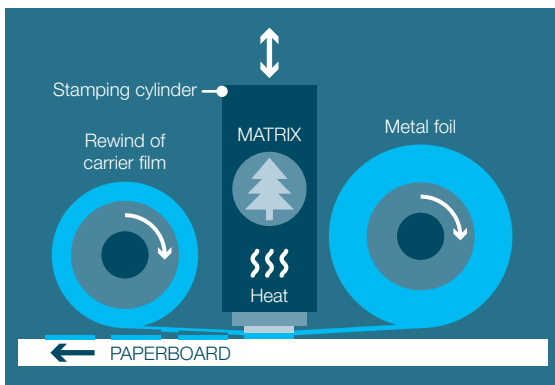


Hot foil stamping in practice

Hot foil stamping is a finishing method used to give texts and patterns an eye-catching appearance. The foil can have a glossy or matt finish with a coloured, metallic or holographic appearance. The size of the area that can be covered varies from very small details, such as letters, to large solid areas.

The hot foil stamping operation

The foil is carried on a heat-resistant film. During the operation the paperboard and the foil are kept parallel. A heated matrix, which is fitted to the stamping plate or cylinder, removes the foil from the carrier and makes it adhere to the paperboard.



Hot foiling operation.

Since the carrier film reacts with the foil due to the pressure and heat of the stamping process, the composition of the paperboard surface is crucial for providing good runnability and satisfactory bonding of the foil. The paperboard surface must be very smooth and free from impurities and spray powder.

Factors essential for good hot foil stamping are:

- foil type
- time of pressure (seconds)
- pressure (bar)
- temperature (°C)



Different film compositions.

Recommendations

For the best visual appearance of the foil, it is important to have a clean and very smooth paperboard surface with a minimum of interfering surface irregularities, since these are strongly accentuated when foiled. The tool's ability to conduct heat and the smoothness of the tool surface are equally important factors. To produce the best gloss during longer runs, the surface of the tool should be polished.

Key paperboard features when performing hot foil stamping are:

- smoothness
- surface appearance and surface finish
- adhesion
- surface strength
- flatness and dimensional stability at the specified moisture content.

Embossing and debossing in practice

Embossing and debossing involve shaping the paperboard into well defined permanent relief patterns. Embossing creates a raised pattern and debossing creates an indented pattern. Both these methods create strikingly impressive design results. They can be applied to cover the entire paperboard surface or used to achieve pronounced relief patterns.

The embossing and debossing operation

Embossing and debossing are done at high pressure to make the relief patterns precise and permanent. The tool consists of a stamp and a make-ready (or counter die) onto which the relief pattern and its mirror image are respectively etched.

A relief pattern can be 0.15 to 2.5 mm high or deep. If the relief has only small differences in levels, the possible machine speed will be higher and stacking the finished sheets will also be easier.



Embossing and debossing may be carried out either "blind" or combined with other techniques.



Embossing/debossing principle.