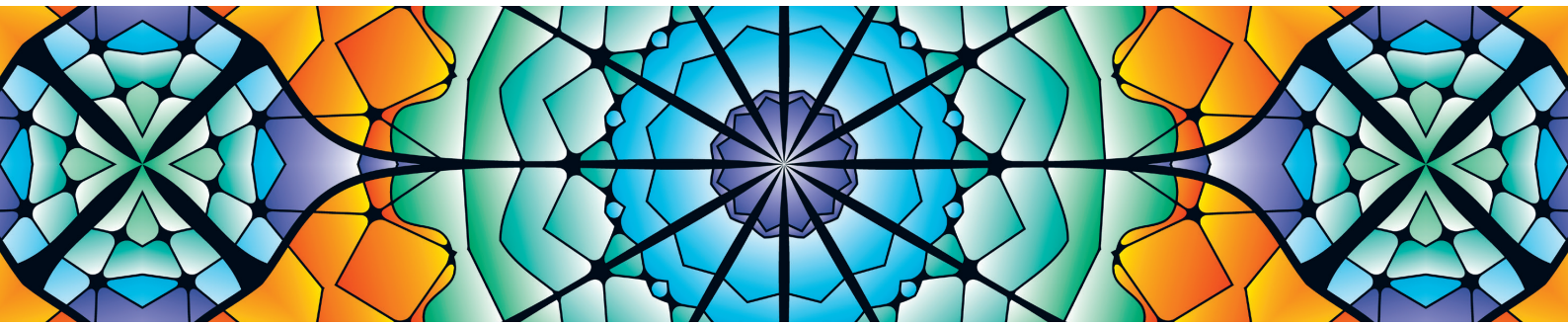
The 4C Euroscale color space is selected for the perfecting print, which can be used to reproduce the Tiffany pattern used inside and outside as well as the corporate design elements and image motifs on the outside. All coating forms are to be designed as pure lineart forms without halftones. Larger black areas are tinted with 60% cyan to increase brilliance. Orange, green, violet and blue tones are mainly used as contrasting colors to the colors of the corporate design for the Tiffany pattern. Technical gradients are mainly used to give the kaleidoscope pattern more visual depth.

Substrate:

New Ensocoat GZ 2SL 500 g/m³ Short Grain

Notes:

As with all major print productions, clear project planning and coordination of all parameters with all companies involved in the production chain is essential. Materials and process steps must be defined and coordinated in advance.


Realization:


The biggest challenge with this print motif is the implementation of the striking kaleidoscope effect. The alignment of the graphic elements must be optimized with absolute precision to the die-line contour and the later erected shape. In particular, the flaps inserted laterally in the erected and assembled state require the utmost attention so that the pattern of the flaps is almost congruent with the pattern of the inner walls at the end and the flaps become almost invisible due to the overflowing graphics. To make this possible, the underlying die-cut contour must first be measured precisely. The angle of the four outer sides in the truncated pyramid is of particular importance here. From then on, this angle forms the basis of the symmetry axes for both the interior and exterior design of the kaleidoscope.

A second striking axis of symmetry is then provided by the central fold of the flaps. As long as these symmetry axes are adhered to, a cross-format kaleidoscope pattern can be created, which then shows the desired results both inside and outside the assembled cooler. The only thing the printer needs to know is that the perfect register must be given the utmost attention, as even the smallest deviations from the overall register will add up and ultimately lead to an unattractive result. The entire Tiffany kaleidoscope effect is then created and designed as a pure vector graphic in Illustrator.

Once the basic structure of the pattern has been created, it is placed over the entire surface by mirroring and rotating it several times around the central point of symmetry. Here too, an exact working method and numerical input of all values is preferable to free transformation in order to achieve a truly precise end result. The image motifs and corporate design elements are also placed on the outside. Symmetry must also be ensured here. Once the printing form has been created, the precision of accuracy should be checked using 3D software on the virtually assembled product.

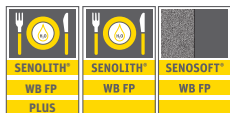
The coating form for the outside of the radiator is then created. For this purpose, stylistically appropriate motifs are designed, transferred as a pattern in Illustrator and then placed in the individual elements so that they are also symmetrical and centered in the kaleidoscope. The minimal positive and negative line widths must be observed for the size of these motifs so that the coating plate can be exposed without any problems. Halftones must be avoided here in order to prevent screening.

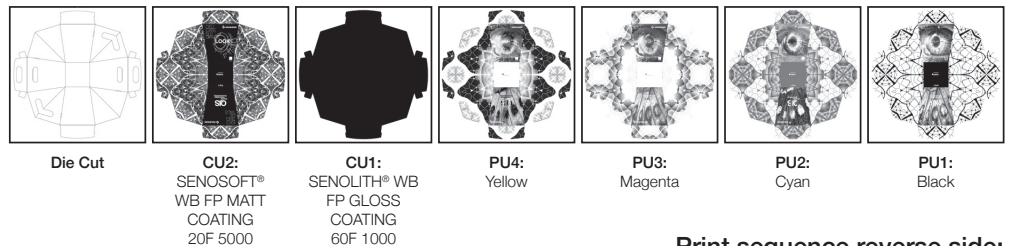
Finally, all data is exported in PDF/X3 format and the open data is compiled for transfer to the printing company. ISO Coated V2 Color Intent is selected as the output profile in consultation with the printer.

Anilox rollers:

SENOLITH® WB FP PLUS BARRIER COATING 60F 3025
 SENOLITH® WB FP GLOSS COATING 60F 1000
 SENOSOFT® WB FP MATT COATING 20F 5000

24 cm³/m², 8 g/m², Haschur
 18 cm³/m², 60 Lines, Hexagonal
 13 cm³/m², 100 Lines, Hexagonal

Products used:

Production partner:

Print sequence front side:

Print sequence reverse side:
