Creative Sheet Products

Straight Talk on Substrates

BY DAVE KING

Recently one of my salespeople asked me for a sample of each substrate we offer so she could send them to a client who wanted to understand what's what when it comes to boards.

So I cranked up the panel saw, and cut small samples of every board we have. We now have a very large pile of substrates that we will label and ship off to our customer. These sample substrates will be used at a *Castle Graphics 101* course put on by one of our customer's sales people.

So I start to chuckle, and I say to my sales person, "Can't you just *see* these 12 people sitting around a conference table passing around all these boards — and discussing how they can sell them to their customers?"

I'm sorry, but this just puts me into *stitches*. So, I offered to fix this seemingly hopeless meeting and come down and discuss *appli-*

cations that they can sell — and the boards that fit those applications.

Let's review some of the major sheet substrates used in the digital printing market, and examine which applications are best suited to particular substrates. Pay attention: I'm assigning each type of product with a code for ease of discussion:

Fome-Cor (B&W, NPS) is a 3/16" board that has a paper skin on both sides with a foam center. This is a widely used and inexpensive product. Most adhesives will stick to its paper surface. Used primarily for single-use graphics (event graphics), or graphics being placed in a frame so as to keep the

CODE	USAGE AND HANDLING
I	Indoor use only, will break down with moisture.
I/O	Can be used both indoor and outdoor.
W	Comes in white only.
B&W	Comes in both black and white.
BWC	Comes in other colors besides black and white.
PS	Product is best cut on a panel saw.
NPS	No panel saw. You need a special blade.
OS	Comes in sheets larger than 4' x 8'.
SS	Comes in special sheet sizes or in roll stock.

graphics safe from handling or being dropped. Cost for a 4' x 8' sheet is around $8.

Coroplast (I/O, BWC, NPS) is a 3/16" plastic polypropylene fluted board that looks just like corrugated cardboard but the flutes and skin are plastic. Ideal for all short term signs that will be placed in the ground using steaks that are inserted in the flutes of the Coroplast and then into the ground. Also used for bus frame mounting boards, pole signs held to the pole with tie wraps, and many other outdoor signs. Not a great product for indoor because when you mount a graphic to the board you can see the ribs of the flutes through the graphic. Cost for a 4' x 8' sheet is around $13.

Gatorfoam (I, B&W, PS) is a rigid foam board that has a paper skin on both sides and a foam center. Unlike Fome-Cor, Gator is very stiff and will stand up to more abuse than Fome-Cor. Gator comes in 3/16", 1/2", 3/4", and 1" thick sheets that come 4' x 8'. Gator is well-suited for large format graphics, but cutting and preparing the board for a print requires a little bit of work. First, you must cut the board, and because it has a very stiff paper skin, you end up with a sharp edge that can easily cut you, so sanding the edges before mounting is recommended. Before mounting you should wipe the board with a

By examining applications that are best suited to particular substrates, one can gain a fuller understanding of sheet products.

Here, Cory and Sean from Castle Graphics mount an adhesive-backed vinyl graphic to .040 polystyrene for the exterior of a bus.

tac cloth to get all the dust off the board. Caution: This product will not support being dropped from any distance because the material will break, and in most cases tear the graphic at the drop point. Cost for a 4' x 8' white sheet is around $23.

GatorPlast and **DuraPlast** (I/O, B&W, PS) are 3/16" foam-based boards with a *plastic* skin on both sides and come in 4' x 8' sheets. Ideal for graphics that need to be light in weight but have more strength than Gatorfoam and could be used outdoors. Cutting these products with a panel saw will help you increase your production by about 50 percent, and reduce your failures on mounting. The reason these products are so much better than paper-based boards (in my opinion) is that once you cut them, you only have to use a little alcohol and a terrycloth towel to wipe off the board and you are ready to mount. Plus, since the board is PVC-coated you can keep it cleaner while you are mounting and reduce the number of dust pieces being trapped between the print and the board during mounting. Finally, these boards are suited for both paper prints or vinyl prints and you do not have to worry about moisture. Cost for a 4' x 8' sheet is around $28.

Ultra Board (I/O, B&W, PS) is a 1/4" and 1/2" foam board with a .030 PVC skin on both sides. This product is very similar to GatorPlast and DuraPlast, but the skin is twice as thick. Because of its thick skin, the product is much stronger and tends not to warp, however, it is a little bit thicker. I personally like this product the best of all the foam boards. Cost for a 4' x 8' sheet is around $29.

Polystyrene (I/O, W, NPS, SS) is a generic sheet product that comes in many different thicknesses and sizes. Cutting this product is very easy because it is so soft. This product has so many great applications because of its light weight, flexibility, and low cost. Ideal for bus graphics, outdoor signs (will not crack in very cold weather), sign frame inserts (where you need a graphics on both sides that must

be rigid, and thin), or where you need a graphic to conform to a curved surface. A very good thickness that works for most applications is .040mm. Cost per square foot for .040mm is around $.65

Sintra (I/O, BWC, PS, OS) is a product that is pure PVC plastic and comes in thickness of 1mm, 2mm, 3mm, 4mm, 6mm, 10mm, etc. This product is ideal for all trade show graphics, will withstand a lot of abuse before the graphic will be damaged. Because it is PVC you can use PVC glue to attach just about anything to the back of the graphic for hanging, and in most cases Velcro is the preferred way of hanging Sintra. Sintra 3mm (1/8") is the most popular. A lot of shops will keep sheets of 1mm Sintra on hand for large jobs where they do not have time to hand-cut polystyrene (due to the size of the job) so they will use 1mm Sintra and cut the graphics on the panel saw. Sintra becomes very brittle when frozen, so it is not recommended to be used in outdoor applications where the cold and a fast-flying object could come in contact with it. Sintra 3mm is not as stiff at larger sizes as the foam-based boards, so images can warp when a large Sintra board is used. Cost for a 4' x 8' white sheet is around $25.

Plexiglas (I/O, PS, OS) is a clear acrylic product that comes in 1/16", 1/8", 1/4", 1/2" and other thicknesses. Ideal for backlit displays and most displays where glass is too expensive and not suited for the application. For most indoor backlits you would print onto a translucent white film, then apply an optically clear UV adhesive to the face of the graphic, and then mount this graphic to the Plexiglas. Easy to cut and sand, and with a little practice you can flame the edges to make them clear and smooth. Plexiglas

becomes brittle when it is cold, so this product is not always suited for outdoor applications. Cost for a 4' x 8' sheet is around $45.

Lexan (I/O, NPS, OS, SS) is a durable polycarbonate product that is the strongest of the clear, translucent substrates. This product comes in all different thickness. And because it is flexible, you can get 3/16" thick material on a roll that is 100" wide by 200' long. You would have your distributor cut the piece you need to size. When you use thin Lexan you must cut it with a special saw or use a blade and score it, but when you get to the thicker sizes, you can use a panel/hand/jig saw. Best application is sign faces, soda machine panels, and high-stress applications. The cost of the 3/16" product is around $5 per square foot, but you must pay for the width of the roll, so your actual cost is closer to $42 per foot.

DiBond (I/O, BWC, PS, OS) is an aluminum composite and is the best outdoor product I have ever worked with. This product comes in 2mm, 3mm, 4mm, thicknesses and sheets as large as 6'x12'. A 2mm sheet costs about the same as a sheet of MDO board, but it is lighter, stronger, and does not have to be painted. You can route it, bend it, cut it, and paint it! The product is made with PVC Sintra in the center with a powder-coated aluminum skin on both sides. Average cost for a 4' x 8' sheet is $65 .

CRUNCHING THE NUMBERS

By now you are probably saying to yourself, "Hey, he missed the *XYZ* board that I use in my shop." This was not intended as a comprehensive review of substrate sheet products.

The goal in any business is to maximize output, minimize cost of materials, and to

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Provided you use the correct blade, you can either cut on a table saw or panel saw. See your distributor for specific blades designed for Plexiglas or plastic base board.

This is a four-year-old 300 dpi inkjet paper print that was laminated and mounted to 1/2" Duraplast with a V-Cleat.
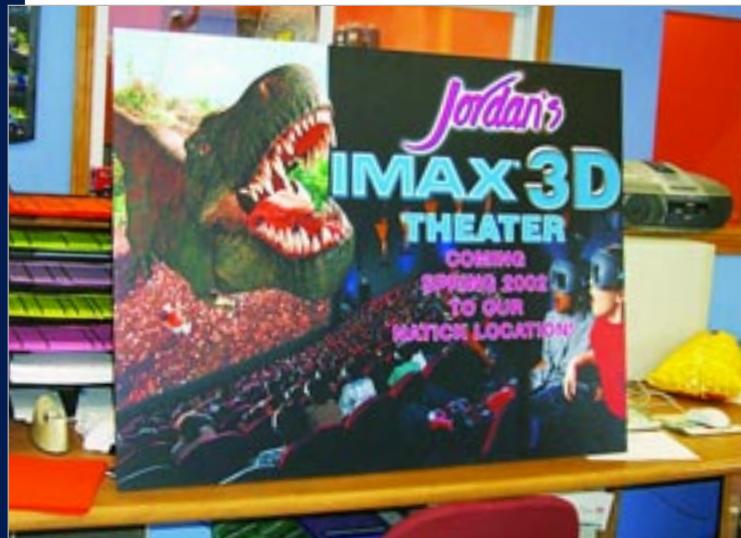
An example of a print mounted to 1/4" Ultra foam board.

This is a four-year old I30 dpi inkjet print mounted onto 1/2" foam board.
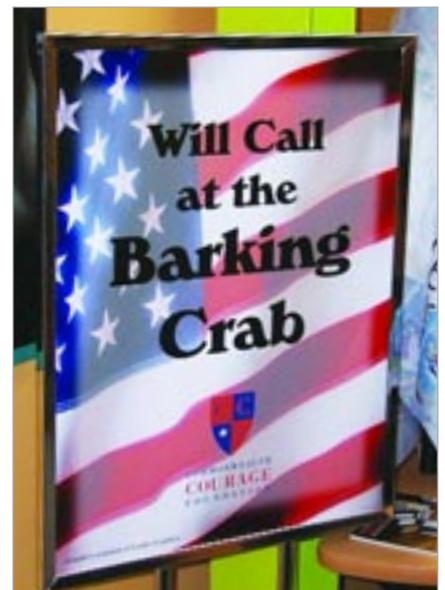
A 22" x 28" image was mounted onto Fome-Cor and fit into a frame stand. This is a nice application for Fome-Cor.

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A Lambda print is mounted to .040 polystyrene for a bus interior — a typical interior bus graphic application.

Boards can come in several colors.
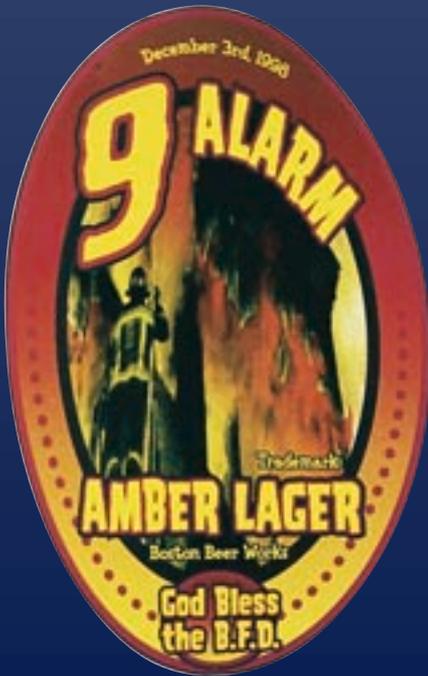
This Lambda print is mounted to Lexan.

After the Lambda print has been mounted, overbleed (excess paper print with adhesive) is trimmed away.

Please take the time to contact your local distributor and ask them about these and other fine sheet products. I'm sure the time you spend researching will pay off handsomely in the long run.

PRODUCT	MANUFACTURER	PHONE	WEB SITE (www)
DiBond Sintra	Alcan Composites	800-382-6445	Alusuisse-comp.com
Coroplast	Coroplast Inc.	800-666-2241	Coroplast.com/
Polystyrene Polyurethane Polypropylene Lexan	GE Polymershapes	800-333-0534	Gepolymershapes.com
DuraPlast RynoBoard	Gilman Brothers	800-852-4220	Gilmanbrothers.com
HartBoard HartLite HartCote HarTac	Hartman Plastics Inc.	800-284-7114	Hartboard.com
Fome-Cor Gatorfoam GatorPlast GatorFlex JetMount	International Paper	800-438-1701	TheOriginalOne.com
Komatex Komacel Komadur	Kommerling USA	800-330-2239	Koemi.net
Omega LlusterBoard Alumalite	Laminators Inc.	800-285-6544	Signboards.com
FiberLite FiberCorr Nu-Alum Alumafoam	Nudo Products Inc.	800-862-4131	Nudo.com
Airlyte	Pactiv	800-828-2850	Pactiv.com
Distributes various brands	Superior FoamBoards Inc.	800-362-6267	Foamaboards.com
Ultra Board Ultra Mount Ultra Plus	United Industries	800-441-3731	Ultraboard.com
Vintec I, II Corzan CPVC Celtec Aztek	Vycom	800-235-8320	Cpg-vycom.com
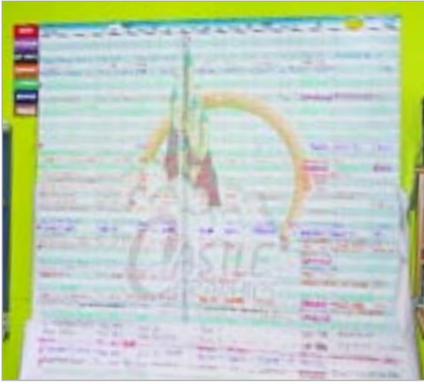
Inkjet print laminated with dry erase laminate and mounted to 3-mil Sintra. This application is used by a lot of my clients, especially for trade shows and corporate accounts. Big seller.

try and keep inventory down. The cost of the substrate is not as much as you might think when you do the numbers.

Take an order for 40 30" x 40" posters mounted to either Fome-Cor or Ultra Plus foam board. The cost difference between the boards is $21, or, $7 more per poster (you can only get three 30" x 40" posters out of a 4' x 8' sheet).

The question is how much more do you charge the customer for this $7 cost? This is for you to decide, but personally I don't think it is $7, I think it's a bit less — Fome-Cor takes longer to process and typically more mistakes are made with Fome-Cor because of the difficulty of repositioning prints on a paper-coated surface.

You will have to look back over the past and see what your failure rate is, and if you over-sized the Fome-Cor boards and then cut them to size. The real difference in this job was $7.35 per poster and each poster sold for $99.96 to $119.95. The small cost of the better product will make all the difference to your customers.

David King is director of operations for Massachusetts-based Castle Graphics. He has been in the digital industry for more than 19 years and works with a number of major manufacturers to help develop new and better technologies. In addition to writing for Digital Graphics Magazine*, David is a frequent speaker at* **The B.I.G. Show - Best In Graphics***. He has produced* InkJet Printing, Laminating and Mounting*, an educational video, for the Video Classroom series. For more information call 1-800-691-8047.* **DG**