Tips & Tricks for Aluminum Composite Media

On UV-Cure Printers

Aluminum composite materials, known commonly by the brand-names Alumalite™, Dibond®, and others, are popular media for UV-curable inkjet printing applications. This document describes a number of recommended techniques to get the most out of your UV printer and this media type.

Media Selection

Aluminum composites are fairly expensive per sheet, so you will want to ensure that you are receiving a usable, quality product. The principle manufacturers of aluminium composites include:

- Laminators, Inc. - makers of Alumalite, Econolite, and others
- Alcan Composites - makers of Dibond and others
- Nudo Products - makers of Alumacorr™ and others
- Global Sign Products - makers of Signabond® and others

There may be a number of distributors in your area. When shopping for a distributor, keep in mind that the lowest price does not necessarily deliver the best product. In order to work with the HP Scitex FB910 (ColorSpan 9840uv), HP Designjet H35000/H45000 Printer series (ColorSpan 5400uv Series), and ColorSpan Legacy UV-curable inkjet printers, the media must be essentially flat across the length and width of the sheet.

Media Storage

As noted above, media flatness is of the utmost importance. All rigid media should be stored flat, not on end, and should be supported fully from below. For best results, store the media in an environment similar to the printer.

Printer Preparation

The best quality from your printer will always be obtained using the High Quality print mode. Depending on your client's expectation and the content of the image to be printed, Production quality might give acceptable results. Given the typical cost per sheet, however, we recommend that High Quality mode be used to ensure optimal results with the fewest rejects and wasted materials.

There are two main concerns with printing any of the heavier media types such as aluminum composites. These concerns are (1) consistent feed *rate* of the media through the printer; and (2) consistent *tracking* of the media through the printer.

Feed Rate

Achieving the correct rate of media feed (or media advance) for each media type is fundamental to good quality output. The printer's media advance rate must be properly calibrated for each media type *and media size* for best results. The process of media advance calibration discovers the way in which a particular media feeds through the grit-and-pinch-roller system, and makes micro-adjustments to the printer's mechanics to achieve the correct rate. Media advance calibration is documented in your printer's *User Manual*.

Tracking

Even when the media advance rate has been properly calibrated, the weight of most aluminum composites—especially 4'x8' or larger sheets—creates conditions that can adversely affect the tracking of the media through the printer. Tech Note 2730, *Straight-Through Paper Path: A Handbook for Users* discusses some of these tracking problems at length. In essence, two steps should be taken to ensure optimal tracking through your printer:

1. Ensure the media support tables are level. A change in the height of the table from left to right can affect how the media engages the grit and pinch rollers, resulting in uneven feed and media steering in one direction as it passes through the printer. The tables should also be level from front to back, but see the following note on table height.

2. The input table should be adjusted so that the rollers are the same height as the grit rollers in the platen. The grit rollers typically are 0.015" (or 1/64") above the platen. Most levels will not fit in the space between the grit roller and the pinch roller above it, so use the following technique to set the table height: Attach a shim or feeler gauge of known thickness to one end of a 3' level. Plain copy paper is usually 0.006" to 0.007", so you can use two or three sheets of that as a shim if nothing else is available. Place the shimmed end of the level on the platen so that it projects out onto the table rollers. Adjust the table leveling feet as necessary. This difference, though slight, can have a significant effect with heavy media.

The output table should be the same height as the platen itself.

Media Fences

The media fences (standard with UVX; optional purchase for UVR), when used correctly, can alleviate tracking problems with heavy media. Please consult the Media Fences User Instructions, document 0706375 for details.
Pre-Production Tests

If you are just beginning to work with aluminum composites on your printer, some testing is advised before beginning a production print job. Conveniently, nearly all aluminum composite materials have a peel-off protective liner over the media surface. This provides an excellent opportunity to print a test job—including the necessary printer calibrations—without actually consuming a sheet of your media.

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