PERFORATED VINYL

A Story Full of Holes

Applications for perforated window film and perforated banner material.

By Dave King

David King is "Commander of Results" at MarketKing, a team of professionals specializing in the creation of aggressive marketing and education programs (www. the marketking. com). He has been in the digital printing industry since 1983 and has worked with a number of major manufacturers to help develop new and better technologies. In addition to writing for Digital Graphics magazine, Dave often presents seminars at The Sign Business & Digital Graphics Shows. He has also produced Inkjet Printing, Laminating and Mounting, an educational video for the Video Classroom series.

When reviewing the various types of perforated vinyl manufactured today, it's hard not to notice that it is a *very long* list of products. The reason for perforating vinyl is to provide one-way vision to surfaces. From outside, the viewer sees a graphic; from inside, the viewer has an unobstructed view. However, perforated vinyl material is also available for safely hanging large banners.

WINDOW PERF

Most people know perforated window film by the term *window perf*. One-way vision film is a hot market that grows every year. Window perf is manufactured by a number of companies in different degrees of density. The first and most popular is 50/50 perf, where 50 percent of the material is perforations and 50 percent is printable surface.

Applications like vehicle wraps, where a window perf panel sits next to a solid film panel, have a tendency for colors to appear different between the two panels. This is because the window perf has 50 percent less ink on it, and the darkness of the vehicle glass affects the appearance of the image. Some printers try to fix this by adding more ink to the profile for window film, but this doesn't really fix the problem. I don't think the problem can be fixed.

However, films are now available that offer a higher percentage of vinyl and smaller holes (1mm to 1.5mm as opposed to 2mm). The larger the holes, the better one can see through the vinyl; the smaller the holes, the better the graphic looks. I like to use a 60/40 film for all windows (60 percent graphic area and 40 percent holes). This increases the image area considerable over the 50/50. I am also aware of a 70/30 film configuration.

VUTEk recently introduced a new way to produce one-way vision graphics using clear material and special software. It works by interlacing lines of graphic with blank lines (similar to lenticular interlacing software). Users can print black lines, then white lines, then CMYK lines to create the effect. VUTEk's software allows users to set a clear gap distance to control the viewing distance and the amount of vision through the material. In this way, images can be produced on any clear substrate and perform as a one-way vision effect. One way vision technology is not restricted to just adhesive-backed film. It can be applied to just about any clear substrate.

IMPERFECTION ISSUES

Installing window perf is tricky because it doesn't seam well. It's much better to print the window perf as one-piece to avoid

Perforated window film can be used to create large window graphics. However, each panel must be carefully butt-seamed with no overlap to prevent the seams from looking bad from inside.

These window perf graphics, used at a bus stop, face the street but are clear to the people walking behind.

Here is 90/10 banner mesh being used on a 25´ x 30´ building mural

Fabric mesh was used at MGE's booth at a recent tradeshow.

seaming it. If seams overlap, the image will look darker in the areas of the overlap and the seams will be very obvious from the inside. However, for large applications where seaming is unavoidable — such as building applications — panels can be butt-seamed together by overlapping and then cutting off the overlap.

However, my main issue with perforated window film is water. Because the surface is covered with small holes, rain tends to collect in the holes and reduce vision considerably. In some cases, vision can be reduced to a blur so that nothing can be clearly seen through the film — a situation which defeats the purpose of one-way vision film.

The problem is somewhat dependant on the amount of rain in that part of the country, but doesn't leave much choice —the film can't be installed on the inside of the glass. Laminating window perf with a polyester film overlam becomes a problem because the adhesive won't reach far enough inside the holes to adhere to the glass, and ends up reducing vision. Also, graphics laminated to prevent the water issue curl up over time, so edge sealing is a good idea. Personally, I think it's better to have a long-lasting graphic and just accept the loss of vision when water is present.

The only other issue I have with perforated window film is vandalism. Since it only mounts to the outside of glass, when mounted at street level, kids love to vandalize perfs by picking off the film. I don't have a good answer for that problem.

PERFORATED BANNER (MESH)

I call it mesh banner material, but the truth is that mesh can be any material that is not adhesive backed and has some type of holes in it. The most common is the 7-10 oz banner perf offered by many companies. Each application must be matched to the right material. Here are some different configurations and applications:

90/10 Mesh — Without a doubt, my favorite banner is 90/10 because the image quality is fantastic (90 percent graphic area, 10 percent holes). I find that 90/10 is ideal for most outdoor applications when the banner is mounted to surfaces such as buildings, fences, walls, etc. Printing onto 90/10 is nice because the banner holes are so small that most printers can print directly onto the banner without using a backer material. Yes, a little ink gets on the printer platen, but it is easily removed. We often run this material through our 98″-wide Mimaki JV-3 and through our big NUR Fresco without a backer.

80/20 or 70/30 Mesh — This material is ideal for unsupported banners that are to be hung in the air, like banners that are hung across streets, at concerts, or at large events. The holes allow air to pass through, yet there is good coverage for the print. The 70/30 banner can also be made into a double-sided graphic, but double-sided printing onto banner mesh can be difficult.

50/50 Mesh — The only application for this material that I am aware of is backdrops for huge outdoor rock concerts. The size of the backdrop requires a large amount of blow-through, and, because the backdrop image is usually in front of a large black mesh banner at the back of the stage, the 50 percent image works well.

Finishing banner mesh requires a mesh reinforcing material, either a clear material for RF welding, or a solid material for stitching, it doesn't matter, but the strength of mesh alone is not enough to support being hung with grommets.

Fabric Mesh — In most cases graphics for fabric mesh are created via dye sublimation. Because the dye sub on mesh uses tissue paper as the slip sheet to protect the belt from

Here we used 60/40 window perf vehicle film. Notice that there is very little color difference between the window perf and the body vinyl.

The window perf on these store windows for the Boston Museum of Science is on the outside of the glass. Unfortunately, so are the neighborhood kids who vandalize them from time to time.

This 90/10 mesh banner material was used for a building entryway.

getting dye on it, the fabric can be double-sided. Mesh is ideal for retail signage, window displays and safety curtains where is it necessary to see through both sides of the graphic.

Fabric mesh needs to be stitched for all finishing, as the material cannot be welded. Reinforcement is not needed in fabric, as it is very strong and not often used outside.

FINAL WORD

Mesh could potentially be used to create a one-way vision effect, but the back of the material is white. Manufactures of banner mesh do not offer it in black just yet. Oh well. Perhaps one day. We have done jobs where the client needed a temporary roll-up curtain made from one-way vision, so we used 90/10 banner mesh on a curtain rod and it worked great.

Good luck. Be smart with your money, and I will see you on the show floor! DG

PERFORATED WINDOW FILM RESOURCE CHART

Company	Product	Web Site
3M	Scotchcal Perforated Film	www.mmm.com
Arlon	DPF 40WF, DPF 41WF	www.arlon.com
Avery Dennison	Perforated Window Film	www.digital.averygraphics.com
Clear Focus Imaging	One Way Vision	www.clearfocus.com
Continental Grafix AG	PanoRama, PanoVision	www.continentalgrafix.info
ContraVision	ContraVision, Backlite	www.contravision.com
FDC Graphic Films	1200, 1250, 7260 Series	www.fdcfilms.com
Gerber Scientific	GerberVision	www.gspinc.com
GMI	SPMPWE, SPMPWI	www.gmintl.com
Hexis USA	Classic Vue, MICRO4	www.hexisusa.com
Lexjet	PWFR5330, PWFR53100	www.lexjet.com
MACtac	JT5915P	www.mactac.com
Oracal	Orajet 3631	www.oracal.com
Plastiprint	PlastiView	www.plastiprint.com
UltraFlex	Ultravision Window Perf	www.ultraflexx.com
Universal Products	ThruVision	www.u-p.com

MESH VINYL RESOURCE CHART

Company	Web Site
Creative Banner Assemblies	www.creativebanner.com
Dr Graphix Imaging	www.drgraphix.com
Eastsign International	www.eastsign.com
FDC Graphics Films	www.fdcfilms.com
GCC America	www.gccworld.com
Gerber Scientific	www.gspinc.com
Hexis USA	www.hexis.net
John Boyle & Co	www.johnboyle.com
Keundo	www.keundo.co.kr
LG Chem	www.lgchem.com
Milano digital	www.milanoinc.com
Neschen Americas	www.neschenamericas.com
Océ North America	www.oceusa.com
Roland DGA	www.rolanddga.com
Sihl	www.sihlusa.com
UltraFlex	www.ultraflexx.com
Universal Products	www.u-p.com
Value Vinyls	www.valuevinyls.com
Verseidag Seemee U.S.	www.seemeeus.com