

FOIL STAMPING

What is foil stamping?

The basic concept behind foil stamping is simple. The process is achieved when a die is mounted on a platform and heated. Foil is then placed between the die and the material to be imprinted. When the die presses against the foil, the heat releases and the coloring layer from the foil roll and binds it to the end product.

Foil Stamping, which is also known as flat stamping, hot stamping, gold stamping, blocking and leafing, does not produce a raised image. But when it's combined with embossing, as discussed on the next page, it is called foil embossing or in the industry, combination work. Foil stamping is the only printing process capable of applying bright, non-tarnishable metallic effects to paper, plastic, paper board and other surfaces.

But foils are not limited to gold and silver, or for that matter, even metallic finishes. In fact, stamping foil is available in a wide range of colors, finishes and effects, from marble, snake skin, imitation leather, pearls, wood-grains, and geometric patterns to holograms, pigments, metallics, and subtle tints, in matte and gloss finishes.

Since ink, paper, die and color selection are all key elements in the success of an embossed or foil stamped product, it's a good idea to get the foil stamping shop involved in the project at the design level. Before beginning any project involving the use of foil stamping and embossing, it is recommended that you discuss your plans and expectations with your supplier. Design considerations and production details on ink and paper selection, dies and artwork preparation can be found on our Technical Information Page.

Embossing creates a raised image. It requires an etched metal (female) die and a matching (male) counter die. De-bossing creates an indented image.

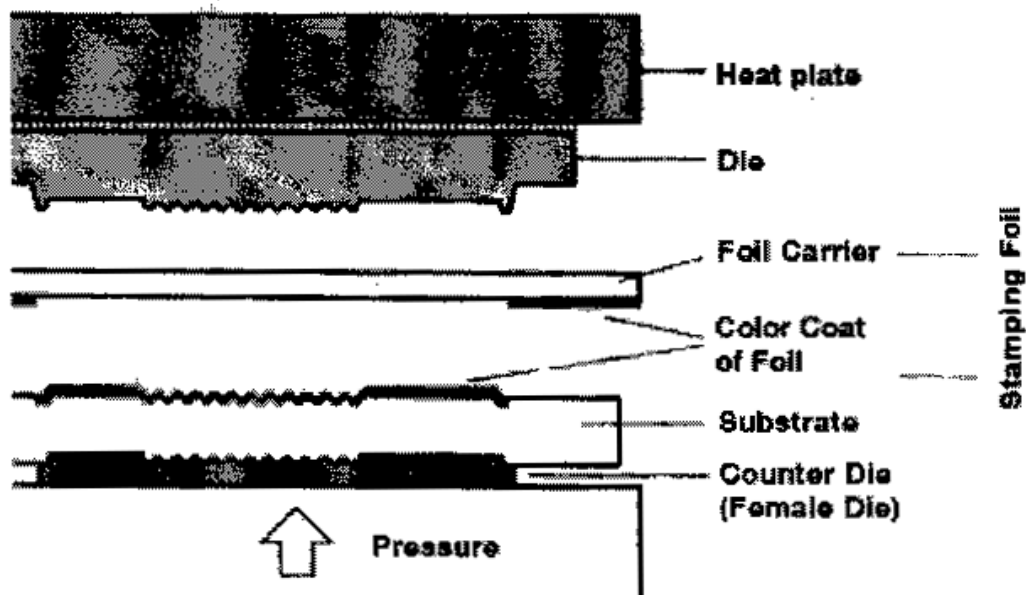
Composition of foil

Most foils for stamping are comprised of five layers:

- A **Polyester Film Carrier** is used to protect the foil layers and to permit rolling.
- The **Release Coat** allows the other layers to release from the film carrier upon application of heat and/or pressure.

- The **Lacquer, or Color coat** carries the color tint in the form of dyes or pigments. Most often this layer is transparent or translucent, which allows the introduction of the metallic layer in the metal foils.
- The **Metal Coat** is generally composed of aluminum to provide the reflective qualities and opacity desired in metallic foils.
- The **Adhesive Coat** serves to bond the foil to the substrate being stamped. The printability characteristics of the foil are primarily determined in this coat by implying more or less adhesive.

Foil Stamping with Structure Design Possibilities for the Graphics Industry



Different foils have different characteristics in terms of durability, scratch resistance, fade resistance, chemical resistance, brightness, opacity, adherence, along with color and surface characteristics. And different foil manufacturers produce a number of foils which can vary widely. Even foils that appear the same can have different characteristics that are not immediately recognizable, as they are intended for different applications. Like any other creative medium, these characteristics, along with the qualities of the selected paper stock, and the depth and complexity of the artwork and dies, are all variables which will influence the viability of your project.

Foil stamping is an incredibly versatile process that allows to explore imaging on any number of surfaces to which conventional printing techniques cannot be applied. Your local foil stamping and embossing vendor has the experience to help you determine the best strategy for your project.

Q&A about Foil Stamping

- What is a “tape inch”? – Tape inch is a section of foil that measures 1” x 200’
- How to determine how much foil I will need to complete a job? – Customer service will be able - to assist you; please have your imprint size and coverage information available.
- How to determine how many tape inches are in any size roll? – You multiply the width in inches by the length in feet and divide by 200.
- How to determine what size roll I will need? – A quarter inch or more above and below the imprint area is recommended.
- What is cold foil stamping? – Cold foil stamping is the process of applying adhesive to a substrate and then applying easy release foils into the adhesive without the use of hot dies or heated rollers.
- What is the difference between hot stamping foils and decals? – Hot stamping foil is a one color application, decals are multicolored. The same presses are used for both, with the decals custom fit with an indexer.
- What type of dies should I use? – A die recommended is made based on your specific substrate, surface texture, number of imprints needed and type of foil required; call customer service for assistance.
- What is the minimum order? – Minimum order quantity depends on the foil. MDF foils are available in single rolls. Metallic and pigment (color) foils must be ordered in a minimum of a 24” x 1000’ master roll that can be custom slit. Available from time to time are over stock rolls at a reduced price. Call customer service for information.

Special Applications

To achieve even greater color and treatment possibilities when foil stamping, there are some special applications you should explore:

Reflective Engraving gives an etched, old fashioned feel to a flat stamp through engraved crosshatched lines that add texture and dimension. This technique also serves to emphasize the spectrum reflections of color inherent in metallic foils.

Foil over foil adds a special color option with an additional pass through the foil process. Since different foils have different opacities and adhesive qualities, it is advised that you consult your foil or embossing supplier.

Stamp and Bump allows for versatility in design and the elimination of multiple embossing dies and passes through the press. This technique usually entails a first pass of flat stamping, and then a second pass of embossing or de-bossing the stamped areas (and/or blind embossing other areas), the utilizing only one embossing die. Perfect for designs with a fine detail, this method also assures clean, finite coverage. Again, it is advised that you consult your foil or embossing supplier.

Embossing

When considering an embossed design with added colored foil, you may want to look into one of the following special effects:

Glazing is a technique which can be used with blind embossed images on textured papers. Increased pressure will create a burnished effect, which is particularly attractive on medium to dark colored stock.

Gloss Emboss is a method of combing a clear foil (similar to varnish) with blind embossing, resulting in a high-gloss embossed image.

Tint Leaf Combination combines the effect of a blind embossing and pastel tinting of the image. The tint leaf is available in a variety of colors.

Textured Emboss leads a tactile quality to embossing or foil stamping. Typical textures are pebble, wood grain, though more are available from your die supplier.

About the Pantone Foil Stamping Color Selector

The Pantone Foil Stamping Color Selector is an effort between the FSEA and Pantone, Inc to identify foil colors in a format that simulates the Pantone Matching System (PMS) for ink colors. A selection of approx 100 colors, including gold, silver, metallized colors and pigmented foils provides a standard through which designers may specify foils for use in their designs. The exciting and creative elements introduced by foil stamping may now be specified with the same confidence as when using other Pantone Color Systems.

The Pantone Foil Stamping Color Selector also provides a standard means of identifying color, which enables foil stampers to better cross-reference between foil manufactures. This is important because of the need to apply specific formulas which may or may not be available from every manufacturer. In this way, the foil stamper is able to cross reference a foil color to various manufactures to find a formulation that is right for the job. Pantone's preeminent position in the graphic arts industry also ensures increased participation in the standardization of foil colors to the Pantone Color System in future products.

