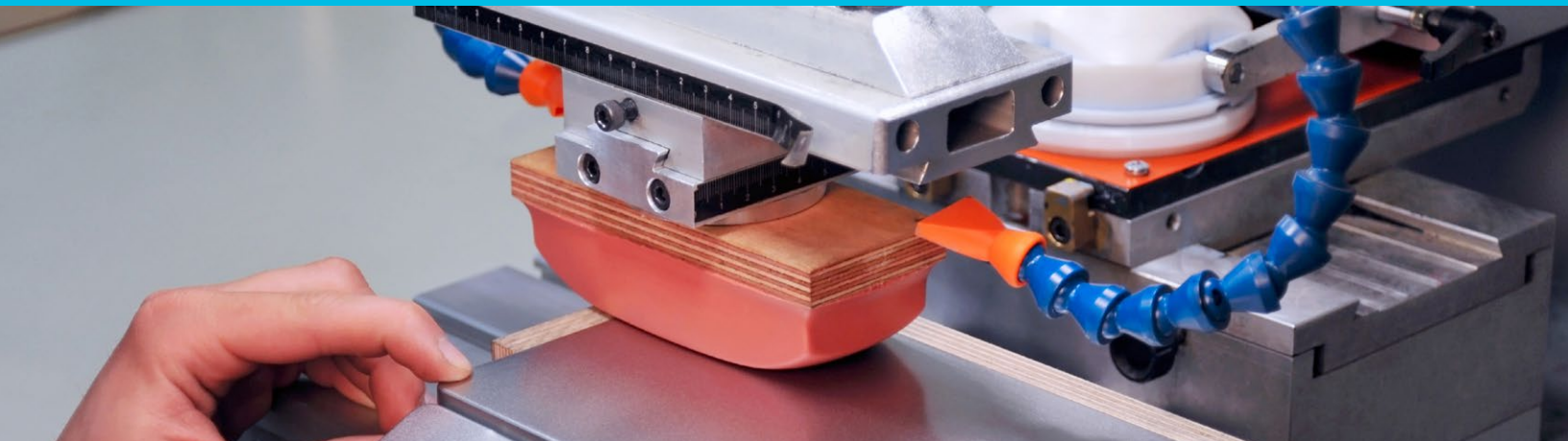




whitepapers
by Beacon®

Imprint Methods

PAD PRINTING



There are many imprint methods available in the promotional products industry today. Some imprinting methods have been around a long time, such as hot stamping, and others are cutting edge, such as dye sublimation and digital direct to product printing. All imprinting methods have their own strengths and weaknesses. In this White Paper, you will see some of the most common imprinting methods, how the processes work and some of the strengths of each imprinting method.

What is pad printing?

Answer: Art is sent electronically to a laser engraving machine. The art is laser engraved onto a cliché to create a stencil. The cliché material is polymer coated steel. The image is transferred via a silicone pad from the cliché to the substrate.

What are the advantages of pad printing?

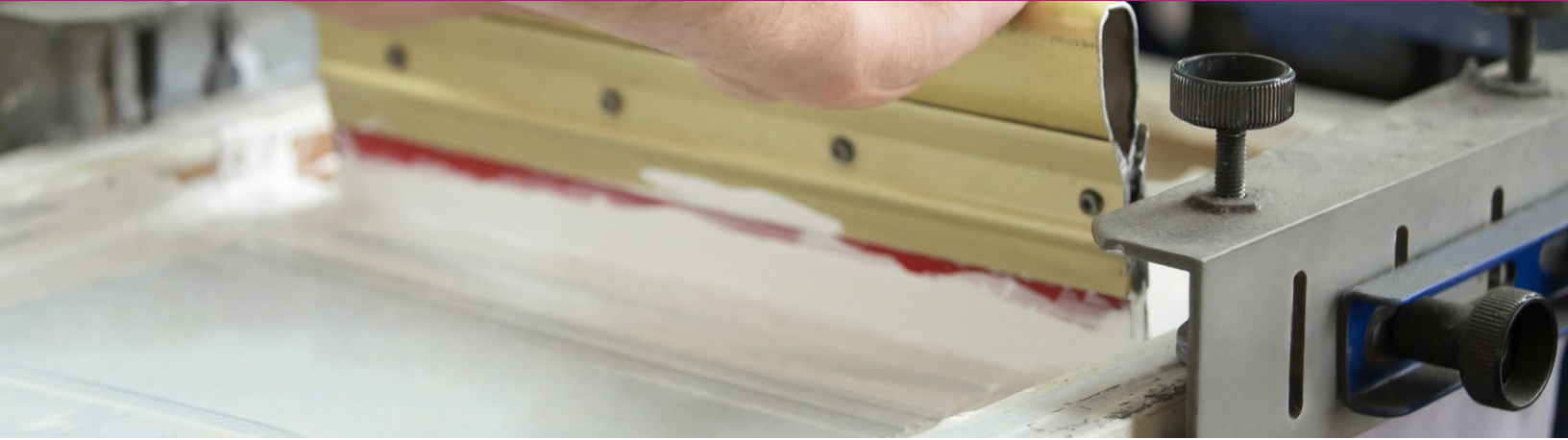
Answer: It allows you to imprint on irregular surfaces that are concave or convex. The image does not have “saw tooth” marks from the screen, which is a characteristic of silk screening. It is ideal for printing very small images with a high level of detail.

What are the disadvantages of pad printing?

Answer: An image will distort, the larger it gets. The ink colors are not opaque on large solid imprints.



SCREEN PRINTING



What is a screen?

Answer: Screens are used in silkscreen printing and are 100% polyester and come in a variety of mesh sizes. Mesh size is determined by the size in the holes between the threads. The lower the mesh count, the bigger the hole and the more ink that passes through the screen. The mesh screen is selected based on the detail of the artwork. Artwork is output as film. The film is applied to a screen that has been coated with a thin layer of photosensitive emulsion. Then it is exposed to a controlled light source. The exposed screen is washed using tap water. The ad image washes away from the screen creating a stencil for printing.

What is silk screen printing?

Answer: Ink is poured onto the screen. A squeegee passes over the ink covered imaged forcing ink through the stencil and on to the product.

Are there different kinds of inks used in silk screen printing?

Answer: UV or Ultraviolet ink is light sensitive. It is applied with a very thin application of ink and dried by a light source. When it dries, it is very hard and usually has a glossy finish. This type of ink does not work well on flexible surfaces. The ink is very runny and a 280 mesh or higher must be used. This method is more environmentally friendly.

Conventional inks in the second kind of silk screening ink. There is a wider range of color choices with conventional inks, depending on the substrate. It is solvent based and requires a heat source to dry the solvents out of the ink. The inks are usually more opaque and they generally “bite” or etch the surface of the substrate.



OFFSET PRINTING & HOT STAMPING



What is offset printing?

Answer: This process is used on calendars. This is the process of transferring ink to a plate and then to paper. It produces the highest quality image because of better print control and higher resolution versus other imprint methods. It also allows for resolution in producing halftone images. Art is etched onto a plate, then the ink sticks to the plate and the ink from the plate transfers to the paper.

Are there different kinds of inks used in offset printing?

Answer: UV ink is used to print our appointment calendars. The UV ink dries immediately and calendars can be packed and shipped right off the press.



What is hot stamping or foil stamping?

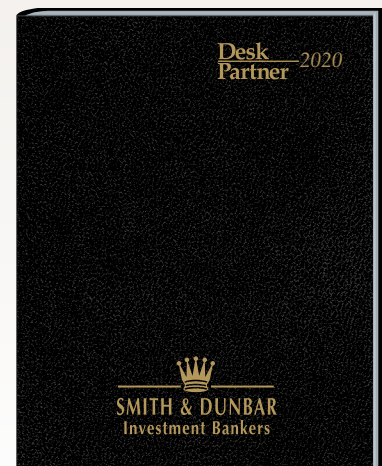
Answer: This is the process of transferring a raised image from a plate to a substrate using foil, heat, dwell time and pressure. This process is used only on Ready Reference planners and the mini stick calendars.

What are the advantages to hot stamping?

Answer: It is great for creating images with a true metallic finish. The image is fused with heat and foil onto the product and are extremely durable.

What are the disadvantages to hot stamping?

Answer: The foil color choices are limited because the foil is so expensive. Products with this imprint method are usually more expensive and require longer lead times due to needing a magnesium plate before printing. The magnesium plate comes from an outside vendor.



INKJET PRINTING & DEBOSSING



What is inkjet printing?

Answer: This process is used on badges and hard goods. In this process the ink is “sprayed” directly onto the substrate using inkjet heads.

What are the advantages to inkjet printing?

Answer: It allows for four color process images. It uses UV inks so the imprint is dry immediately. A white backdrop can be applied before printing colors – allowing colors to stay true. Images can be created with extremely fine detail. The press set up is quick and this process is more environmentally friendly because there is no scrap ink, film, plates or foils. The imprint size is only limited to the size of the product and printer surface area.



What are the disadvantages to inkjet printing?

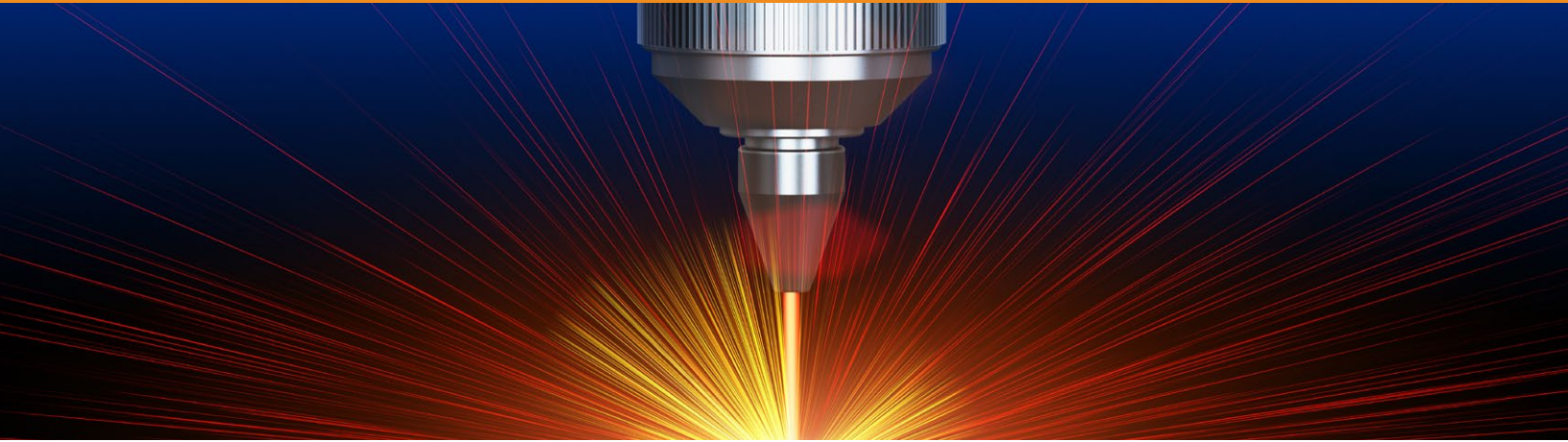
Answer: It prints in four color process, so no true PMS matches are available. You can get close, but not exact. One color ads have somewhat slower production time, but it is faster on multi-color ads.

What is debossing?

Answer: This process is used on the Canyon Leather products. This process is similar to hot stamping because a magnesium die is used to “depress” an image into the substrate, versus printing it on the surface. No foil is used in debossing. Products with this imprint method are usually more expensive and require longer lead times due to needing the magnesium die before printing. The magnesium die comes from an outside vendor.



LASER ENGRAVING & DOMING



What is laser engraving on metal products?

Answer: This process takes the artwork directly to the product. No plate/screen/intermediary process is required to output the image. Extra processing is required in the art department to make the artwork usable for engraving. The imprint color will be whatever the base metal color is under the top layer of the product.

What are the advantages of laser engraving?

Answer: Images are extremely crisp and consistent down to very small sizes. Because there are no intermediary processes (screen or plate making) engraved items can be manufactured very fast for quick turn orders. It also allows for personalization.

What is the disadvantage of laser engraving?

Answer: No color options on imprints.



What is a domed decal?

Answer: It is a full color decal with an expoy dome over the full color imprint. The doming is UV resistant and will not yellow in the sun.

What are the disadvantages of a domed decal?

Answer: 24 hour rush is not available. PMS matches are not possible. You can get a close match but not exact.



DYE SUBLIMATION, HEAT TRANSFER & PERMA PRESS



What is dye sublimation?

Answer: This process is used on table covers, socks and badges. An image is created and output in 4 color process to a special transfer paper. The transfer paper with the artwork fuses to the substrate using heat. This process requires an output of artwork for each item being imprinted. Dye sublimation is the process where inkjet inks are fused into 100% polyester material with heat. The inks are heated, turned into a gas and then they replace the gases in the polyester material. The image is fused into the polyester material making the image extremely durable.

What are the advantages of dye sublimating printing?

Answer: Vibrant colors and high levels of detail can be achieved in dye sublimation printing. Faster turnaround time because all four colors are printed at one time. Dye sublimated products are extremely durable and the colors fade resistant. The image size is limited only to the size of the output device.

What are the disadvantages of dye sublimation printing?

Answer: PMS matches are not possible. You can get close, but not exact. The artwork process is very labor intensive and the inkjet inks are currently very expensive.

What is the difference between dye sublimation and heat transfer or perma press?

Answer: Dye sublimation is a chemical reaction with the image fused into the product. A heat transfer or perma press image sits on top of the substrate.

What is heat transfer?

Answer: This is used on fabric items only. This process is very similar to dye sublimation – an image is created and output in 4 color process to a special transfer paper. The transfer paper with the artwork is fused to the substrate using heat. This process requires an output of artwork for each item being imprinted. The image size is limited by the size of the printer's device. This process is generally slow and labor intensive. (If you have ever ironed on a decal to a t-shirt – you understand heat transfer!)

What is perma press?

Answer: This is used on totes only. This process is similar to heat transfer - an image is created and output in 4 color process to a special transfer paper. The transfer paper with the artwork is fused to the tote using heat. The process requires an output of artwork for each item being imprinted. The image size is limited by the size of the printers device. This process is generally slower and labor intensive and requires a minimum of 250 pieces and is not available on black laminated totes.

What is the difference between heat transfer and perma press?

Answer: A full background is not required on perma press like a heat transfer item. Each piece of the art can be a single piece.



Heat Transfer



Perma Press