



TRANSAL PREMIUM / TRANSAL EASY – Recommended Instructions for Use of

What Is Transfer Printing

Transfer printing is an indirect printing method where inks are screen-printed onto a paper using a vacuum bed printing machine. The inks are dried and then transferred under a heat press onto the garment.

The production of transfers takes advantage of the two-stage curing process of the plastisol inks, available from all major textile ink suppliers, which require heating to 350° to 375° F in a heat press to fully cure and develop wash resistance properties, yet only require 195° to 250° F to be dry to the touch on the paper. Hence the ink can be dried on the paper without curing and then transferred at a higher temperature to the garment to develop its full wash resistance.

Paper

This is one of several lightweight one-side coated papers supplied by One Step Papers, called TRANSAL PREMIUM or TRANSAL EASY, where the transfer is designed to peel away after application while still warm.

Screen Printing

Prior to pre-shrinking, it is recommended that paper coming into a press room should be allowed to come to temperature equilibrium, i.e., the paper temperature needs to adjust to the press room temperature, before the paper is processed. This normally takes around 4 days. If the paper is subjected to cool temperatures during shipment and is then brought into the press room (which may be at a higher temperature and humidity) and is used immediately, then condensation can occur with subsequent ingress of moisture, causing cockling, curling, and wavy edges on the paper.

As paper shrinkage can cause registration problems, it is recommended that you then pre-shrink the paper prior to printing by passing through the dryer. For 25 x 38" paper, with a gas dryer, this is typically done at around 275° F for 20 to 25 seconds. A typical dryer line speed may be 75 fpm. For an electric dryer, the temperature can typically be 40° F cooler (225°-230° F).

The paper is then ready to be printed. The *glossier* side of the paper is the printable side. If there is a delay prior to printing or during the printing of the colors, it is recommended that the paper be stored in a hot box at 120° to 140° F so that the pre-shrunk sheets do not have the opportunity to gain moisture and grow, which could result in registration problems later.

Each color is printed in reverse, using a screen mesh count of typically 21 to 43T (210 to 430 holes per inch). If the printed color is too thin, it may result in poor application later. Each color is dried before the next color is added, at around 220° F for 20 to 25 seconds, using an infra-red or convection oven. If the ink is still sticky after drying, increase the dryer temperature. Note also that the printed colors should be butt-registered only, as overlapping colors will mix on transfer.

Transfer by Heat Press

When the whole image is printed, the print is ready for transfer. This should be done with a heat press typically set at 350° to 375° F, closing pressure set at 60 psi ("medium pressure"). It is advisable to warm the base (bottom) platen before beginning to transfer, as this prevents application problems with the first few transfers. Then place the garment on the non-heated base platen of the heat-press with the transfer on top, print side down. Close the press and leave for 8 to 10 seconds. Open the press and remove the garment, wait two (2) seconds, and then peel the backing paper away while still warm.

Note: For temperature measurements, it is not recommended that you rely on the digital readout of the dryer. It is more accurate to run a temperature "donut" probe through the drying tunnel. If you are experiencing any problem with paper upcurl, it is most likely caused by using the paper before it has come to press room temperature equilibrium, or because your dryer temperature is too high. To reduce curl, try lowering your dryer temperature in stages of 5° F each time until the curl disappears.

The above are GUIDELINES ONLY and should be taken as such. The user must realize that every press operation is different from the rest and affects the way that paper performs. The user must make his own judgments as to temperature settings, etc., depending on the particular circumstances and setup of his press and dryer. 3.10.2011