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**The
designer's guide
to foil stamping
& embossing**

The FSEA Welcomes you to the World of Foil Stamping and Embossing

Welcome to an exotic world of color, texture and dimension. If this is your first visit into the realm of foil stamping and embossing techniques, you're about to discover exciting new ways to communicate. To become fluent in this world, learn the language. Along with your local foil stamping suppliers, the Foil Stamping and Embossing Association (FSEA) can help. The FSEA is dedicated to increasing awareness in both those engaged in the industry and those who are in the position to use foil stamping and embossing as a graphic arts process.

Since its inception in 1992, the organization has grown to 300 members who depend on the FSEA for:

- Industry publications, technical literature, an dissemination of industry news, including: membership directories, a glossary of industry terminology, published articles and technical notes, quarterly newsletters, and the only publication specific to the industry, *Inside Finishing* magazine, which premiered in March 1995.
- The first and only awards competition strictly for foil stamping and embossing work, making the process more visible to the design community
- An annual convention to share information, build a successful future for the industry, and recognize outstanding contributions
- Training seminars for foil stampers and embossers, and workshops for graphic designers
- A referral source for foil stampers and embossers across the United States
- Industry standardization of foil colors through a partnership with Pantone

The FSEA is dedicated to the growth of the foil stamping and embossing industries. Today's new foils, dies, presses and techniques allow you to express yourself in ways that were once impossible. As experts in their industry, we urge you to work closely with your local suppliers who can help you explore the world of foil stamping and embossing.

For a list of sources in your area, contact the FSEA using the postcards found in the back of this guide. Once again, welcome to our world. We hope you enjoy exploring!

A Few Words on the Environment

It's important to preface this foil stamping and embossing guidebook by assuring you that both processes are environmentally safe. This is especially true of "blind embossing," where only the paper is used to create the image. Foil stamping poses no harm to the environment either, because it is a totally dry process. There are no solvents, inks or vapors associated with the technique. In fact, foil stamped paper can also be recycled.

To be absolutely sure, two independent studies were conducted to determine the biodegradability and the recyclability of foil stamped paper.

The objective in the first study was to find any differences in the disintegration by biodegradation in landfill disposals from a variety of substrates printed with different foils. After six weeks, little degradation had occurred. But after twelve weeks, there was a significant difference – clearly showing that foil had no visible effect on the rate of biodegradation, and all samples were completely broken down.

The second study was conducted to see whether the presence of foil affected the repulpability of the paper substrate. The results found that the foil and ink present in the samples were successfully removed by the flotation de-inking process with no troublesome tacky particles remaining once the paper was repulped.

So create freely, knowing the embossed and foil stamped designs you produce today may be recycled into other designs tomorrow. That is, if anyone is heartless enough to part with your incredible works of art.

Awaken the Design Animal Inside You

In today's crowded communications environment, the first objective in creating a memorable image – be it for a business, product or service – is to be noticed. It's often a difficult task given the inherent limitations of the print medium. However, for those who possess the knowledge to apply it, there exists a different animal, a breed that stands apart from the ordinary – print finishing techniques that leap off the page with vivid color, texture and dimension: foil stamping, embossing, combination foil stamping/embossing and holography.

Like an exclamation point, foil stamping punctuates an emphatic statement of quality and richness, while embossing communicates a quiet sophistication. And when the two come together, the combination of color and texture can be positively stunning. Holograms, on the other hand, provoke curiosity and attention as they involve the reader in an interactive visual exchange that is not possible with conventional print techniques.

Best of all, many of these rich, elegant effects can be achieved, for the same cost as offset printing, and in many cases, the cost is even less.

It's an investment well justified by greater impact, enhanced perceptions and more favorable marketing responses – as an airline discovered while doing a test for a direct mail campaign promoting one of its programs. The test concluded that an embossed envelope increased the reader response rate by 40 percent, which in turn generated approximately 300 percent revenue compared to the initial investment.

Imagine...if one embossed envelope can evoke that kind of success, think about what you can achieve by applying foil stamping or embossing to letterheads, business cards, brochures, portfolios, packaging and more.

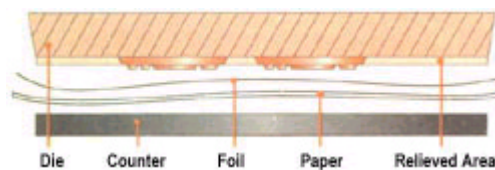
These techniques, coupled with different dies, foil colors, and patterns, including holograms, can create a nearly endless variety of visual effects.

This handbook is designed to be your guide to this exotic world of communications techniques. We invite you to examine and be inspired by just some of the possibilities here. And learn how to create a lasting impression that now only gets results, but sets you a breed apart from all the rest.

Foil Stamping

The basic concept behind *foil stamping* is simple. The process is achieved when a die is mounted on a platen 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 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-tamishable 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.

Composition of Foil

Most foils for stamping are comprised of five layers:

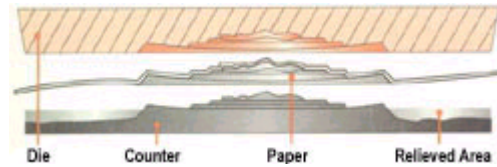
- A **Polyester Film Carrier** is used to protect the foil layers and to permit rolling.
- The **Release Coat** allows the other layers to release from the film carrier upon application of heat and/or pressure.
- The **Lacquer**, or **Color Coat** carries the color tint in the form of dyes or pigments. Most often this layer is transparent or translucent, which allows the introduction of the metallic layer in 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 foils are primarily determined in this coat by employing more or less adhesive.

Different foils have different characteristics in terms of durability, scratch resistance, fade resistance, chemical resistance, brittleness, 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 should be recognized as an opportunity for exploration. Foil 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 you 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.

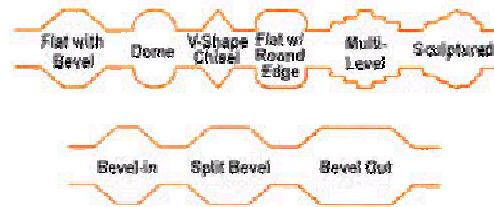
Embossing

Embossing simply means to press paper into relief using heat and force. It requires an etched metal (female) die and a matching (male) counter die. When a paper stock is pressed between the heated die and the counter die, the desired image is pressed into the stock.



Embossing creates a raised image on the paper. When the same process creates an indented image, it is called *debossing*.

You can achieve an elegant embossed effect with only one level of etching that renders a flat image with either a beveled or rounded edge, or a sculpted look with many levels of etching. Obviously the more elaborate the design and etching, the greater the cost of making the die. Below are cross sections of common shapes used in embossing and debossing. These represent only a portion of what can be created by your embossing supplier.



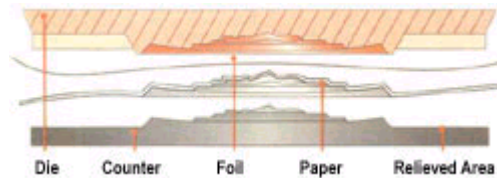
Foil stamping, introduced on the previous page, can be added to the raised surfaces for a dramatic effect. But when the embossing stands on its own merit, it's referred to as *blind embossing*. By itself, it communicated pure sophistication and style.

The most successful embossed materials incorporate a detailed die and a bulky paper stock, in the range of 100# cover, to enhance the depth and intricacy of the final piece.

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.

Combination Work

Combination stamping, or foil embossing unites foil stamping and embossing into one press pass through the use of a combination die, usually a brass-sculptured embossing die with a foil breakage edge to end the image area.



As you might guess, careful consideration must be taken when choosing paper colors, textures, weights and inks for your combination project. Registration is often critical to its success.

The thickness of the stock may limit you to the type of press on which you can run the job. For example, very thin text stocks can cause problems on some large sheet-fed presses.

Your choices of paper stock may also affect the final foil appearance. Papers such as 25% cotton, 100% cotton, vellum, laid stock and other porous papers will dull certain foils. The solution is to communicate to your stamping supplier the stock you've selected so they can order a metallic foil formulated especially for that stock.

Although technology has advanced the process, foil stamping and embossing is still a craft where experience goes a long way toward success. An experienced stamper can guide you through what you can and cannot achieve with foil and embossing, and most will welcome your inquiries as it will make their job easier in production.



Hologram & Patterned Foil

A *hologram* is a unique design element that always attracts attention. A specially prepared foil that creates the illusion of depth on a two-dimensional surface, holograms can be used to create an area of emphasis, dramatize a product, for security, or to add secondary visual rhythms to a logo, border or panel.

Holograms were discovered when Nobel prize winning physicist Dennis Garber found that by splitting a light beam, then using a special arrangement of mirrors around a subject, special optical information about that subject could be stored in a high resolution photographic emulsion. When a light was shown through that emulsion from behind or reflected into it, it created an illusion of three-dimensionality.

In the early 1980's, the technology was developed to enable a holographic image to be transferred to a metallic plate and mass produced onto the mirror-like surface of foil. Now a hologram can be bonded to any material that can withstand the heat and pressure of a stamping press.

Holographic images can be produced in two forms. "Wallpaper" or "random pattern" foils, consisting of a repeating pattern of shapes, logos, etc., advantageous because they require no registration when applied. "Registered holograms," that is, images that must be specifically aligned, must be produced with registration marks in the foil and must be applied on a stamping press with special registration controls.

Today there are four basic types of holographic images available to the graphic designer:

1. **Holographic Patterned Foils** consist of various elements or geometric designs repeated in either a random or structured pattern. As the angle of view changes, individual elements within the pattern produce an illusion of depth, while the shimmering, prismatic effect creates a spectrum of changing colors. Although these foils are not really three-dimensional images, when used properly, they are quite effective. Since no registration control is required, patterned foils share an inherent cost advantage. Any conventional flat artwork, such as a company logo, can serve as the basis for an effective pattern. And with many standard designs available, "stock" or pre-printed patterned foils are the most cost-effective of all the hologram foils.
2. **Three-dimensional Holograms** are created from inanimate objects. Here the three-dimensional illusion is very realistic – the subject appears to rotate in space as the angle of view changes. The spectrum effect is also evident in this kind of application, producing changing color patterns and intensities as the image is tilted on either a vertical or horizontal axis, or as the position of the light source is changed.
3. **Multi Plane Holograms** are produced by layering images in two to four planes to create a three-dimensional scene. The image planes may contain two-dimensional shapes or three-dimensional objects. Using a deeper plane to create a drop shadow for a forward plane or using a flat image drawn in perspective can dramatically heighten the impression of depth even when using two-dimensional planes. Each plane, whether two or three-dimensional, will seem to float at a different level and shift position slightly as the angle of view is changed. Even flat images reflect spectral colors that can range from subtle to bright, and from fairly monochromatic to broad spectrum depending

upon the angle of view and the type and intensity of the light source. A good way to test your design is to create a mock-up using planes of glass or acetate with your layers of images in position on them. Put spacers between the layers to achieve the “look around” effect. As a rule of thumb, a 4” x 4” hologram area would require ½” spacers.

4. **Stereograms** are sophisticated, three-dimensional holograms capturing a sequence of live, moving models. Produced with the aid of a movie camera to record individual “frames” of action, these frames are then transferred to foil, creating an illusion of three-dimensional movement forward and backward as the image is tilted from side to side. As one might expect, stereograms are more time consuming to produce and therefore more expensive than regular three-dimensional holograms.



Special Applications

Foil Stamping

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

Refractive Engraving gives an etched, old-world feel to a flat foil stamp through engraved cross-hatched lines that add texture and dimension. This technique also serves to emphasize the spectral reflections of color inherent in metallic foils.

Foil over Foil adds special color options 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 debossing the stamped areas (and/or blind embossing other areas), utilizing only one embossing die. Perfect for designs with 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 without adding 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 heat and pressure will create a burnished effect, which is particularly attractive on medium to dark colored stock.

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

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

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

Design Considerations

Primary Design Considerations

To assure the success of a project, the first guideline you should consider is communication. By showing your layouts to an experienced stamping supplier early on, you can avoid production pitfalls later. Because foil stamping and embossing use different techniques than conventional methods of fixing an image to a surface, here are some general considerations a designer should observe:

- **Typesetting.** In general, larger text sizes work better than smaller. “Fill In” is a term used to describe bridging between two characters, which affects the legibility of the text and overall appearance. However, copy sizes that are too large present problems on textured stocks, with “air entrapment” that can cause the foil to not adhere to portions of the desired area. Finally, because typefaces generally appear bolder when foiled, don’t track or kern too tightly. It is a good rule of thumb to set type loosely and with more leading than you might ordinarily consider.
- **Solids and Fine Lines.** If you are designing large solid areas of foil as well as fine detail in the same piece, expect to make two passes with the press. For a quality stamp of areas designed with intricate detail, be sure the space between the lines in the design is no less than half the thickness of the stock you are using.
- **Foils and Laser Printers.** Although many foils have a wide temperature range, not all foil can be successfully run through a laser printer. Depending on both the operating temperature of the printer’s fuser roller and the foil’s temperature tolerances, consideration must be given when producing foil stamped materials intended for laser imprinting. As well, use caution if selecting dry, textured, parchment and recycled stocks because the low adherence properties of many of these stocks can cause the foil to release, crack, peel, or dull under the heat extremes of a laser printer. If in doubt, ask your foil stamper for a test sheet for you to run through the printer.
- **Registration.** If the design calls for tight registration of foil to print, foil to foil, or UV coating and varnishes, consult with your stamping supplier for production specifications. Unlike offset printing, foils with tight registration are “kiss fit” or butted to the image(s), so do not use trapping techniques on artwork next to or inclusive of foils. Tight registration may also require additional production charges.
- **Stock and Foil Color.** Because many pigment, pastel tint and pearl foils are translucent, their color can be altered dramatically by the color of the underlying stock.

Design Considerations for Holograms

- The manufacturer's charge for creating a complex holographic image is no more than for a simple one. The primary variable is the finished size of the hologram. Larger holograms require more foil and are therefore more expensive. Stereograms require a photographic film to be shoot, and therefore, are usually the most expensive to create.
- It is important to consider what will be on the reverse side of a hologram, as large areas of image or color will detract from the holographic effect. While text alone will usually not detract, it is best to anticipate what will back up the foil.
- Consider the use of hologram foils to deter counterfeiting of documents and to increase perceived value.
- While two-dimensional and multiple plane holograms usually require only flat artwork, a true three-dimensional hologram requires that a 1:1 scale model of the object be provided or created. Check with a hologram producer or your stamping vendor.
- For best results stamping holographic foils avoid square corners; use rounded corners whenever possible.
- While patterned foils are excellent for both large areas and stand-alone or irregularly-shaped objects, a stand-alone or "outlined" object will generally not provide the desired effect with three-dimensional or multiple plane holograms. Always allow for a background to the image, both for the sake of registration and integrity of the effect. This is often an opportunity for additional levels of "floating objects". Also, if possible, avoid placing hologram within a frame or border, as any slight deviation from register will be readily apparent.

Stock Selection

Your choice of paper may also affect the final foil appearance. Papers such as 25% cotton, 100% cotton, vellum, laid stock and other porous papers will dull certain foils. The solution is to communicate to your stamping supplier the stock you've selected so they can order a metallic foil formulated for that specific stock. Check with your printer to determine the dyne count (surface tension) of a sheet when laminated. The dyne count should be higher than 40 for the sheet to be foil stamped.

- **Recycled Stock.** As the use of recycled stocks has become quite common, there are some considerations worthy of mention. Due to high compression levels of recycled fiber, stamping large solid areas requires significantly more tonnage, or pressure, applied by the stamping press compared to virgin fiber stock. Because of this fact, often a foil will not appear as mirror-like, and fine lettering or detail presents a greater challenge because of compression inconsistencies. In addition, because of the abrasive, fibrous nature of these stocks, die life is shortened often resulting in loss of detail or additional cost.
- **Dark Colored Stock.** As opacity levels vary with different foil pigments, resulting colors and contrast may not be acceptable when applied to dark stocks. This is not only true of translucent pastel and light foils, but with high gloss pigments as well. Check with your stamping supplier to achieve best results.
- **Suitability of Stock.** The chart below provides a general guideline of suitability for foil stamping, embossing, and use of holographic foils.

Selecting A Foil Stamping/Embossing Supplier

Like any other vendor, selecting a qualified stamper is essential to successful culmination of the project. To choose the most qualified company, keep these tips in mind:

- Meet with your stamper at the beginning of the design project, and provide the stamper as much information about the project as possible.
- Examine samples of the stampers/ previously produced work to assure that the stamper commands sufficient expertise for stamping at the same level of intricacy and difficulty called for in your piece.
- Encourage communication between the stamper and the printer. Often, the stamper will be able to recommend a printing company that is familiar with producing printed and stamped work. Most often it's best to select the stamper before the printer.
- Work with a foil stamper who will obtain samples rolls of foil and sample stock for the project you have in mind. Use these to test your dies before the print run.

Production Techniques

Foil Stamping on Difficult Surfaces

Some surfaces do not accept foil well, if at all. Inks and varnishes that contain high percentages of wax, teflon or silicon will prove resistant to the foil's adhesive. Additionally, stamping over UV or catalytic coatings, lacquers and certain film laminations can be difficult as well. When these applications are required, consult with your stamping supplier. Often it is better to apply the foil first, then the coating or lamination. If possible, supply the stamper with a sample sheet or specify the name and weight of the stock you'll be using to be assured that the proper foil is ordered.

Your best choices for foil stamping are smooth, coated stocks. If you're looking for optimum quality, use cast coated paper for your stamping project. The results will be very satisfying. The sheet will reflect light like a mirror and your foil will have a beautiful brilliance.

Foil Over Ink

It's also important to note that wax-free inks are necessary if you are foil stamping over a printed surface. High levels of wax in conventional inks will melt from the heat of the die. Rubber-based inks can also make your sheet practically impossible to stamp. If foils are to be stamped over ink, be sure to alert your printer so the proper inks are used. In fact, because of the requirements for this type of work, or work that butts or registers foil to printed areas, it is usually best to establish communication between the printer and stamper at the design phase.

Ink Over Foil

If you wish to overprint the foil with ink, there are special foil formulations for this application as well.

Foil stamping is truly a value-added process. The cost of adding a color with foil is, in many cases, less expensive than adding an additional color of ink. If your design is properly structured, you can stamp multiple colors of foil in a single pass, for great cost effectiveness. More importantly, the perceived image is greatly enhanced beyond normal expectations of inks – even metallic inks can't equal the richness and saturation of color found in foils.

Preparing Artwork

Production for Embossing and Foil Stamping

When preparing designs that are to be embossed to a single level, make a sharp photostat or a black-and-white keyline with a tissue overlay and instructions for the die maker. Whenever possible, rules should be 2 pt. or more in thickness, as smaller rules are more difficult to emboss cleanly because of the inherent bevel. For best results when foil stamping, use line art and avoid type smaller than 8 pt. copy with tight, intricate detail may plug.

The artwork should indicate whether a bevel or round edge is desired and the type of stock that is to be embossed. Cover stocks generally yield excellent results, although embossing is certainly suited to thinner stock, such as letterhead stock. It's important to remember that foil and embossing should be kept away from folds.

A rule of thumb for preparation of artwork for embossing is to make the original slightly larger and heavier than if it were going to be lithographed to accommodate the bevel. Also for greater depth, more letter space (kerning) should be considered in the artwork – again, because space is consumed by the bevel. You should not use extremely small art, although art with fine detail can be produced with good results by working closely with your stamping supplier or die maker.

Artwork for multilevel (combo) dies should also be a sharp black-and-white photostat or keyline with a tissue overlay. For a complex multilevel job, color code the various levels with felt tip pens.

Following this section is a depth and bevel chart with a series of engraver's symbols you may use to mark up the overlay that will indicate to the die maker the desired effect.

The chart includes rounded and beveled edges. A beveled edge on a die normally hand-tooled brass with the edge of the image in a precise bevel, usually between 30 to 50 degrees. If there is a need for a broader bevel, one can be specified up to 80 degrees. This is largely dependent on the stock.

Production for Holograms

For a standard **Holographic Pattern Foil**, select an available holographic foil and provide your foil stamper with line art from which to produce a flat or sculptured stamping die. Chances are excellent that you will find a foil pattern that will enhance your image. Your foil stamper should have several styles in stock and should have access to many more on a few days notice. For a custom pattern, such as a repeating logo, supply the foil stamper with line art of the single element, or a section of the pattern keylined in the desired size.

For the **Three-Dimensional Image**, you must provide the foil manufacturer with an actual item, which will be recorded using advanced laser technology and special optics. The item must be furnished in a 1:1 ratio with the finished hologram. As you might expect, this process is more time consuming and expensive than using a pre-printed holographic foil.

But for that “just right” special effect, the results may well justify the cost. If your plans call for **Stereograms**, the first step is to consult your foil stamper about your particular concept.

Multiple-Plane Holograms require line art for all two-dimensional planes and an actual same size original from which to create a three-dimensional plane. It is also possible to create a layered hologram from a slide of a finished rendering. However, this technique requires interpretation, so it’s always best to consult with the foil stamper about your particular design.

- A hologram should not require tight registration between layers within the hologram. Tolerances less than 1/32” are not practical. Holographic foil is adhered to your finished piece the same as any other hot foil stamping foil, and is also subject to the same registration tolerances.
- Foil Holograms should only be hot stamped onto smooth paper. Because the foil will conform to the surface of the paper, a textured stock will distort and usually destroy the effect of the hologram.
- Lead times vary from two to three weeks for using a flat die to stamp preprinting holographic foil, to eight or nine weeks (or more) to create an original three-dimensional hologram. Check with your foil stamper.

Ordering Dies

Dies are the critical tool for achieving the desired results. There are a number of die materials available, including magnesium, copper and brass. The decision to use one over the other is determined by the complexity of the design, the length of the run and the desired longevity of the die.

Magnesium Dies are economical and good for short runs: 1,000 to 5,000 impressions on good smooth stock. For embossing, there will be a slight round appearance. Bevels on copper or magnesium cannot be controlled as well as when using a die made from brass.

Copper Dies provide reasonably good quality for 50,000 to 100,000 impressions. They are recommended over magnesium dies especially for designs with fine lines or detail. Copper is also good for embossing with a shallow, somewhat rounded appearance.

Brass Dies provide the optimum in quality, versatility and endurance. Although they are the most expensive dies, they are capable of running over one million impressions. Brass dies provide sharp, clean bevels, and since they are hand etched, sculpturing is possible and a number of different edges are available. (Sculptured dies have smooth transition between various depths, while multi-level dies have any number of distinct levels separated by bevels).

Unlike printing, proofing the die is usually very easy. Once the die has been created, ask your stamping supplier to obtain a small sample roll of the foil you intend to use, and use it to make a proof with a sample sheet of your intended paper stock. In this way, you can see the results and anticipate problems before the actual run. It's also important to allow enough time in your schedule to accommodate proofing.

Also, before the die is produced, it's a good idea to look into who retains the property rights to the die. Like some freelance artwork, sometimes the rights to the die itself remain with the stamping company. Most often, the finished die is your property once produced – although most foil stamping suppliers will keep your dies on file. This assures that the die does not become lost or damaged in storage.

Pantone Foil Stamping Color Selector

The Pantone Foil Stamping Color Selector is a culmination of 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 approximately 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 design 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 manufacturers. This is important because of the need to apply specific formulations to a given project, formulations 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 manufacturers to find the 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. The Pantone Foil Stamping Color Selector, which has been reproduced here, is available from Pantone, Inc. through outlets that sell Pantone Matching System products.

Glossary

Artwork, Camera-ready

Final drawings or stats in high-contrast black-and-white, used to reproduce the image with all blemishes and imperfections removed.

Beveled Edge

The edge of an embossed or debossed area made to a specific angle to the paper plane. These beveled edges range from 30 to 80 degrees from the paper and image planes.

Blind Emboss/Deboss

Raising or lowering the image without color or foil. Reshaping the paper fiber produces the image.

Border

Opposite of panel. Referred to as a line to be printed, stamped, embossed or debossed. It is open inside its perimeter, rather than solid.

Chiseled

A shape put into embossed or debossed images resembling a V-shape.

Color Register

Having design elements fit each other through various press operations, such as printing, embossing, foil stamping, folding or die cutting.

Countercast Epoxy Glass Board

Extremely hard product specifically designed for crisp, clean stamping application and for long running jobs.

Countercast Phenolic Board

A very hard make-ready board mounted on the platen press for extra sharp detail when flat stamping.

Countercast Polyurethane Sheet

Used as flat stamping counter for large coverage applications. An excellent make-ready board for holograms.

Deboss

Lowering the image below the paper level.

Die, Combination

A female die used to emboss and hot stamp simultaneously. It has a cutting rule to aid in a clean cut of the foil around the image area.

Die, Counter

A male counterpart molded from the original female dies used to press the paper into the die to emboss or deboss. It is usually made of epoxy, fiberglass or other resins (precast counter).

Die Cutting

Piercing the paper or other substrate with a knife-edge steel blade. These can be straight single cuts, slots for the insertion of other items, or holes cut to any shape or size.

Die, Duplicate

In embossing dies, molded duplicates made from the original die. These can be made of various materials but are usually bakelite or metal compositions. Used to cut costs when making multiple dies.

Die, Embossing

The female die hand-sculptured, machine-tooled or photo-etched. Used to emboss or reshape the paper under heat and pressure.

Die, Foil-Embossing

Same as combination die.

Die-Making

The process of carving, machining or hand finishing images, or shapes into a metal die. These dies are three-dimensionally tooled as opposed to an engraving. The embossing dies are female (recessed) and are used as mold for reshaping paper or other substrate.

Die, Stamping

A photo-etched or machined die used to flat stamp foil to paper or other substrate.

Die, Steel Rule

A cutting die used on letterpresses to pierce or cut out paper. Made type high (.918") with 1/32" thick steel blades, or rules, cut and bent to specific patterns and mounted in a wooden base. The steel blades have knife-like cutting edges.

Doomed

A shape put into embossed or debossed images resembling a semi-circle or half-moon.

Emboss

Raising the image above the paper level.

Engrave

To mark, print or incise letters or designs onto a surface, usually paper, with a photo-etched and hand-finished die. The die, or engraving, is usually metal, although it can be stone, wood or other materials. Engravings are one level and shallow to carry ink in the recessed areas of the die before transferring the ink to the paper.

Foil

General term for hot stamping material, consisting of a film carrier (usually polyester) coated with a release agent, a color (lacquer) coat or metallized aluminum, and an adhesive coat, in that order.

Foil Embossing

Raising the image and applying foil at the same time with one press run, as with a combination foil embossing die.

Foils, Dusted

Foils utilizing a bronze powder on the carrier. Easily applied, but easily rubbed off without an over-coating. Limited colors available.

Foils, Flat Pigment

Opaque foils of intense color, resembling flat paint.

Foils, Gloss

Transparent foils glossy in appearance.

Foils, Gloss Pigments

Opaque foils of intense color, resembling glossy enamel paint.

Foils, Holographic

Foil which has holographic images embossed into it, allowing the viewer to view the stamped holographic image in three-dimensional without special glasses.

Foils, Metallic

Metallized aluminum foils available in many colors, either shiny (mirror) or satin in their finish. The most widely used foils are gold and silver.

Foils, Patterned

Foils manufactured with specific patterns rather than one color. These range from wood grains, marble, or multi-colors to the new three-dimensional holographic patterns or images. A wide variety of designs are available.

Foils, Pearlescent

Similar to gloss foils, having translucent pearl color. Choice of colors limited.

Foils, Tint or Pastel

Flat or dull translucent stamping foil. Can be applied in varying degrees of color density by changing the press temperature when stamping. Choice of colors available is limited. Can be used with embossing.

Glazing

Smoothing a textured stock with controlled heat and pressure to give a shiny effect.

Gripper Edge

The edge of the sheet to be embossed or stamped which is pushed or pulled against a predetermined stop on the press. For registering purposes, the same designated edge is used during all press applications on the sheet.

Hologram

A three-dimensional picture that is made on a photo-sensitive glass plate using a laser as the light source. From this plate a shim is made and the image is stamped into a metallic foil.

Hot Stamping

Applying foil with the use of heat, pressure, and dwell to various substrates, such as paper, plastic, wood and leather.

Image Area

Any element of design to be printed, stamped or embossed.

Light or Color Fastness

The ability of foil products to resist fading when exposed to light.

Multi-Level

Raising and/or lowering an image two or more levels. Example: A company name raised as a second level or higher level on a panel than the first level.

Non-Image Area

Background area, as opposed to image area. The carrier, paper or substrate on which the image is printed or stamped.

Paper, Uncoated

Paper which is better for embossing because its softer finish has less tendency to wrinkle or crack. Foils will appear less glossy on these stocks. Uncoated, textured sheets may sometimes be very difficult to smooth out when foil stamped.

Paper Level

Reference point for all embossing and debossing.

Photo-Mechanical

Sometimes referred to as chemical milling. Image is exposed with a light-sensitive emulsion on film positive or negative, then acid-etched to a specific depth and angle. Depending upon the die function, the image is etched into an embossing die and the non-image area is etched away on a stamping die.

Plasticizer Migration

When foil is stamped on PVC or other plastic products, the plasticizer migrates from the foil area to the surface of the plastic piece. The result is the metallic foil will fade.

Press Proof

A short press run for approval by the client prior to the actual production run. It uses the specified paper, inks, dies, etc. for the press operator to "run to" or match in the actual run.

Pressure-Sensitive Vinyl

For use in the pour-counter combo stamp process. The excess plastic is peeled away with the vinyl.

Reverses

Openings in the image where the background or paper show through the printed or foiled areas. Can be either type or design elements.

Scorching/Heat Tint

Changing the paper color in the embossed or debossed area by using excessive heat, which creates a two-toned effect, with the image being the darker tone.

Scoring

Sharply creasing a material to facilitate folding. It should be made the same direction as the grain of the paper when ease of folding is of prime concern. For greater strength, a score can be made perpendicular to the paper grain.

Sculpted Embossing

Raising and/or lowering an image with sculptural realism with any of a variety of shapes, angles, and edges, as opposed to flat levels. Examples: A sculpted image of a person's face, a bird's feathers, or the muscle of an athlete.

Single Level

Raising or lowering an image one flat level from paper level.

Step and Repeat

Same image precisely repeated one or more times horizontally and/or vertically to predetermined distance. These distances from one image to another are referred to as "centers" when measured from a point on one image to the same point on an adjacent image.