



▶ Contour Cutting and Laminating Printed Vinyl: Plan for Success

Drying a solvent based printed image is a key step that is often missed when decals are mass produced at some sign shops. With pressure to have short turnaround time, decals are contour cut immediately after the printing step is completed. This may possibly work when ink loading on the vinyl is low, but drying graphics is a key step before contour cutting when ink loading is medium to high.

Solvent based inks contain organic solvents as a carrier for pigments and polymers and are cured with heat that evaporates solvents from vinyl film. Key variables that can be controlled are: ink density, printer dryer settings and ink dry time. As with any solvent printer, graphic color scheme and design will dictate dryer setting and dry times prior to contour cutting or lamination. Highly saturated or dark images will require longer dry time due to higher volume of solvent loaded on the vinyl. Like any carrier, solvent needs to be removed from the vinyl for optimum adhesion to the substrate.

Another misconception is if the graphic is dry to the touch, it is ready to be contour cut or laminated. This is known as the skinning effect, where the top layer of ink is dry but the bottom layers are not fully cured. The best practice is to dry all printed graphics for 24 hours minimum prior to the contour cutting and overlaminating step. If printed graphics are kept in roll form, stand the roll vertically and loosely wound so the solvent can escape between vinyl layers.

Post/dryer should be set to 50°C/122°F or higher for optimum drying. Printing at a higher number of passes at a slower carriage speed will also help with post drying.

Important: Prior to the contour cutting process, all heaters (pre, print and post) on hybrid devices such as Roland XC540 (with cutter and printer in one) must be turned off and allowed to cool to room temperature. Contour cutting film while heaters are on will result in edge curling of the decal.

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