TECHNICAL TIP

USE AND APPLICATION OF BARRIER FILM

Two-way window graphics are an easy and common mode of advertising your message so that it is viewable on both sides of a window. You can have different messages on each side to address specific audiences. One of the common methods for producing two-way graphics is printing the reverse image on a clear pressure sensitive film then laminating a barrier film and printing the face graphics on the barrier film. Common printing methods such as screen, offset, flexographic, and digital (UV Curable) can be used to produce a two-way graphic. Be sure your clear media and barrier film are compatible with your print process before production.

REVERSE IMAGE PRINTING

The reverse image must be printed on a pressure sensitive clear film such as polyester (PET), vinyl (PVC) or even polypropylene. The mode of exposure can be a factor in determining which film to use. Polyester is preferred for permanent exterior applications. Vinyl can be used for shorter term exterior and interior applications, while polypropylene is recommended for short term interior applications. The choice of adhesive can vary depending on the expected life of the graphic; permanent adhesive for up to 2 year's duration to removable adhesive for short term (6 months or less) applications. You must know your application before choosing your print media and barrier film.

USES OF BARRIER FILMS

Barrier films are used as a background for each sides graphic and to prevent see through of the graphic from one side to the other (light barrier). Barrier films have white on both sides that offer a uniform background color no matter your print method and is ideal for four color printing. In addition, barrier films have a layer of aluminum between the white to offer opacity and prevent see through of the graphics. General Formulations produces two grades of barrier film. WS2W-STC-OL uses a metalized white polyester film and a white pressure sensitive adhesive. The polyester film provides excellent exterior durability for graphics that have exterior application for up to 2 years. Most common screen, UV curable offset, UV curable flexographic and digital inks, (UV Curable), can be used with this barrier film. GF's other barrier film is based on white polypropylene (PPS2W-STC-OL) and is recommended for short term interior applications. The same inks (as mentioned above) can be used on PPS2W-STC-OL.

APPLICATION OF BARRIER FILMS

The advantage of producing two-way graphics with barrier film is the ease of use. A cold roll laminator is all that is required to laminate the barrier film to the reverse printed graphics. Usually room temperature lamination is sufficient. However, if ambient temperature is less than 70º F, or the reverse side graphics are extremely dark (or have large ink dots), a slight amount of heat will help the barrier films' adhesive wet out. Do not exceed 100º F, especially when using PPS2W-STC-OL barrier film. Excessive temperature can cause the polypropylene to shrink and induce sheet up curl. In addition, we advise running the laminating process at the minimum barrier film unwind tension needed to keep the lamination smooth at the nip (Excessive tension will induce sheet curl). Nip roll pressure is the other variable in the laminating process that can stretch barrier films. Use the minimum pressure required to give a smooth wrinkle free lamination. Once the barrier film is laminated to the reverse side of the graphic; the final step is to print the opposite side graphics on the barrier film. After die cutting, the two-way graphic is complete and ready for installation.

STATIC CLING BASED TWO-WAY GRAPHICS

While using a clear pressure sensitive film for the reverse side graphic is the most common process for producing two-way graphics, occasionally clear static cling vinyl is used as the reverse side media. When a project requires a clear static cling/barrier film laminated two-way graphic we recommend the following points be reviewed:

A decal using a lamination of a barrier film to static cling vinyl is highly susceptible to inter film delaminating (channeling) as a function of the inherent stretch of the static cling vinyl in relation to the liner. When a highly plasticized film such as static cling is laminated to a liner, there is ***always*** residual machine direction stretching of the static cling film. If static cling shrinkage is excessive when laminated to barrier film the problems will be apparent immediately after barrier film lamination or when the liner is removed from the static cling. Check the first pieces after barrier film lamination for lay flat, both with and without liner.

There are a number of potential problems that may develop:

1) The decal may exhibit cross directional channels off the liner.

2) The barrier film may channel in relation to the static cling.

3) Depending on the weakest bond, the decal may curl to the static cling

4) Type of ink, and the amount of ink coverage may affect the bond of the barrier film.

Careful layout of the finished graphic may help minimize these problems with clear static cling/ barrier film laminates. If the longest dimension of the finished graphic is perpendicular to the machine direction of the static cling, that will minimize the inherent static cling shrink effect on the lamination. In all cases, we recommend that each job be tested prior to production. Because of the variables involved, what may work on one application may not work on another application.

Overall barrier films provide an easy and simple option to produce two-way window graphics. General Formulations produces a variety of reverse print media needed to meet any application requirement. The correct barrier film can maximize your project from an application and economic perspective. To help select the correct products for your two-way graphic project contact your General Formulations customer service representative at 800 253-3364.